

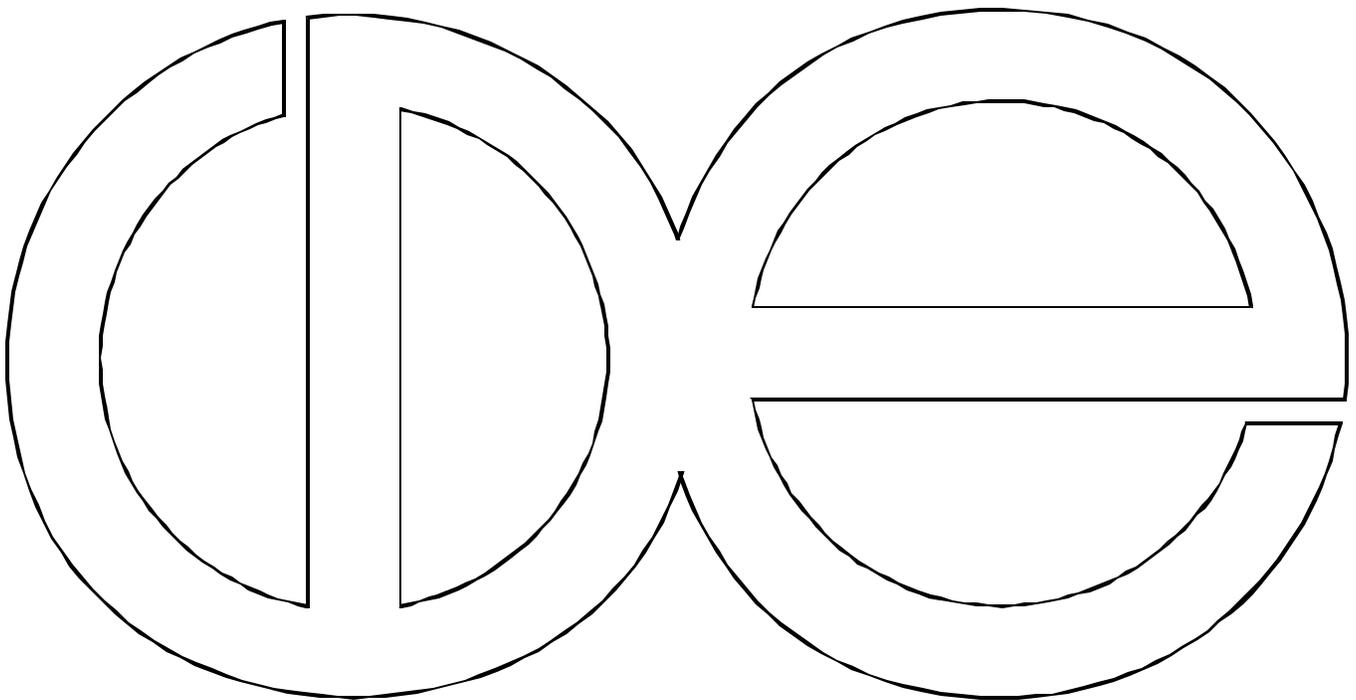
**Center for Demography and Ecology
University of Wisconsin-Madison**

Development of a Personal Event Schema

Jennifer Dykema

Nora Cate Schaeffer

CDE Working Paper No. 99-27



Development of a Personal Event Schema

Jennifer Dykema and Nora Cate Schaeffer
Department of Sociology
University of Wisconsin-Madison
1180 Observatory Drive
Madison, WI 53706

February 8, 2000

This research was supported in part by National Institutes of Health grant HD31042-01 to Nora Cate Schaeffer. Computing was provided by the Center for Demography and Ecology, which receives core support from the Center for Population Research of the National Institute for Child Health and Human Development (HD-05876). We thank Robert Mare, Jane Piliavin, and James Sweet for their comments and I-Fen Lin for creating the data files. Earlier versions of this paper were presented at the 1995 International Conference on Survey Measurement and Process Quality held in Bristol, England and at the 1995 annual meeting of the American Association for Public Opinion Research held in Fort Lauderdale, Florida.

Abstract

A substantial proportion of the research conducted by social scientists involves measuring, describing, and analyzing phenomena that can be broadly classified as events or behaviors. In order to measure experience systematically and in a manner that permits generalization across individuals and to larger groups, retrospective self-reports about events are often obtained within the context of a survey interview. Responses to survey questions are treated as reflecting some truth about the individual's past. A critical problem with this formulation, however, is that not only do we usually lack methods of measuring the accuracy of survey responses, but we do not have a generalized framework for understanding or systematically analyzing which characteristics of experience, if any, influence errors in reports about those events. Furthermore, we do not fully understand how to design survey instruments to aid respondents in reporting more accurately.

The analysis presented in this paper combines findings from the literature on response effects in survey research with principles derived from the social cognition paradigm within social psychology to both expose and reduce reporting errors for a real-world phenomenon, child support. The central research question addressed is: To what extent do the structural features or characteristics of receiving and making child support payments predict errors in reports about those events in a validation study? In answering this question the concept of a *personal event schema* is developed. Results show that dimensions of the schema, such as the complexity, clarity, and affective intensity associated with the individual events predict reporting errors. This paper also explores how the analysis of these errors can inform questionnaire design in order to reduce reporting errors.

The data are from self-reports obtained during two different telephone interviews conducted in 1987 (Parent Survey 1) and 1989 (Parent Survey 2) with parallel samples of divorced Wisconsin parents. The analysis compares the court's records about child support with answers obtained in the telephone surveys. While child support is used as an example in this study, the intention is to produce a methodology that is generalizable to similar phenomena such as reports of income, AFDC receipt, sexual behaviors, and physicians' visits.

Survey Research and Response Effects for Events and Behaviors

In this paper we examine the extent to which structural features or characteristics of an event like exchanging child support predict errors in survey reports about the event.¹ We then explore how the analysis of these errors can inform questionnaire design in order to improve reporting. One of the most important sets of factors affecting errors in survey reports are characteristics of the instrument, particularly the comprehensibility of the individual questions and demands questions place on memory (Belson 1981; Blair and Burton 1987; Fowler 1992). With regard to memory errors, respondents are typically given the formidable task of not only remembering past events, but correctly locating them within a pre-specified reference period. While memory errors are often presented in terms of a simple decay function in which the rate of forgetting increases as a function of time (see discussion in Bradburn, Rips and Shevell 1987), recent efforts attempt to study memory effects more systematically. Specifically, researchers have been examining how the patterning of experiences in the lives of respondents leads to errors in comprehension and recall about those experiences.

