NCVS: NEW QUESTIONNAIRE AND PROCEDURES DEVELOPMENT AND PHASE-IN METHODOLOGY

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I. Introduction

A major redesign of the National Crime Survey (NCS) has recently been completed. As testimony to the redesign's comprehensiveness, even the name of the survey has been changed. It is now called the National Crime Victimization Survey (NCVS). The redesigned methods have had a profound impact on the measurement of crime in the United States. Compared to the "old" (NCS) methods, the "new" (NCVS) methods elicit about 50 percent more crimes of violence, 25 percent more crimes of theft, and 20 percent more burglaries (Table 1). These numbers do not represent an increase in occurrence of these crimes. What they do represent is an increase in the reporting of these crimes to interviewers. These are dramatic improvements in the measurement of crime.

The purpose of this paper is to provide the historical context for the NCVS redesign, the method by which these changes were introduced, and how the resulting impact on crime statistics relates to the specific changes in methodology. Specifically, the history of the NCS and the movement to improve the NCVS methods is reviewed in Section II. The methodology by which the new methods were phased-in is described in Section III. The measured impact of the new methods on crime estimates is discussed in terms of the specific changes made to the NCVS questionnaire and procedures in Section IV. The redesigned type of crime classification scheme is presented in Section V.

Note, many alternate sample designs, questionnaires, and procedures were considered and some tested during the course of the NCVS redesign. This paper does not review all these options, but focuses on those included in the final NCVS redesign methodology. Comprehensive overviews of considered options are discussed in Biderman et al. (1986), Alexander and Taylor (1989), and U.S. Department of the Justice (1989).

II. History of the NCS and the NCVS Redesign

The NCS has provided estimates of the level and rate of criminal victimization and information on the detailed characteristics of crime incidents and victims in the United States for over 20 years. However, in the background, much research has been conducted to evaluate and review the NCS methodology. During this process, many critical concerns were raised. To address these concerns, several rounds of research and testing have taken place over the past decade to develop improvements in the survey methodology.

A. NCS Background

The NCS was started in 1972. It is sponsored by the Bureau of Justice Statistics (BJS) of the U.S. Department of Justice and conducted by the U.S. Bureau of the Census. The survey was conceived to satisfy two broad goals in providing information on the incidence of crime and its effect on victims. The first goal was to launch a time series tracing changes both in the incidence of crime and in the association of various descriptive attributes with criminal victimization. The second goal was to create a vehicle that would allow the study of particular research questions related to criminal victimizations, such as the relationship of victims to offenders, the cost of crime, and the vulnerability of various types of individuals to victimization. The NCS was intended to complement information available from the FBI's Uniform Crime Reports (UCR) by collecting data on crimes not reported to the police and by providing more detailed information on victims and victimization incidents (U.S. Department of Justice, 1989).

1. Scope of Crimes and Their Attributes

The NCS is a household based survey that collects data on the amount and types of crime in the United States. It measures the incidence of personal crimes of violence (rape, robbery, aggravated assault, and simple assault) personal crimes of theft, and household crimes (burglary, motor vehicle theft, and household larceny). Other types of crimes, such as murder, kidnapping, commercial robbery, drug abuse, prostitution, fraud, commercial burglary, and arson, are not in scope.

Specific information is collected on each incident. These incident attributes include the following:
- the date, time and place of occurrence
- whether the crime was completed or only attempted
- whether there was a weapon present
- whether the crime was reported to police
- any injury or property loss suffered by the victim
- the number of offenders and their characteristics, including their relationship to the victim

The information is used both in the crime classification process and for analytical purposes.

Also, for analytic purposes, basic geographic and demographic information on each household is collected. The household information includes the following:

- region
- locality of residence (urban, suburban, and rural)
- family income
- household composition and size.

Personal demographic information on each respondent is collected for the same reason. The person information includes the following:

- age
- race
- sex
- ethnicity
- education
- marital status

2. NCS Sample Design and Size

A stratified multi-stage cluster sample was used to select the housing units in the NCS. Eighty-four large population areas were in sample with certainty and are called self-representing (SR) areas. Most SR areas have multiple interviewers. Of the remaining areas, 153 non-self-representing (NSR) areas were randomly selected with probability proportional to population size. Most NSR areas have a single interviewer.

Within the sample areas, the sample consists of all persons, aged 12 and older, in approximately 60,000 housing units. The reference period is 6 months long, and the sample is interviewed at 6-month intervals. For purposes of providing even interviewer workloads, the sample is divided into six rotating panels. The six panels each consist of one-sixth of the total sample (10,000 housing units). One panel is designated for sample each month.