Among the features of experience that researchers have examined are characteristics of the events themselves, such as their frequency, regularity, similarity, salience, complexity, clarity, and social reinforcement (Barclay 1986; Barclay and Wellman 1986; Mathiowetz and Duncan 1988; Menon 1994; Schaeffer 1994). For example, Mathiowetz and Duncan (1988) used company records to see how the patterning of these events affected the accuracy of self-reports over a two year period. In a comparison of survey reports with company records, the authors found that factors related to the patterning of the unemployment spells were better predictors of reporting errors than time between the

¹ Event-based data refer to measures for which it is theoretically possible to obtain external validating information (Bradburn 1981; Sudman and Bradburn 1974; see Schwarz 1990 for an alternative perspective).

event and the date of the interview, a measure of memory decay, or demographic characteristics of the respondent. Specifically, salience, measured by the amount of unemployment in a given month and employment patterns over three month intervals, and frequency, indicated by the total amount of unemployment for a given respondent, significantly predicted inaccuracy. Schaeffer (1994) demonstrated that structural features of receiving child support, including the complexity, salience, and clarity associated with individual payments predicted errors in annual reports of child support receipt. In contrast, variables assessing memory decay, social desirability, and several demographic characteristics of the respondent were unrelated to reporting accuracy. To some extent, however, empirical analyses like this have been developing without a clear theoretical framework. We argue that the literature on social cognition and information processing, particularly with regard to schema theory provides a useful context for synthesizing and extending this methodology.

Schemata and Other Types of Memory Models

Human memory is described as a space in which several types of divisions have been theorized and empirically studied. Cognitive or knowledge structures comprise an important category from the literature on social cognition and information processing. Knowledge structures mediate information processing (Bodenhausen and Wyer 1987; Neisser 1976). They have both a static role of organizing and storing information, and a dynamic role as filtering mechanisms (Mandler 1979; Taylor and Crocker 1981). While an assortment of knowledge structures have been identified, including prototypes (Cantor and Mischel 1977), scripts (Schank and Abelson 1977), and attitudes (Fazio et al. 1986), our focus is on schemata.

Schema Theory. While schemata share the general features of knowledge structures described above, there are unique features that distinguish them. First, schemata are formed or

developed from repeated exposure or experience with specific people, events, and objects (Fiske and Taylor 1991; Mandler 1979). Second, the information or episodes in a schema are connected and organized on the basis of temporal and causal relationships that are situationally dependent (see discussion in Markus and Zajonc 1985; Mandler 1979). This contrasts with other kinds of structures like prototypes, which are organized on the basis of typical examples of the category (Anderson 1980). Like a pyramid, the information contained in a particular schema is hierarchically organized such that there are small amounts of generalized knowledge about associations at the top and more generalized knowledge including specific examples at the bottom (Taylor and Crocker 1981). Third, schemata involve expectations based on the arrangement of information in memory of how things in the real world should look, be ordered and behave (Taylor and Crocker 1981). It is through these expectations that schemata guide information processing. Finally, appropriate schemata are hypothesized to be automatically activated whenever schema-relevant stimuli are in place and processing is guided by the schema (Abelson and Black 1986).

With regard to schema-based recall, early work pointed to the conclusion that material consistent with or relevant to a previously established schema was always better remembered than information that was incongruent (see Markus and Zajonc 1985 for a review of these studies). However, later studies did not confirm this generalization, finding either no effects for schema-correspondent material or opposite effects, such that incongruent information was better remembered. To synthesize these contradictory findings, Hastie (1981) argued that information that is extreme -- either very congruent or incongruent -- will be remembered most completely because it is more likely to be elaborated upon in memory. Far fewer studies have systematically examined the influence of schemata on retrieval accuracy, leading Markus and Zajonc (1985) to conclude “blatant schema-driven

distortion in recall remains to be demonstrated (pp. 157).” A caveat to this strong statement is that in studies of recognition there is substantial evidence that subjects are more likely to misreport remembering material if it is similar to their activated schema (e.g., Cantor and Mischel 1977; Hastie 1981). These high false alarm rates seem to be the result of subjects’ attempting to integrate the stimulus material with the schema.

It is important to note that in all of these studies it is assumed that the relevant schema is in use or activated during recall (Taylor and Crocker 1981). This assumption is justified in the highly controlled laboratory settings on which nearly all of the research findings are based, but is arguably not the case for schematic memory of everyday information. Therefore, one hypothesis is that by activating the relevant schema organized around some construct of interest, the accuracy with which information about that construct is retrieved should increase. For the survey researcher interested in improving reporting about everyday experiences, the goal is to design questions that evoke the appropriate schema (Kessler and Wethington 1991). The standardized sample survey containing retrospective questions about experiences is a useful setting in which findings from highly controlled laboratory research on convenience samples can be merged with real-world knowledge and processes (Bodenhausen and Wyer 1987; Loftus, Fienberg and Tanur 1985).

Linking Schemata to Other Memory Models. Another important division in human memory is between short-term and long-term memory. Schemata are located entirely within long-term memory, which theorists often partition into semantic and episodic memory (Tulving 1972, 1989). Semantic memory refers to generalized knowledge of the world, language, symbols, and associations, and is not encoded temporally but is stored and organized on the basis of meaning. It develops from learning, frequently from repeated exposure to stimulus material. By contrast, episodic memory involves the

relations among personally experienced, unique events that are coded with regard to a specific location in time and place. The unique properties of semantic and episodic memory systems have different implications for recall errors. In comparison to information retrieved from semantic memory, episodic retrieval is less likely to be instantaneous and more likely to suffer from interference and decay.

Another category of memory is autobiographical, the study of which is important because it begins to move laboratory insights gained from simple experimental paradigms, such as word recognition tasks, to more applied designs for experiential questions, such as “when did you last ... ?” (Rubin 1986, 1996; Schwarz and Sudman 1994). Like episodic memory, autobiographical memory is often referred to as the process of recalling information specifically about the individual or the individual’s experiences with stamps for time (which are not necessarily accurate) and location (Bradburn, Shevell and Rips 1987; Tulving 1972). However, not all theorists agree that autobiographical is a subset of episodic memory. Baddeley (1992) asserts that memories of autobiographical phenomena can be retrieved from both types of memory stores and to some extent all of an individual’s memories are autobiographical in that she obtained the information at some point in her life. The concept of autobiographical memory should be restricted to memories in which the self is the object of the experience.

In a recent review article Belli (1998) synthesizes current thinking about the structure of autobiographical memory in which personally experienced events are viewed as being hierarchically ordered. At the top and middle of the hierarchy are extended events -- significant periods of time identified by a theme such as “my first job” or “my marriage.” Extended events are fundamental organizational structures, arranged temporally and comprised of many smaller events. Summarized events form the second category of autobiographical memory. In contrast to extended events,

summarized events develop as the individual experiences the same event repeatedly and forms a generalized memory for the class of events while losing information about specific episodes (see also Linton 1982). The final type of autobiographical memory consists of remembrances of specific events as part of either extended or summarized events.

Of interest to the survey researcher developing questions to measure experience accurately is how to apply current thinking about memory to questionnaire design. Unfortunately, this is a difficult issue to address because researchers tend to work on memory-related issues using language and techniques that are particular to their discipline and problem. However, there appear to be unifying themes. First, regardless of their content or how they are labeled (“extended events,” “summarized events,” “schemata”), researchers agree that memories about oneself are organized by higher-order memory structures (see also Barclay 1986; Reiser, Black and Abelson 1985). Schemata closely resemble summarized events in that both are aggregated and abstracted structures built from similar autobiographical events that have occurred repeatedly over time. Although schemata are built up from many experiences, they are often described as agnostic with regard to exactly when any specific experiences occurred (Mandler 1979). Therefore, a distinguishing feature in some definitions of autobiographical memory -- the time tag -- is probably lost. The ability of respondents to temporally locate events is important because survey questions about events typically include time frames. Yet, given that the lower levels of a schema contain information about specific events, it is likely that in theory at least, questions could be written to activate the approximate location in memory where either details for specific events are stored or details about temporal information could be inferred. Second, emotions are critical components of autobiographical memory and have important implications for remembering (see Rubin 1996). In current discussions of schema theory affective dimensions are

typically provided only lip service (see discussion in Howard 1995). However, recent research on autobiographical memory and self-schemata demonstrate that memory is better for events that are intense, emotion-producing, and pleasant (Thompson, Skowronski, Larsen, and Betz 1996). In this paper it is argued that schematic memory models should be expanded to examine the effects of emotion or affect on remembering.

Finally, it is difficult to determine how the episodic-semantic dichotomy overlaps with the distinction between schematic and autobiographical memory. While a single autobiographical event may be encoded within the episodic store as a personal episode, as this event is merged with similar events, it is hypothesized by some to become schematic (integrated into a schema) and move to the semantic memory store. A number of researchers in the field of autobiographical memory have conducted longitudinal studies of autobiographical memory using themselves as subjects (see, for example, Linton 1975, 1979; Wagenaar 1986; White 1982). They overwhelmingly conclude that while events appear to be initially encoded episodically, as the number of similar episodes grows, the individual events are difficult to distinguish and semantic information about them increases. Whether or not the events or behaviors are coded episodically or semantically is potentially important because this may influence the types of strategies respondents use to retrieve information and the accuracy of their reports (Blair and Burton 1987; Menon 1994; Tulving 1983; Tversky and Kahneman 1973).

Synthesis: *The Personal Event Schema*

Given the evidence that (1) knowledge structures, particularly schemata, are actively involved with information processing and remembering and (2) activating a relevant schema increases an individual's ability to remember information related to the schema, the schema concept appears to be particularly useful for survey researchers in designing instruments. Improving the accuracy of self-

reports requires understanding the complex interrelationships among the structure of events in respondents' lives, respondents' memories of the patterning of these events, the reporting task, and resulting errors. However, this framework does not directly inform the researcher as to how to go about writing questions to measure specific constructs.

By linking the development of schemata with autobiographical memory, it is proposed that schema theory can be expanded to include information that is more autobiographical in nature and encompasses aspects related to time and affect. We locate this new schematic category, the *personal event schema*, between an event-schema and a self-schema. Many kinds of information asked for in survey interviews concern events or behaviors that occur repeatedly over time. It is predicted that they become "schematized" in that a generalized memory about them is formed (Barclay 1986). Examples of these events include employment spells, some kinds of consumer expenditures, doctor's visits, and receipt of certain kinds of monetary transfers. Each of these kinds of events is associated with certain sequences of behavior that are chronologically organized into sub-events with particular goals. These sub-events are then hierarchically organized into some kind of knowledge structure. If the same event category occurs repeatedly, it is hypothesized to become schematized into a *personal event schema*. Consider the example of physician's visits in which there are clearly defined actors (patient and doctor), a predetermined script (the doctor asks questions and the patient responds), rules for behavior (the patient does not examine the doctor), and a stage (the office). Over time and across repeated visits, the routinization of the behavior "going to the doctor" starts to feel scripted and details of a particular visit may be difficult to remember. However, unlike eating in a restaurant, a prototypical kind of event-schema, there are many dimensions to visiting the doctor that are social and emotional and make visiting the doctor a more personal event. Like the dimensions of a self-schema, these dimensions are related

to various self-concepts, such as being healthy or unhealthy. Because the individual events that comprise the *personal event schema* are autobiographical in that they are more likely to involve the self as both an agent and object of the experience than more mundane behaviors, it is hypothesized that they may also be more likely to be time coded (Thompson et al. 1996).

This paper examines errors in reports about child support payments and is a partial replication and extension of Schaeffer's (1994) investigation. From the perspective of schema theory child support is a useful construct because payments may be characterized by a series of similar events that occur with some frequency over time. Thus, the analysis can determine how characteristics of the individual events are associated with reporting errors when respondents are asked to summarize their experiences using an annual reporting period. We hypothesize that certain dimensions of the *personal event schema* will be related to response errors. These dimensions represent a distillation of information contained in the specific events that lead to the development of the schema and encompass the following dimensions: complexity, which refers to how frequent, regular, and similar the specific events are; clarity, which refers to how distinct the events are from like events; and intensity of affect about the events. Respondents should be less accurate when events are complex, indistinct from like events, and emotionally neutral. By priming the relevant schema, questions that cue one or more of these dimensions should be associated with more accurate reporting than other questioning strategies (Reiser 1986; Schwarz 1990; Sudman, Bradburn and Schwarz 1996). First, we demonstrate that these dimensions are associated with response errors. Second, by comparing two different approaches to obtaining self-reports of child support, we show that designing questions related to the dimensions of the personal event schema can reduce response errors.

DATA AND SAMPLE²

The analysis compares parents' survey reports about receiving and paying child support with court records that contain official ledgers of these transfers.

Validation Data: *The Court Record Database (CRD)*. In Wisconsin, guidelines for child support specify that the nonresident parent make scheduled, cash transfers to the resident parent (see Meyer et al. 1994). The law requires that either the nonresident parent's employer or the nonresident parent send payments to the Clerk of Courts where the amount of the payment is recorded and forwarded to the resident parent. The Court Record Database (CRD) is based on abstracts from court records in 20 Wisconsin counties which were selected to represent the distribution of economic and demographic characteristics of Wisconsin (see Garfinkel et al. 1988). The CRD provides records of all child support payments that were recorded by the Clerk of Courts. In addition, the CRD contains demographic information about the parents at the time of the petition, such as their age, income, and number of their children. Payments in the CRD are standardized on a monthly basis. Information in the CRD provides a valid measure of child support that is not contaminated by memory errors or potentially opposing interests of parents.

Survey Data: *The Parent Survey 2 (PS2)*. The Parent Survey 2 (PS2) is a survey interview about child support that uses the CRD as a sampling frame. Within counties, a cross-sectional sample of court records were drawn from cases with minor children that petitioned for divorce or paternity between 1986 and 1988. From April to October 1989 approximately 1,200 divorce cases (matched

² See Dykema (1996) for a detailed description of the study design and variables, some aspects of which were originally described by Schaeffer (1994).

mothers and fathers) were selected to be interviewed.³ Telephone interviews were conducted with at least one parent in 82 percent of the cases and both parents were interviewed for 45 percent of the cases, a level that compares favorably to other record check studies of child support (Braver and Bay 1992; Cantrell and Sprenkle 1989; Maccoby et al. 1988). Because interviewers determined that they had reached the correct respondent by verifying the name, court date, case type, county and number of children in the case, mismatches between the CRD and PS2 are probably rare. Except for the information needed to establish a match between the CRD and PS2, interviewers were not privy to other data from the court record.