Furthermore, each panel has six rotations. The six rotations correspond to the six tabulated interviews per household. The first interview is not tabulated. It places a "bound" on the subsequent interviews used for estimation. (A bound prevents the reporting of the same incidents in consecutive reference periods by eliminating incidents which were reported in the previous interview.) Since the initial interview has no such bound, it is not used in the crime rate estimate. A new rotation group enters the sample every 6 months, replacing a group retired from sample after being in sample for 3 years.

B. Evaluation of NCS Methodology

In the mid-1970's, the National Academy of Sciences (NAS) reviewed the NCS (Penwick and Owens, 1976). While the survey was found to be an effective instrument for measuring crime, reviewers identified aspects of the methodology and scope of the NCS that could be improved. Their proposed investigative research included the following:

- an enhanced screening section that would better stimulate respondents' recall of victimizations, thus reducing under-reporting because of forgotten incidents
- screening questions that would sharpen the concepts of criminal victimization and diminish the effects of subjective interpretations of the survey questions
- major methodological efforts on developing optimum field procedures and survey design
- additional questions on the nature and consequences of victimizations that would yield more useful data for analysis

More recently, the NCS rape estimates have come under scrutiny as too low (Koss, 1992). Generally, the concern was with the NCS's ability to fully capture the scope of sexual and domestic violence incidents.

C. NCVS Redesign Research and Tests
1. Forming the Crime Survey Research Consortium

The BJS sponsored the Crime Survey Research Consortium (CSRC) to investigate issues raised in the 1976 NAS review and to make recommendations that would improve the NCS. The CSRC included experts in criminology, survey design, and statistics. The project was intended to be a comprehensive reexamination of all aspects of the survey, including questionnaire design, collection strategies, administration of the survey, and analytical capabilities. The CSRC completed its work in 1985.

a. Improving the Screener Design and Strategy

The screener is the part of the questionnaire that ascertains whether the respondent has been a crime victim. The NAS report stated that the questions in the NCS screener were too long and complex, too closely tied to the UCR definitions and not intended to help respondents search their memories for in-scope crime victimizations. This concern was the focus of much of the CSRC research.

Through a series of pilot studies (Miller, Groves, and Handlin, 1982; Cox, et al., 1983) and a final University of Michigan Survey Research Center (SRC) study, a "short-cues" screener was shown to be most productive (Martin, et al., 1986). With a short-cues screener, the respondents are read an extended list of cues regarding crime victimizations and situations in which crime victimizations might have occurred before being required to respond.

From the screener used in the SRC tests, a NCVS redesign screener was developed. Feasibility studies were conducted in 1988. Based on their success, a controlled test was conducted in 1989. Results

showed that the redesigned screener substantially increased the measured crime rates in the test areas. The increase was 29 percent for crimes of violence, 15 percent for crimes of theft, and 26 percent for burglary (Hubble, 1990). The NCVS redesign screener is shown in Attachment A.

b. Use of Centralized Computer-Assisted Telephone Interviewing

Based on the successful use of centralized computer-assisted telephone interviewing (CATI) during the pilot studies at the U. of Michigan's SRC (Groves, et al., 1982), the CSRC recommended testing the use of CATI at the Census Bureau. While random digit dialing (RDD) was ruled out because its response rates were too low (Alexander, Sebold, Pfaff, 1986), it was still felt that using centralized CATI for conducting the NCS telephone interviews had several advantages that might reduce response variance (Alexander and Taylor, 1989). (Note, no explicit measures of response variance are currently obtained by the NCVS. Plans call for a reinterview program to measure response variance in 1996.)

As stated earlier, a housing unit is in sample seven times before rotating out of sample for the NCS. The first time in sample the field interviewer makes a personal visit to establish a household roster, collect demographic information, and determine the feasibility of conducting future interviews by telephone, in addition to conducting the bounding interview. If feasible, most subsequent interviews are conducted by telephone from the field interviewer's home. The exception is the fifth interview, which is conducted in person to reestablish personal contact with the household. Some special interviewing situations also require a personal interview. So, centralized CATI for the NCS involved the conducting of the planned telephone interviewing from a centralized facility using a computerized questionnaire, instead of from field interviewers' homes using the paper questionnaire.

While there were different schools of thought, we initially expected CATI to have little impact on crime estimates. However, much to our surprise, the results showed that centralized CATI substantially increased the crime rates in the test areas. The increase was 26 percent for personal crimes and 18 percent for household crimes in "hard-to-enumerate" multiple-interviewer areas. While less dramatic than in multiple-interviewer areas, centralized CATI in single-interviewer areas also increased the crime rates in some categories (Rosenthal and Hubble, 1993).

The combined effect of centralization (i.e., ability to monitor interviewers and their ability to more freely interact among themselves) and computerization of the questionnaire are generally believed to help standardize the interviewer-respondent interaction leading to higher and more realistic crime rates. Even though this centralized CATI effect was explicitly measured only with the NCS methodology, BJS decided to test maximum use of CATI in conjunction with the redesigned screener.

c. Redefining Series Crimes

A series crime is defined as a crime in which similar incidents have occurred and for which the respondent cannot recall dates and other details well enough to report them separately. When a series crime is reported, one incident report is completed based on the most recent occurrence. The NAS report expressed concern over the fact that none of these series crime were included in the calculated crime rate estimates.

Based on a CSRC recommendation, an experiment was conducted in 1985 to obtain more detailed information on the nature of series crimes (U.S. Department of the Justice, 1987). The major result of the experiment was that for about 60 percent of the series crimes, the respondents were able to recall the details of each incident and complete separate incident reports. For 3 to 5 incident series crimes, about 80 percent of the respondents were able to provide details of each incident separately. Based on these results the minimum number of incidents needed to qualify as a series crime was raised from three to six for the NCVS redesign. Even though a consensus has never been reached on how to best treat series crimes in calculating victimization rates, the belief is that the increased threshold for defining a series crimes should reduce the impact of their inclusion or exclusion.

d. Interview-to-interview Recounting

NCS interviews take place within the first two weeks of the interview month, with a reference period of the previous six calendar months. This practice postpones the collection of incidents occurring between the end of the reference period and the interview until the next interview six months later. Because of the potential loss of detailed information, the CSRC advocated an interview-to-interview recounting period, which would result in reports of all incidents occurring after the previous interview being reported to the interviewer. This revised procedure was incorporated into the NCVS redesign.

e. Including New Variables about Victims and Crimes

The NAS report pointed out areas where more information about victims and crimes were needed. Following up on this, the CSRC defined three general areas where additional variables should be developed

and data collected (U.S. Department of Justice, 1989).

i) Respondent Lifestyle Variables

The 1984 Victim Risk Supplement demonstrated that a person's lifestyle is related to their likelihood of being victimized (Bureau of Justice Statistics, 1986). From this result, a set of questions were developed to provide data on the lifestyle of the respondent. The lifestyle variables include questions on the respondent's occupation, usual activities (shopping, evenings away from home, and use of public transportation), and safety precautions taken. These data are used to assess the respondent's vulnerability to victimization.

ii) Victim Behavior Variables

Questions were developed to collect more information on the interaction between victims and offenders during a violent crime incident. Specifically, respondents were asked in more detail what they did about the incident while it was in progress, whether they believed their action helped or hurt their situation, and, if so, what was the nature of the impact. Also, new questions were added to help determine the effect of actions taken by bystanders and to examine who was the first to use, or threaten to use, physical force.

iii) Other Crime Information Variables

In addition to the variables mentioned above, other questions were added or revised to provide more information on victimization characteristics. These questions include information on perceived offender substance abuse, same offender multiple victimizations, place of occurrence, weapon use by offenders, and contacts with the criminal justice system.

2. Testing the Package of NCVS Redesign Methodologies

During 1990 and 1991, a NCVS questionnaire reflecting experience from the previous testing in combination with the use of maximum CATI in multiple-interviewer areas was control tested. This step of the testing gave a final assessment of the NCVS methodologies as an entire package before committing fully to the implementation of the NCVS redesign.

The interviewer areas included in the NCVS test sample and the NCS control sample were a 20 percent subset of the NCVS and the NCS half samples, respectively. (The 1990 and 1991 NCVS test sample was 10 percent of the total sample.) The NCVS and NCS half sample selection procedures are described later in Section III.B.2.c.

The results gave every reason to continue implementation. The NCVS redesign methodologies substantially increased the measured crime rates in the test areas. In particular, the increases in personal crimes were 62 percent and 53 percent for multiple-interviewer and single-interviewer areas, respectively (Hubble, 1991).

3. Study Group on Estimating Rape and Domestic Violence Victimizations

At the inception of the NCS in 1972, it was generally deemed inappropriate for a government sponsored survey to ask respondents (as young as 14 years old) directly about rape. Reports of rape and attempted rape were obtained only if respondents volunteered this information in response to screener questions about attacks. In terms of domestic violence, the screener did little to make it clear that these kind of incidents are indeed considered criminal victimizations. Based on these problems and advocates' criticism, the issue of improving the measurement of sex crimes and domestic violence resulted in the formation of a special group associated with the American Statistical Association's Committee on Law and Justice Statistics. This group developed enhanced questions on rape, sexual assault and domestic violence to get better estimates of these difficult to measure crimes. A successful feasibility test of the revised NCVS questionnaire was conducted from July to December 1991.