Respondents in the PS2 were administered a series of questions related to the support of children, including questions about the court case, the support award, and child support transfers. The development of PS2 was guided by an earlier survey of child support conducted at the University of Wisconsin, the Parent Survey 1 (PS1). The PS1 implemented a series of questions based on the National Survey of Families and Households (Sweet, Bumpass and Call 1988). In the PS1 resident parents (mothers) were asked if they received all, some, or none of the child support payments owed in 1986. A value of zero dollars was imputed for respondents who said none. Among respondents reporting that all of the payments were made, the amount received was inferred from the amount owed; an annual total was obtained for those answering some. Based on an analysis of errors in reports of child support payments from PS1, Schaeffer (1994) suggested administering an intensive series of

³ During the field period attempts were made to interview parents who were no longer living in Wisconsin.

While approximately 470 paternity cases were also selected to be interviewed, this analysis focusses on divorced parents. Because divorce is a legal process the child support awards represented in the CRD are not likely to reflect a specialized selection process. In contrast, child support awards for nonmarital births are more likely to be initiated by mothers on welfare who must cooperate with a governmental agency to establish paternity. Because of this selection process, the analysis is restricted to divorced parents.

followup questions to respondents in the “some” category to facilitate recall of the amount they received. Implicit in this suggestion is that when questions are written to parallel the way events are patterned in real life, retrieval of information about the events will be more accurate (see also Means et al. 1994; Menon 1994).

Informed by the results of PS1, the PS2 used an innovative technique to assess the amount of support received and paid. Reports about the amount of financial transfers such as child support were gathered on a monthly basis. In the survey interview all respondents were asked to indicate the monthly amount of support they paid for months in 1988 in which they were not living with the other parent. These questions were asked of both noncustodial (mostly fathers) and custodial parents (mostly mothers). After reporting about the number of months they made child support payments (if any), all respondents were asked about receiving child support for months they did not live together *and* were not paying support. This approach is in marked contrast to most national data sources, which obtain annual amounts of child support with a single question (e.g., the Current Population Survey). Panel A in Figure 1 presents the main questions used to assess which months the parents lived apart in 1988; Panel B and Panel C show the exact wording of the questions about paying and receiving child support.

The Validation Comparison. The analysis compares the court’s records about child support from the CRD with answers obtained in the PS2, using the calendar year 1988 as the reference period. The CRD provides most of the payment characteristics used in the analysis with exceptions noted. Of the original 1,425 respondents, approximately six percent are not included in the analysis because they are missing data about the amount of support received and paid from either the PS2 or CRD or were ineligible for the survey. Cases in which data are missing are evenly split between mothers and fathers.

Studies that examine the level of match between survey reports and official records assume that the records are complete and the information has been measured without error. In practice this condition is difficult to achieve. For this reason information about monetary transfers that occur outside of the courts such as informal agreements and private agreements are obtained from the PS2 and included as controls in the models. These transfers are potentially significant sources of discrepancy between the CRD and PS2.

VARIABLES AND METHODS

Using information from the CRD, a variable indicating whether the respondent received, paid, or both received and paid child support is created. Because the PS2 is structured so that respondents are asked about paying and receiving support (see Panels B and C in Figure 1), these respondents are included in both the *Receiver* and *Payer* models.⁴ For an additional five percent of the respondents, the court records indicate that neither parent owed support and a payer had not been established by the time of the PS2. These cases are assigned to the *Receiver* category if the respondent is a mother or the *Payer* category for fathers. Of the 749 *Receivers* (i.e., respondents whose court record indicates that payments were received or were supposed to be received), approximately 93 percent are mothers; of the 615 *Payers* (i.e., respondents whose record indicates they made or were supposed to make payments), 94 percent are fathers.

Dependent Variable. In order for the PS2 and CRD to be comparable, child support is operationalized as the sum of monies received/paid for child or family support, and for *Payers* we also

⁴ While the CRD indicates that approximately one percent of the full sample of respondents both received and paid support, less than one percent of the respondents in the PS2 reported both receiving and paying support.

include any money the court forwarded to social services.⁵ The first two columns in Panel A of Table 1 summarize information about the direction of errors. (We postpone discussion of the last three columns until the Discussion section.) In the first row of Panel A approximately 20 percent of the respondents in the full sample report receiving and/or paying exactly the amount of money registered in the court record.⁶ *Receivers* are only slightly more accurate than *Payers*. However, representing accuracy exclusively in terms of an exact match between the survey report and court record is restrictive. By expanding this category to include respondents whose survey report was within \$100 of the amount recorded in the court record, nearly one-third of the sample are considered accurate. With regard to the direction of the remaining errors, there appears to be a tendency to underreport for *Receivers* (mostly mothers) and a tendency to overreport for *Payers* (mostly fathers). This pattern is consistent with other validation studies of child support (Schaeffer, Seltzer and Klawitter 1991; Sonenstein and Calhoun 1988).

⁵ Unless otherwise specified, child support refers to both child and family support. Family support differs from child support with regard to which parent is responsible for tax liability. Awards for family support in Wisconsin are rare.

If the custodial parent is on AFDC, the noncustodial parent owes the state, not the custodial parent child support. In these cases, the court will forward the noncustodial parent's child support payment to social services. For *Payers* money the court forwarded to social services is included in the value for the CRD, under the assumption that respondents in the PS2 included this money when reporting about the amount of child support they paid. However, social services is not included in the value of the CRD for *Receivers*. The reason for this is that custodial parents can only receive up to \$50 of their child support payment when they are on welfare. Given that respondents did not receive a separate set of questions about child support received through AFDC, it is unlikely that they included these monies when reporting about child support in the PS2.

⁶ Cases classified as having a value of zero for reporting error may not be homogeneous with regard to the difficulty of the reporting task and their underlying error structures. Given that the reporting task required respondents to provide the amount of support they received/paid each month, it is hypothesized that the reporting task is easier for some respondents than others. For cases in which no payments or only one payment is recorded in the CRD, respondents in the survey interview only have a single value to recall in order to report accurately. In contrast, when payments vary in amount or are made irregularly, the reporting task is more difficult and error is more likely to result. Of the 175 respondents in Table 1 who are classified as *Receivers* and have a zero value for reporting error, around 79 percent received either zero or one payment (one case); of the 124 *Payers* with no reporting error, 76 percent made either zero or one payment (one case). Therefore, approximately one-fifth of the respondents whose survey report matches the court record have a more complicated payment history in which estimation probably entailed more than simply retrieving a single number.

Several dependent variables were created and tested (results not shown; see Dykema 1996).

Here we report about the absolute value of the difference between the survey report and the court record; this measure indicates the size of the error, regardless of the direction:⁷

$$\text{Natural log [* PS2 - CRD * + k]}$$

The absolute values of the differences are positively skewed and approximately 20 percent of the cases have a value of zero. To correct for skewness, natural logs of the differences are used and a constant is added to each case before obtaining the natural log. A constant of 30 was chosen because it minimized the estimates of skewness and resulted in relatively normal distributions. The first two columns in Panel B of Table 1 present the mean and standard deviation for the dependent variable for *Receivers* and *Payers*. (We postpone discussion of the remaining columns until the Discussion section.)

Independent Variables. Table 2 describes the independent variables and shows their origins (CRD or PS2), their predicted effects on errors (see “Predicted Effect on Errors”), and their mean and standard deviations (S.D.). Unless otherwise specified, the variables refer to events in 1988.