III. NCVS Redesign Implementation

There were two primary goals of the NCVS redesigns implementation. First, changes should be incorporated as soon as possible. Second, changes should be introduced in a way that allows the continuation of the NCS time series including the ability to produce annual change estimates. With these goals, it was realized that the proposed changes should be divided into two groups--those that had potential for affecting NCVS crime rates and those that had little potential for affecting crime rates. To address the first goal, changes judged to be "non-rate affecting" would be implemented as soon as feasibility testing was completed. "Rate affecting" changes would be implemented at a later date, simultaneously, in response to the second goal.

A. Defining Implementation Packages

Once all the proposed changes had been agreed upon, the non-rate affecting and rate affecting implementation packages were defined.

1. Non-rate Affecting Package of Changes

The non-rate affecting changes consisted mainly of revisions to the NCS "incident" form. (The incident form collects data on the characteristics and consequences of crime victimizations.) The reasoning is that changes to the incident form would have no foreseeable impact on the results of the screener used to elicit reports of crime victimizations and therefore negligible impact on crime rates.

Of the proposed changes outlined in Section II.C, the victim behavior variables (II.C.1.e.ii) and other independent variables (II.C.1.e.iii) were considered

to be non-rate affecting. In addition, two other changes were included with the non-rate affecting package. First, a whole set of questions about the respondent's employment status were dropped. It was felt that the costs (both in terms of money and maintaining respondent rapport) associated with these questions clearly outweighed the benefits. Second, 12- and 13-year old respondents would now be interviewed directly, with an adult's permission, rather than by proxy. This was done to enhance the accuracy of information collected about incidents involving 12- and 13-year old victims. While it can be reasonably argued that this change could affect the 12-13 year old rates for some types of victimizations, it was generally felt that overall victimization rates would be minimally affected.

2. Rate Affecting Package of Changes

The rate affecting changes consisted of changes made to the screener, method of data collection, and significant definition changes. Of the proposed changes outlined in Section II.C, the screener design and strategy, centralized CATI, redefining series crimes, interview-to-interview recounting, and respondent lifestyle variables (II.C.1.a-e.i) were considered to be rate affecting. For several of the lifestyle questions, it was thought that the appropriate time to asked them was before the screener questions. Since it has been shown that victimization rates are sensitive to the insertion of supplemental questions prior to the screener (Shapiro, 1987), we considered the lifestyle questions rate affecting.

In addition, two other changes were included with the rate-affecting package. First, the population controls used for the NCVS estimation procedures are now adjusted for differential 1990 Census population under-count. Second, a major revision to the type of crime coding scheme shifts most of what were previously categorized as personal crimes of theft into household crimes of property theft. (See Section V for more details.)

B. Implementation Methods and Timing

Because of the inherent differences in the set of non-rate affecting changes and the set of rate affecting changes outlined above, the implementation methods and timing for the two set of changes were very different.

1. Non-rate Affecting Changes Implementation

Since non-rate affecting changes by definition are only constrained by the first goal of implement as soon as possible, the Census Bureau began testing this package of changes immediately following the BJS's approval. Two feasibility tests were conducted utilizing regular NCS interviewers in 1985. With feasibility established, the non-rate affecting changes went into production in July 1986.

Note, no experimental design was implemented to explicitly measure changes in victimization rates from these non-rate affecting changes. Though more analysis could possibly be done, this paper will not address this issue further. However, the fact that no dramatic "blips" in the major crime categories' time series were observed in 1986, serves as an indicator that these changes were indeed non-rate affecting to some extent.

2. Rate Affecting Changes Implementation

Because of the comprehensiveness of the rate affecting changes and the inherent difficulties in meeting the second implementation goal of maintaining the integrity of the crime series and the ability to produce annual change estimates, there was much debate over how to best implement these changes. Also, because of this, the first goal of timeliness was difficult to meet to everyone's satisfaction.

Several viable options existed for meeting the second implementation goal. (A detailed discussion of the relevant issues is contained in Alexander and Taylor (1989).) However, with the cost constraints being quite severe, the option to split the production survey sample roughly in half and implement the NCVS redesign methodology in half the sample and maintain the NCS methodology in the other half was selected as the best alternative. With this plan, the overlap would eventually end with the NCS half sample converting to the NCVS methodology. Implementation began in January 1992.