Appendix A provides the exact wording of questions used to create variables from the PS2. Appendix B provides a description of the nature and extent of imputations.

Complexity. Complexity is the first dimension of the *personal event schema* and refers to how blended and intricate are the patterning of the events that go into forming the schema. This is

⁷ Combining over- and underreports assumes that the magnitude and direction of effect of each independent variable is equivalent. This was tested by estimating bivariate Tobit regression models in which each independent variable was entered as the sole variable in the model. Dependent variables were computed as the raw difference between the PS2 and CRD: values greater than or equal to zero were treated as overreports; values less than or equal to zero as underreports. Because the distributions of the resulting variables were skewed, a constant was added to each and the logs were analyzed. The absolute value of the difference for underreports was used because the log of a negative number is undefined. For each independent variable, we compared the direction (positive versus negative) of the effect and level of significance separately for over- and underreports. In none of the models was the coefficient for a particular independent variable positive and significant for overreports, but negative and significant for underreports (or vice-versa).

determined by the frequency, regularity, and similarity of the individual events and behaviors. While these dimensions are conceptually distinct, they may be correlated in practice. For example, within the confines of an annual reporting period, payments that are made every three months are regular, but not frequent. Correspondingly, how many similar payments are received is limited by the total number of payments received (frequency).

Frequency refers to the number of monthly payments made in 1988 according to the CRD and ranges in value from zero to twelve months. A linear relationship between reporting errors and payment frequency was not expected and the analysis distinguishes among three groups, using dichotomous variables: those who received or made payments zero to one month, two to three months, and four to twelve months in 1988. In the multivariate analyses respondents receiving/paying zero to one payment make up the reference group. Respondents who received or made one or fewer payments are grouped together because their reporting task is predicted to be the easiest. In contrast, the other categories represent mixed experiences and are predicted to be positively associated with error.

The regularity with which events and behaviors occur is described by many researchers as important in the development of schemata (e.g., Bartlett 1932; Markus 1977). Regularity is operationalized using two sets of categorical variables. For the first, referred to as the Monthly Payment Pattern, we consider variation in the occurrence and nonoccurrence of payments over the twelve-month reporting period by assigning a value of one to months in which a payment was made and zero to months in which no payments were made. Aggregating across 12 months, values of Monthly Payment Pattern range from "000000000000" to "111111111111." A case is characterized as regular if there are no changes in the payment pattern, that is, for each month in 1988 the case has twelve zeros or twelve ones. Monthly Payment Pattern is classified as semi-regular if there are one to

three changes in the payment pattern and irregular if the pattern changes four to ten times. It is predicted that in comparison to regular patterns of monthly payments, semi- or irregular patterns will be associated with greater reporting error (see Menon 1994).

The Payment Metric summarizes information about how payments were to be made, such as weekly or monthly, based on the court order and how the father was paid. Compared to respondents who did not have a regular metric, whose metric changed, or who had a weekly or biweekly metric during all of 1988, we hypothesize that respondents with a monthly or semi-monthly metric will have larger errors. This is predicted because the month-by-month questioning strategy in the PS2 should be a better retrieval cue for respondents who received support on a monthly or semi-monthly basis and/or because respondents with weekly or biweekly schedules could estimate their monthly values by multiplying the amount of their weekly payment by four, yielding a total of 48 weeks, not 52 weeks for the year.

Similarity refers to how much the amount of the support payment varies from month to month. Similarity is theoretically related to accurate recall in that the more similar the events or behaviors, the more difficult it is to recall a specific episode, especially if it deviates only slightly from the schema (Barclay 1986). Changes in the amount paid should increase the difficulty of the reporting task as it is unlikely that respondents encode or would be able to retrieve many different monthly amounts. The main indicator of similarity is the number of times the monthly amount of support recorded in the CRD changed between adjacent months.

This variable assumes values from zero (which represents no changes in the monthly amounts and includes cases in which all payments were zero) to eleven (the amount changed in every month in 1988). In addition to the number of changes in the amount paid, a dummy variable is tested that

indicates whether all payments are greater than zero and a multiple of some constant. This variable should be related to reduced error because given that the payments are a function of some constant, there are no incongruencies that could potentially interfere with the development of the schema or recalling information from the schema.

Clarity. Clarity is the second dimension of the *personal event schema* and refers to how dissimilar child support payments are from other kinds of support transfers or exchanges. In a small proportion of cases the court will award both child support and alimony. While alimony is meant as support for the former spouse, it might also be thought of as benefitting the children because it is another familial resource. In the PS2 respondents are asked about other financial obligations such as who provided health insurance, whether money for the resident parent's mortgage or rent was paid or received, and whether any other financial contributions were paid or received.⁸ Additional transfers are predicted to be associated with greater error because they interfere with respondents' abilities to disentangle one financial source from another, or they may intentionally include money from these transfers in their reports of child support. Where inaccuracy occurs, overreporting is expected.

Payments to social services and retroactive support are also included as part of the clarity dimension. When the parent who has custody of the children is on welfare, the state, not the parent is owed child support. In these cases the court forwards the child support check to the social services agency which sends up to the first \$50 to the mother. A categorical variable for payments to social services is included in the analysis. A retroactive order refers to a court order in which the resident

⁸ To some extent it is problematic to use respondents' reports about health insurance, mortgage payments and other financial contributions because errors associated with incorrectly reporting about child support may be correlated with errors in reports about these other transfers. The CRD does not include information about these variables.

parent is ordered to pay child support starting back to some date in the past, for example, when the child was born and may be paid as a lump sum or as part of the regular child support payment. The presence of each of these is predicted to increase errors in the survey reports as compared to the court records.

A final set variables for clarity includes direct payments. Although payments are supposed to be made through the courts, some parents exchange child support directly. These payments are predicted to be reported with more error because they lack the institutional reinforcement that reporting to the court provides. Regardless of whether direct payments are associated with more or less accuracy in theory, there are practical issues concerning the differentiation between reporting errors versus differences between the amount recorded in the PS2 and CRD. Unlike the other factors considered to this point, forms of direct exchange potentially affect the inclusiveness of the CRD because many of these exchanges will not be recorded in the CRD (see Schaeffer et al. 1991 for a fuller discussion).

Affective Intensity. Variables are included that assess what impact affect has on the accuracy of reports of child support, the third dimension of the *personal event schema*. In his original description of a schema, Bartlett (1932) described the importance of affect on remembering (see also Allport 1954). Other studies of memory have demonstrated that better reporting accuracy is associated with affective cues: Events that are evaluatively intense, produce emotion, and are positively valenced are recalled better than events that lack these characteristics (Thompson et al. 1996). Respondents who received or paid support were asked about their overall satisfaction with the amount of support they reported. (This question was only asked of respondents who report receiving or paying some support.) Two dummy variables indicate both valence and affective intensity, whether the

respondent is very dissatisfied or very satisfied with the amount of support exchanged. The reference category includes respondents who report being satisfied or dissatisfied and those who did not pay or receive support. In comparison to mild evaluations about the amount of support exchanged, intense and positive evaluations should be associated with smaller errors.

Memory Decay and Respondent Characteristics. We also include indicators for other factors that have been shown to affect reporting errors. Memory decay is operationalized as the number of days between the end of the reference period (December 31, 1988) and the date of the interview. A dummy variable for whether the respondent is male is expected to be associated with error, especially for the models in which errors in reports about paying support are examined (Schaeffer et al. 1991). Some survey findings suggest older and less educated respondents may be less accurate (e.g, Borus 1966; Cannell et al. 1965) and variables for age and education are incorporated. We include total household income (logged) as a characteristic of the respondent. Given the relationship between income and education, income is expected to be negatively associated with error in reports about child support. However, income may be positively related to error in that respondents who are inaccurate about receiving or paying child support may be inaccurate when reporting about finances more generally. An indicator for the number of children in the original court order is also included. As the number of children increases, the calculation of the award may become more complex and this may interact with payments and lead to increased errors in reporting. A dummy variable from the CRD is incorporated that signifies whether or not the mother has sole physical custody of the court ordered children for more than one-half of 1988. Cases in which the mother is the custodial parent are anticipated to be associated with smaller errors in reporting about child support.

Social Desirability. Indicators designed to measure the impact of social desirability are included because evidence indicates that reports about child support may be subject to social desirability factors, especially for nonresident fathers (Schaeffer et al. 1991). Gender of the interviewer and withholding of child support from the *Payer's* income check due to missed payments are used. The most likely effect of the interviewer's gender would be to inflate *Payers'* (mostly fathers) reports of paying child support when reporting to a female interviewer.⁹ Fathers with withholding due to delinquency may be more likely to overreport the amount of child support paid; mothers who wish to protect a father who has not paid support may also overreport the amount received.

Respondent Motivation. The remaining four indicators measure aspects of the respondent's motivation. First, there is some uncertainty regarding what effect a prior refusal to be interviewed could have on errors (see Couper 1997). On the one hand respondents who refuse to be interviewed, but then are converted, may be less motivated to expend the effort to report accurately; on the other hand, they may feel that because they finally decided to participate, they should take the task seriously. Second, respondents who are unwilling or unable to report about aspects of their household income may be less motivated to accurately report about child support. Third, in order for both parents to be interviewed, it is often the case that one parent supply tracking information such as the other parent's phone number; cooperative respondents may have smaller errors because they take the reporting task more seriously. Fourth, length of the PS2 interview is anticipated to be positively related to reporting errors, with longer interviews possibly causing respondents to grow fatigued or bored, or perhaps reflecting more complicated experiences or interviewer incompetence.

⁹ Interviews were not randomly allocated to interviews, but assignment of respondents to interviews was arbitrary. Since the number of interviewers was smaller than the number of respondents, the significance levels for the effect of interviewer's gender reported in the regression models are inflated because the degrees of freedom in the tables are based on the number of respondents, not the number of interviewers.

RESULTS

Following from the theoretical framework on schemata and autobiographical memory and the empirical analyses by survey researchers, it was hypothesized that the events and behaviors surrounding the receipt and payment of child support payments become schematized over time and a generalized memory develops around them. The concept of a *personal event schema*, characterized by the complexity, clarity, and affective valence of the individual events was advanced. These characteristics were argued to be important in determining whether or not the schema surrounding receipt of child support is activated and used in answering the questions. It was predicted that when events are complex, are similar to other events, and lack emotional markers, respondents are more likely to report inaccurately. Thus, an attempt is made to demonstrate that these are important dimensions of the schema.

Table 3 presents coefficients from one-limit Tobit regressions for *Receivers* and *Payers*.¹⁰ The Tobit model is characterized by a continuous dependent variable with an explicit lower value for which a considerable proportion of the population assumes the limiting value (Maddala 1984). Approximately 23 percent of the *Receivers* and 20 percent of the *Payers* are censored at the lower bound that represents no reporting error. The dependent variable is expressed as the natural log of the absolute errors and the antilog of the coefficient is provided in the column labeled “e^b”. The antilog expresses the ratio of the predicted value after the independent variable’s effect has been applied to the value before the variable’s effect, with both terms in the original metric. For example, under the column “e^b” in the row labeled “2-3 Payments,” we find that in comparison to *Receivers* who received “0-1”

¹⁰ Each model includes controls for imputations and whether the respondent both received and paid support in 1988 or had an informal or private payment agreement.

payment, receiving “2-3” payments increases the size of the absolute error, in the original metric for the untruncated population, approximately 5 times.

Complexity. Results suggest that variables associated with complexity have important relationships with reporting errors. In both the *Receiver* and *Payer* models the errors made by respondents who receive or make payments frequently are significantly larger than those who receive or make one or fewer payments.

With regard to regularity, the effects of the Monthly Payment Pattern are less consistent for *Receivers* and *Payers* than are the effects for frequency. Semi-regularity is associated with significantly larger reporting errors for *Payers* but not *Receivers*. While irregularity has no effect on the size of the reporting error for *Payers*, it has the unanticipated effect of being associated with significantly smaller errors for *Receivers*. These effects may be the result of irregularity interacting with frequency or similarity in a way that is not captured in the model. In contrast to *Receivers* for whom the court record indicates payments were ordered to be made monthly, *Receivers* who experienced changes in their payment metric have significantly larger errors. However, there is not a parallel effect of changes in the metric on reporting error for *Payers*, perhaps because changes in payment schedules are often associated with a salient event such as a job change for *Payers*. Control of or predictability over events may interact with the schema by increasing or decreasing the ease with which incongruent information is incorporated. As predicted, *Receivers* and *Payers* with weekly or biweekly payment patterns have significantly larger errors than respondents with monthly or semi-monthly payment schedules. The month-by-month question strategy appears to be a good cue for these respondents. To some degree this probably is also a consequence of the monthly strategy encouraging respondents who received payments weekly or biweekly to omit up to a month of payments.

Examining the indicators for similarity, the number of times the amount of the monthly payment in the CRD changed is positively related to reporting error for *Receivers* and *Payers*. Finally, whether payments are a multiple of a constant is not significantly associated with reporting errors, although its effect is in the predicted direction of being associated with smaller reporting error. The lack of significance for this variable is surprising and at odds with predictions derived from schema theory. A possible explanation is that while all the payments were for the same amount, some of them may have been made on an irregular basis.

Clarity. We find moderate support that additional transfers are confused with child support and lead to increased errors. For both *Receivers* and *Payers* the presence of alimony payments, providing health insurance, and other financial contributions are associated with larger errors as predicted, but mortgage payments are not. While we find that payments to social services are associated with larger reporting errors for *Receivers*, this effect may be due in part to the manner in which the dependent variable was constructed; money the court forwarded to social services was included in the dependent variable for *Payers*, but not *Receivers* (who could receive only up to \$50 of this support). If *Receivers* include money forwarded to social services, they should overreport the amount of support they received compared to the CRD. In a separate analysis (results not shown) we find that *Receivers* with a zero value for payments to social services tend to underreport the amount they received when compared with the CRD, but *Receivers* who received one or more payments from social services tend to overreport. In contrast to *Payers*, *Receivers* with retroactive orders also have larger errors. Finally, *Receivers* who collected child support directly and *Payers* who report paying the other parent directly have significantly larger errors compared to the CRD than parents without these agreements.