Even with this decision made, several implementation issues remained to be addressed concerning the overlap.

a. Duration of the Overlap

Given the need to produce annual change estimates, it was necessary for the implementation of the half sample to be of sufficient length to allow the production of annual estimates. Because of the 6-month reference period, 18 months of data is needed to obtain all reports of incidents occurring in a calendar year, which is needed to produce an annual estimate. So, the duration of the overlap was January 1992 - June 1993.

With this design, estimates for 1992 can made with either the NCS data or the NCVS data. The change in rates between 1991 and 1992 can be calculated using only NCS results. The 1992-93 change can be estimated using only NCVS results. However, the variance of both change estimates is increased because only half the 1992 sample can be used in a given estimate.

Also, the effect of the changes in the NCVS redesign methodologies can be estimated by

comparing the 1992 NCS and NCVS estimates. In addition, research on methods to eventually "link" the NCS and NCVS crime series can be conducted using these data. Note, the 18 month overlap design allowed for the discarding of the first few (up to six) months of data, if necessary, due to start-up problems without major consequences to our ability to measure the impact of the NCVS methodology.

Note, no such start-up problems were encountered and at the end of the 18 month overlap the NCVS methodology was implemented in the full sample in July 1993.

b. Level of Splitting the Production Sample into the NCVS and NCS Half Samples

The validity of the NCS 1991-92 and NCVS 1992-93 change estimates was dependent on our ability to avoid "contamination" of the 1992 NCS and NCVS estimates. In particular, we wanted the interviewing procedures associated with the NCS methodologies to remain unchanged during the entire 18 month overlap period. Our main concern was with the new NCVS methodologies or concepts being used by interviewers on the NCS half sample. To minimize the possibilities of this kind of contamination each interviewer was assigned to one and only one of the methodologies. So, the sample was split at the interviewer level.

To the extent possible, separate NCS and NCVS operations were established in the field offices to reduce the chances of contamination. These operations include training, observation, reinterview, and interviewer materials and correspondence.

c. Selecting the NCVS and NCS Half Samples

From above, the lowest level at which the selection could take place was at the interviewer level. The selection scheme was based on this constraint. All interviewer areas were formed into pairs with similar characteristics. The NCVS half sample was defined by randomly selecting one interviewer area from each pair. The remaining interviewer areas defined the NCS half sample. This selection procedure resulted in the NCVS and NCS samples being roughly of equal size.

The procedure for forming the interviewer area pairs varied by the number of interviewers defining the area. The 232 interviewer areas with one to four interviewers were sorted on the following characteristics:

- Region (Northeast, Midwest, South, West)
- Self-representing (SR)/Non-self-representing (NSR) status
- Number of interviewers
- Total crime index rate from Uniform Crime Reports (UCR).

Interviewer areas adjacent in the sort were paired. So, most pairs have the same region, SR/NSR status,

number of interviewers, and similar total UCR crime rates. Some exceptions were made when no suitable partner was nearby in the sort. So as to form pairs with similar total UCR crime rates, interviewer areas with a different number of interviewers, SR/NSR status, or at times region were paired. These occurrences were fairly rare. Note, the reason for pairing 2-to-4-interviewer areas, instead of assigning half of the interviewers to the NCVS sample and the other half to the NCS sample, relates to the planned use of CATI and is addressed in the next section.

The ten interviewer areas with five or more interviewers were handled differently. It was not feasible to form five pairs with comparable partners from these ten areas. So, within each of these areas, two groups of interviewers of roughly equal size were defined. Each group consisted of at least two interviewers whose assignment areas were contiguous. One group was randomly assigned to the NCVS half sample, the other to the NCS half sample. Note, where possible a controlled selection procedure was implemented to reduce the variability associated with the selection of the NCS and NCVS half samples in these areas.

d. Maximum Use of Centralized CATI in the NCVS Half Sample

As described in Section II.C.1.b, about half of a field interviewer's workload consists of telephone interviews. When these cases are interviewed through the use of centralized CATI, it possibly creates inefficient (i.e., too small) workloads for these interviewers. The field staff are better able to handle this, if these inefficient workloads are clustered. Then, say through interviewer attrition, the inefficient workloads can be more easily collapsed to create efficient workloads. So, all the planned telephone interviews in 2-or-more-interviewer NCVS areas were eligible for CATI. This includes the NCVS half of the five-or-more interviewer areas.