Affective Intensity. *Payers* who are very dissatisfied with the amount they paid have larger errors than other *Payers*. In contrast, being very satisfied is associated with more reporting error among *Receivers*, but the effect is only of borderline significance. Contrary to predictions, these results suggest that strong, negative emotions may lead to decreased accuracy for fathers (*Payers*). One explanation of this finding is that intense feelings at the time of encoding may improve encoding but intense evaluations at the time of reconstruction may introduce distortions.

Memory Decay and Demographic Characteristics. We find no net association between memory decay and reporting error suggesting that the patterning of experience is more important in reporting accurately than the passage of time. We also find little evidence that less educated and older respondents are less accurate, with the exception that age is positively associated with errors among *Receivers*. Gender is significantly associated with reporting error for *Receivers* such that male *Receivers* have larger errors than females; a reversed (but not significant) pattern is shown for males among *Payers*. Thus, respondents with unconventional situations, such as fathers who receive support and mothers who pay support report with greater error. This finding suggests that the accuracy or inaccuracy of males may be related to situational factors that interact with gender, such as the topic of the question. Income appears to have opposite effects for *Receivers* and *Payers*. Finally, reporting error increases along with the number of children for *Payers* and in cases where the mother had sole physical custody for the year for both *Payers* and *Receivers*.

Social Desirability and Respondent Motivation. Indicators for social desirability and respondent motivation have little net effect on reporting errors with the exception that, contrary to predictions, errors are larger for cases in which both parents were interviewed among *Receivers*.

DISCUSSION

Improving Questionnaire Design: Comparing Retrieval Cues. Characteristics of events, such as their complexity, clarity, and affect, are important predictors of errors in reports about child support. Thus, using cues related to one or more of these dimensions should decrease response errors. We explore this by comparing the results of the PS2 with the first Parent Survey, the PS1.

As described, PS1 also obtained self-reports about support over the telephone using a different, but parallel, sample of divorced Wisconsin parents. Records from the CRD provide the criterion used to estimate reporting errors for each survey. In PS1 respondents were asked whether all, some, or none of the payments owed in 1986 were received. The PS2 obtained reports about child support on a month-by-month basis for 1988. This strategy is hypothesized to serve as a memory cue in activating the relevant schema surrounding child support, particularly with regard to the complexity dimension of the *personal event schema*. First, the monthly question-asking strategy in the PS2 taps into the frequency subdimension by encouraging respondents to remember the total number of payments they received or made. Second, with regard to regularity, the technique is predicted to assist respondents in considering the monthly patterning of the payments they received or paid in 1988, that is, whether payments were made or not in each month. Finally, in the PS2 respondents were cued into the similarity subdimension by being asked to remember the “amount of each (monthly) payment.”

The results for the PS1 are reported in Schaeffer (1994) for divorced custodial mothers only and in comparing the PS2 to the PS1, the PS2 sample is restricted to custodial mothers. Descriptive statistics from the two surveys for custodial mothers are provided in Table 1. Examining the column “Divorced Custodial Mothers” in Panel A, it appears that more respondents in the PS2 were inaccurate than in the PS1, as a smaller proportion of the cases are in the “Proportion -100 to

100" (.27 versus .33). However, comparing "Divorced Custodial Mothers" in Panel B, we find that mothers in the PS2 have smaller mean absolute reporting errors (\$1,063 versus \$1,278).

When the PS2 was designed it was believed that almost all cases made payments on a monthly basis. In fact, only one-third of the divorced, custodial mothers in the PS2 received support on a monthly basis in 1988. Examining only mothers who received support on a monthly basis in 1988 ("Divorced Custodial Mothers with Monthly a Metric"), we find the proportion in "-100 to 100" is larger for this group than for mothers in the PS1. Further, these mothers have a mean absolute error that is approximately one-third smaller than that of mothers in the PS1. These results are suggestive and warrant further investigation including a more complete comparison between the PS1 and PS2 that includes fathers and mothers without physical custody.

Conclusions and Future Research. The analysis demonstrates that characteristics of the events themselves, particularly dimensions that could affect the formation of the *personal event schema* are, on the whole, important predictors of the size and significance of reporting errors. Examining the individual components of the schema, the model garners strong support for the hypothesis that the complexity of respondents' experiences with exchanging child support payments has a substantial impact on their accuracy. Indicators for frequency and similarity are positively related to errors in reports about child support and for the most part, these relationships are significant. As predicted, respondents who received or made payments on a monthly basis have significantly larger errors than respondents with weekly/biweekly. In contrast, the effects of the monthly payment pattern, the main indicator of regularity, are mixed. While respondents with semi-regular payment patterns have significantly larger errors among *Payers*, irregularity is significantly associated with smaller absolute

errors for *Receivers*. An important extension of this model would be to combine the indicators for frequency, regularity, and similarity in a meaningful way.

With regard to clarity, a number of other transfers that respondents engage in appear to be confused or are included with child support. Exchanging alimony, other financial contributions, direct payments and providing health insurance are associated with significantly larger errors for both *Receivers* and *Payers*. Among *Receivers*, respondents receiving AFDC have significantly larger errors than respondents not receiving additional monies.

Recent research on schemata, affect, and reporting accuracy suggests events that are emotion-producing, evaluatively intense, and positively valenced are better recalled than events that lack these characteristics (Thompson et al. 1996). The final dimension of the *personal event schema*, affective intensity, also appears to play an important role in reporting accurately about child support payments, particularly among *Payers*. *Payers* who report being very dissatisfied with the amount of child support they made have significantly larger errors than those reporting milder affect. Among *Receivers* the effect is of borderline significance for being very satisfied. These findings are at odds with Thompson et al. (1996) who conclude that subjects in their diary studies are more accurate in their reports about evaluatively intense events than less intense events.

Designing instruments that take the patterning of events into account as was done with the monthly question-asking strategy in the PS2, appears to substantially reduce errors in reports about child support transfers. Further, concentrating on the various dimensions of the *personal event schema* provides the questionnaire designer with a strategy for writing questions to obtain more accurate reports. For example, questions about child support in the PS2 primarily exploited the complexity dimension of the *personal event schema*, in particular the frequency and regularity

subdimensions. Questions written to specifically address the similarity dimension (e.g., “Were all of the payments you received/paid for the same amount or were some for different amounts” and “What were the amounts of those payments”) are predicted to improve reporting. Clarity could be incorporated by explicitly instructing respondents to exclude other financial transfers such as alimony or health insurance or by placing questions about other transfers before questions about child support to establish a contrast between related concepts. Finally, while affect is an important factor in the development of the schema and in recalling information about the schema, it is not clear how to use it to improve reporting. As suggested by Thompson et al. (1996) the importance of assessing affect in the survey interview might lie in using the information to gauge the quality of survey reports.

There are several important issues that this study does not address. Among these is what is the relationship between the schema and the individual episodes out of which it develops? We speculate that there are at least three models that describe the way in which the individual events or episodes could be related to the memory structure. First, respondents may store just a composite or distilled memory that contains very little information about the individual episodes or behaviors. This is likened to a moving average that is somehow revised when the individual encounters a discrepancy that does not mesh with the activated structure. Second, the respondent could theoretically retain information about all of the individual events and an aggregated memory that provides summary information about the episodes. This second model depicts memory as a storehouse in which all stored information is accessible, only the effort may be too great. Schema theory is the third model and probably falls somewhere between the first and second descriptions. Schemata are hierarchical structures that include generalized memories and specific events and examples. In order to answer the question of how the individual events are related to the structure we must better understand how schemata develop. In

answering this question a better understanding is needed of how the components of the *personal event schema* are related to the development of the schema. Finally, a related issue that this study does not explore is whether all respondents in the study have a schema about child support.