As stated previously, centralized CATI has a significant effect on crime rates. Therefore, it is critical to maintain fairly constant proportions of CATI use from year to year when producing annual change estimates. When the NCVS methodology was fully implemented (July 1993), all the 2-or-more-interviewer areas were using CATI. So, in order to have similar proportions of CATI use in the 1992 and the 1993 NCVS sample, it was critical that all the 2-or-more-interviewer areas in the NCVS half sample use CATI during the overlap (January 1992 - June 1993). This is why when selecting the NCVS and NCS half samples, it was not possible to, say for a 2-interviewer area, assign one interviewer to NCVS and the other to NCS. Because, if we did, there

would have only been one NCVS interviewer and the same extent of CATI usage would not have been possible in the NCVS half sample, as it eventually would be once NCVS was fully implemented and both interviewers were using the NCVS methodology. Thus, if 2-to-4-interviewer areas interviewers were split between the NCVS and the NCS half samples, the proportion of CATI use would have been substantially lower in the NCVS sample in 1992, than in 1993. This difference in CATI use would have then biased the NCVS 1992-93 change estimates.

In addition to the multiple-interviewer areas, centralized CATI was utilized in single-interviewer areas, wherever possible. However, to avoid severely inefficient workloads, only half of the planned telephone interviews were eligible for CATI. Still, even with this modification, only those single-interviewer areas with larger than average workloads could participate. This was about half of the single-interviewer areas.

Overall, this meant that about 25 to 30 percent of the NCVS half sample was interviewed through the use of centralized CATI.

Note, the NCS half sample maintained its level of about 5 percent of the sample interviewed through the use of centralized CATI. The NCS had been at this level of CATI since 1988.

IV. Impact of NCVS Redesign Methodology on Crime Estimates

The resulting magnitude of the impact of the rate-affecting changes on victimization rates are nothing short of profound (See Table 1.) (Note, for the remainder of this paper the set of rate-affecting changes, will in general be referred to as the "NCVS methodology.") With this result, the NCVS methodology has brought about a clearer understanding of the scope and characteristics of criminal victimization in the United States.

By comparing the 1992 NCVS crime rates to the 1992 NCS crime rates we can see that the effect of the NCVS methodology varies by type of crime. Overall for the NCVS, personal crimes were 37.6 percent higher and the household crimes were 18.5 percent higher. However, the measured impact of the NCVS within the personal crime categories was highly varied: +161.9 percent for rape, no significant difference for robbery, +23.6 percent for aggravated assault, +75.2 percent for simple assault, and +31.3 percent for personal crimes of theft. For household crimes, the impact was also varied: +19.9 percent for burglary, +24.0 percent for household larceny, and no significant difference for motor vehicle theft.

There are many differences between the NCVS and NCS methodology that would contribute to the higher NCVS crime rates. These specific differences might also relate to the varied degree of differences by type of crime. One of the biggest differences between the NCVS and NCS is their screeners and some of these differences are quite specific to certain types of crime (Hubble, 1990). Previous centralized CATI research had shown the effect to be differential by type of crime (Rosenthal and Hubble, 1993). Also, the frequency of series crimes is very differential by type of crime (U.S. Department of Justice, 1987). To gain a further understanding of the differential impact of the NCVS methodology by type of crime results in Table 1, we explored the potential of the screener, centralized CATI, and series crimes, separately.

A. The Screener

Even though many changes to the screener may relate to specific types of crimes, there are some changes in the format that carry across all types of crimes. One is the avoidance of the "yes/no" question-and-answer format of the NCS screener. The NCVS screener uses a "short-cues" approach throughout. With a short-cues screener, the respondent is provided an extended list of cues regarding crime victimizations and situations in which crime victimizations might have occurred. The idea is to provide respondents sufficient time to recall victimizations, which are fairly rare, and help in structuring the recall task before being required to respond. Another general change in the NCVS screener is the exclusion of criminal terms and concepts found in the NCS screener, such as, "stickup," "mugging," and "rob".

The other differences between the NCVS and NCS screeners are related more to specific types of crime categories. We will address each type of crime category individually.

1. Crimes of Violence

The NCVS screener questions provides more specific cues regarding the kinds of items used as weapons and the kinds of offender actions that better serve as "memory jogs" and better define the in-scope crimes of violence for the NCVS than the NCS screener questions.

In addition, the explicit cuing of rape and sexual assault has been added to the NCVS screener. In particular, the utility of the NCVS screener question on forced or unwanted sexual acts is clearly demonstrated by the fact that about 33 percent of all incidents ultimately classified as a rape are reported through this question, even though it is the last screener question and the respondent has already been specifically asked about rape in a previous question (Pascale, 1995).

In contrast, the NCVS methodology having virtually no effect on robbery is also of interest.

There appear to be two possibly related explanations for this result. One reason is the fact that completed and attempted robbery are specifically cued for in the NCS screener. The other reason is that robbery is a highly salient event with possibly less reason than other crimes of violence to <u>not</u> report the incident. This possibility is supported by the fact that the proportion of crimes committed by non-strangers (someone the victim knows) is only about 20 percent for robbery, while it is about 50 percent for other crimes of violence.

Furthermore, two frames of reference have been added or more explicitly defined in the NCVS screener than in the NCS screener. The first frame relates to the possible location of a crime or activities the respondent may have been involved in at the time of the incident. This screener question takes the few sporadically mentioned cues of location/activity in the NCS screener questions and creates another specific frame of reference with a greatly expanded list of location/activity cues.

The second new NCVS frame of reference relates to crimes being committed by someone the respondent knows. During the NCS evaluation, a major area of concern was with its inability to detect incidents of domestic violence well. To address this concern, a screener question was developed to specifically elicit reports of incidents in which the offender is known to the respondent. The utility of this NCVS screener question is indicated by the fact that 10 percent of all NCVS incidents ultimately classified as assaults are reported through it, even though assaults have already been explicitly screened for in the previous screener question (Pascale, 1995).

Another interesting result from Pascale (1995), relates to the "catch-all" screener questions. These two questions are identical in wording and location in that they are the last two screener questions for both the NCVS and the NCS. Four percent of NCVS crimes of violence are reported in the catch-all questions, while 8 percent of NCS crimes of violence are in the catch-all questions. So, even though the NCVS methodology produced nearly 50 percent more crimes of violence than the NCS methodology, it still has substantially fewer crimes of violence being reported in the catch-all questions. This certainly seems to be an indication of how well the previous NCVS screener questions elicit crimes of violence incidents relative to the previous NCS screener questions. In addition, the higher percent of crimes of violence being reported in the NCS catch-all questions may be an indication of a greater number of incidents never elicited.

2. Personal Crimes of Theft and Household Larceny

The number of cues in the NCVS screener has been greatly increased in an effort to cue the respondent to specific items that may have been stolen and to expand the respondent's frame of reference of the kind of things that may have been stolen.

As with crimes of violence, the two new frames of reference (location/activity and someone you know) provide many more cues to assist respondents in recalling crimes of theft and possibly household larcenies. A possible indication of the utility of the new location/activity screener question is that about 10 percent of incidents ultimately classified as personal crimes of theft and 6 percent of incidents ultimately classified as household larcenies are reported through this screener question even though thefts/larcenies have already been explicitly screened for in previous screener questions.

3. Burglary

In general, the same frame of reference is established for burglary in the NCVS and NCS screener. However, the NCVS screener has more specific cues. These additional cues relate to how the offender might have gotten in or attempted to get in the respondent's home and other types of buildings that may be on the respondent's property.

4. Motor Vehicle Theft

There is no significant difference in motor vehicle thefts rates between the NCVS and NCS methods. One reason is that the NCVS and NCS screener questions are very similar. Another reason is that motor vehicle thefts are highly salient events (demonstrated by the fact that they have the highest percent reported to police, 75 percent (U.S. Department of Justice, 1992)), suggesting little room for improvement in their measurement. Similar results were observed in the CATI research. While CATI increased ratios for most types of crime, it had no significant effect on motor vehicle theft rates (Rosenthal and Hubble, 1993).

B. Centralized Computer-Assisted Telephone Interviewing (CATI)

The use of CATI from a centralized telephone facility has been previously shown to increase the number of reported crimes. The combined effect of centralization (i.e., ability to monitor interviewers) and computerization of the questionnaire are generally believed to help standardize the interviewer-respondent interaction leading to higher and more realistic CATI crime rates. Even though this CATI effect was explicitly measured only with the NCS methodology, there is evidence that the effect applies to the NCVS methodology as well. Specifically, the use of CATI increased the NCS rates of assaults by about 20-to-25 percent, personal crimes of theft and household larceny by about 10-to-15 percent, and burglary by about 5-to-10 percent. CATI's effect on rape, robbery, and motor

vehicle thefts was negligible in the NCS (Rosenthal and Hubble, 1993).

Unfortunately, we have no direct way of assessing what percent of the differences observed in Table 1 are attributable to CATI. In the future, we will assess the impact of CATI in a non-random subset of single-interviewer areas where a random half of the sample is eligible for CATI. Comparing those NCVS CATI impact results to NCS CATI impact results from similar single-interviewer areas might shed some light on the overall impact of CATI on the NCVS.

Until then, there may be some merit in exploring what part of the overall impact CATI would explain, assuming its impact on the NCVS is similar to that of the NCS. Pursuing this, for the differences in Table 1, the CATI effect "explains" about 40-to-50 percent of the total NCVS effect on assaults, personal crimes of theft and household larceny, and about 30-to-40 percent of the total effect on burglary.

C. Series Crimes

Under NCS procedures, a series crime was defined as three or more similar but separate crimes which the victim is unable to recall individually or describe in detail to an interviewer. These crimes have been excluded from annual estimates because the victims were unable to provide details for each event and a consensus was never reached on how to handle them if they were to be included. Special reports have included series crimes as one victimization.

Recognizing the difficulty that series crimes pose in terms of estimation, the Bureau of Justice Statistics decided for the NCVS procedures to raise the minimum threshold for accepting a series report from three to six incidents. This decision was based on a special study of series crimes which showed that respondents were able to complete separate incident reports for as many as 5 incidents (U.S. Department of Justice, 1987). The result is that if a respondent reports three to five similar incidents to an interviewer, data on each incident are collected.

The effect of changing the series crimes definition on victimization rates is difficult to accurately assess. As a crude measure of what the NCS rates would have been using the NCVS series definition, we recomputed the NCS rates treating all series crimes with 3 to 5 incidents as 3 to 5 separate victimizations, respectively. From this we could see that the new series crime definition effect on victimization rates is probably a small increase of less than 5 percent for several types of crime. The notable exceptions are assault, burglary, and household larceny, where the increase in crime rates due to the change in the series crimes definition may be about 10 percent. These crude estimates are somewhat supported by preliminary findings of fewer series crime reports in the NCVS.

In terms of Table 1, the effect of redefining the series crimes "explains" about 20 percent of the total NCVS effect on assaults and about 40-to-50 percent of the total effect on burglary and household larceny.

While the case may be overstated to some degree, it is interesting to note that most of the total NCVS effect for burglary and household larceny are "explained" by the effects of centralized CATI and redefining the threshold for series crimes from three to six incidents.

V. Redesign of the Type of Crime Classification Scheme

A major reclassification scheme has shifted most of what were previously categorized as personal crimes of theft into property crimes of thefts. Under the NCS scheme, theft was characterized as a personal or household crime based on location of the incident. If an item were stolen from the grounds of a home, it was considered a household theft; if the same item were stolen from someplace away from the home it was considered a personal theft. This distinction was rather arbitrary and unwieldy since many items are jointly owned by members of a household. The redesigned NCVS classifies all thefts as household thefts, unless there was contact between victim and offender. Personal thefts with contact (purse snatching and pocket-picking) are now the only types of theft that are categorized as personal theft.

VI. Conclusion

The redesign of the NCVS has been a major success. The new methodology has resulted in a significant reduction in measurement error of victimization estimates. Several of the NCVS methodology components appear to have contributed to the improved measures, including: the screener design and strategy, centralized CATI, and redefining series crimes. The phase-in methodology appears to have had a near seamless execution. Non-rate affecting changes were implemented, as soon as possible. These additional data items have already appeared in several BJS reports. The overlapping NCS and NCVS panels method of phasing in the rate affecting changes worked in maintaining BJS's ability to produce unbiased 1991-92 (based on the NCS) and 1992-93 (based on the NCVS) annual change estimates. This method also has provided a rich data source for comparing the two methodologies and for eventually "linking" the two time series.

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TABLE 1

COMPARISON: 1992 NCVS AND NCS CRIME RATES
by Type of Crime

| TYPE OF CRIME | CRIME RATES | | PERCENT |
	NCVS	NCS	DIFFERENCE
Personal Crimes(1)	125.5	91.2	37.6 *
Crimes of Violence	47.8	32.1	49.1 *
Rape	1.8	0.7	161.9 *
Robbery	6.1	5.9	2.3
Completed	4.0	3.9	3.2
Attempted	2.0	2.0	0.6
Assault	40.0	25.5	57.0 *
Aggravated	11.1	9.0	23.6 *
Simple	28.9	16.5	75.2 *
Crimes of Theft	77.7	59.2	31.3 *
Household Crimes(2)	180.4	152.2	18.5 *
Burglary	58.6	48.9	19.9 *
Household Larceny	103.3	83.2	24.0 *
Motor Vehicle Theft	18.5	20.1	-8.0

(1) Personal crime rates per 1,000 persons age 12+

(2) Household crime rates per 1,000 households

* Significant at the 10% level