To conclude, although this analysis used child support to illustrate that the structural features or characteristics of events predict errors in reports about those events, our intention was to outline a methodology that is exportable to other phenomena. In particular, the dimensions encompassed by the *personal event schema* could be applied to other events and behaviors that are of interest to researchers such as earnings and physician's visits. Like child support, these topics require respondents to recall a summary of past experiences that are likely to be schematized.

References

- Abelson, Robert P. and John B. Black. 1986. "Introduction." Pp. 1-20 in *Knowledge Structures*, edited by J.A. Galambos, R.P. Abelson and J.B. Black. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Allport, Gordon W. 1979 [1954]. *The Nature of Prejudice*. New York: Addison-Wesley.
- Anderson, John R. 1980. *Cognitive Psychology and Its Implications*. San Francisco, CA: Freeman.
- Baddeley, Allen. 1992. "What is Autobiographical Memory?" Pp. 13-29 in *Theoretical Perspectives on Autobiographical Memory*, edited by D.C. Rubin, H. Spinnler and W.A. Wagenaar. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Barclay, Craig R. 1986. "Schematization of Autobiographical Memory." Pp. 82-99 in *Autobiographical Memory*, edited by D.C. Rubin. Cambridge, NY: Cambridge University Press.
- Barclay, Craig R. and H.M. Wellman. 1986. "Accuracies and Inaccuracies in Autobiographical Memories." *Journal of Memory and Language* 25:93-103.
- Bartlett, Fredrick C. 1932. *Remembering: A Study in Experimental and Social Psychology*. Cambridge, England: Cambridge University Press.
- Belli, Robert F. 1998. "The Structure of Autobiographical Memory and the Event History Calendar: Potential Improvements in the Quality of Retrospective Reports in Surveys." *Memory* 6:383-406.
- Belson, William A. 1981. *The Design and Understanding of Survey Questions*. Hants, England: Gower Publishing Co. Ltd.
- Blair, Edward and Scot Burton. 1987. "Cognitive Processes Used by Survey Respondents to Answer Behavioral Frequency Questions." *Journal of Consumer Research* 14:280-288.
- Bodenhause, Glen V. and Robert S. Wyer. 1987. "Social Cognition and Social Reality: Information Acquisition and Use in the Laboratory and the Real World." Pp. 6-41 in *Social Information Processing and Survey Methodology*, edited by H.J. Hippler, N. Schwarz and S. Sudman. New York, NY: Springer-Verlag.
- Borus, Michael E. 1966. "Response Error in Survey Reports of Earnings Information." *Journal of the American Statistical Association*. 61:729-738.
- Bradburn, Norman M. 1981. "Response Effects." Pp. 289-328 in *Handbook of Survey Research*, edited by P.H. Rossi, J.D. Wright and A.B. Anderson. New York, NY: Academic Press.
- Bradburn, Norman M., Lance J. Rips and Steven K. Shevell. 1987. "Answering Autobiographical Questions: The Impact of Memory and Inference on Surveys." *Science* 236:157-161.

- Bradburn, Norman R., Steven K. Shevell, and Lance J. Rips. 1987. "Autobiographical Memory and Survey Research." *Proceedings of the American Statistical Association Social Statistics Section* 72-81.
- Braver, Sanford L. and R. Curtis Bay. 1992. "Assessing and Compensating for Self-Selection Bias (Nonrepresentativeness) of the Family Research Sample." *Journal of Marriage and the Family* 54:925-939.
- Cannell, Charles F., G. Fisher and Thomas Bakker. 1965. "Reporting of Hospitalization in the Health Interview Survey." *Vital and Health Statistics, Series 2* 6:i-71.
- Cantor, Nancy and Walter Mischel. 1977. "Traits as Prototypes: Effects on Recognition Memory." *Journal of Personality and Social Psychology* 35:38-49.
- Cantrell, Rosyl G. and Douglas H. Sprenkle. 1989. "Increasing Response Rates in Court Record Divorce Studies." *Journal of Divorce* 13:113-121.
- Couper, Mick P. 1997. "Survey Introductions and Data Quality." *Public Opinion Quarterly* 61:317-338.
- Dykema, Jennifer. 1996. "Events, Instruments and Reporting Errors: Combining Knowledge from Multiple Perspectives." Unpublished Master's Thesis, University of Wisconsin, Madison.
- Fazio, Russell H., David M. Sanbonmatsu, Martha C. Powell, and Frank R. Kardes. 1986. "On the Automatic Activation of Attitudes." *Journal of Personality and Social Psychology* 50:229-238.
- Fiske, Susan T. and Shelley E. Taylor. 1991. *Social Cognition*, 2nd ed. New York: McGraw-Hill.
- Fowler, Floyd J. 1992. "How Unclear Terms Affect Survey Data." *Public Opinion Quarterly* 56:218-231.
- Garfinkel, Irwin, Thomas Corbett, Maurice MacDonald, Sara McLanahan, Philip K. Robbins, Nora C. Schaeffer, and Judith A. Seltzer. 1988. "Evaluation Design for the Wisconsin Child Support Assurance Demonstration." Institute for Research on Poverty, University of Wisconsin-Madison.
- Hastie, Reid. 1981. "Schematic Principles in Human Memory." Pp. 39-88 in *Social Cognition The Ontario Symposium*, Vol 1., edited by E.T. Higgins, C.P. Herman and M.P. Zanna. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Howard, Judith A. 1995. "Social Cognition." Pp. 90-117 in *Sociological Perspectives on Social Psychology*, edited by K.S. Cook, G.A. Fine and J.S. House. Needham Heights, MA: Allyn and Bacon.
- Kessler, Ronald C. and Elaine Wethington. 1991. "The Reliability of Life Event Reports in a Community Survey." *Psychological Medicine* 21:723-738.

- Linton, Marigold. 1975. "Memory for Real-World Events." Pp. 376-404 in *Explorations in Cognition*, edited by D.A. Norman and D.E. Rumelhart. San Francisco, CA: Freeman.
- Linton, Marigold. 1979. "Real-World Memory after Six Years: An in Vivo Study of Very Long Term Memory." Pp. 69-76 in *Practical Aspects of Memory*, edited by M.M. Gruneberg, P.E. Morris and R.N. Sykes. London, England: Academic Press.
- Linton, Marigold. 1982. "Transformations of Memory in Everyday Life." Pp. 77-91 in *Memory Observed: Remembering in Natural Contexts*, edited by U. Neisser. San Francisco: Freeman.
- Loftus, Elizabeth F., Steven E. Fienberg and Judith M. Tanur. 1985. "Cognitive Psychology Meets the National Survey." *American Psychologist* 40:175-180.
- Maccoby, Eleanor R., Charlene E. Depner and Robert H. Mnookin. 1988. "Custody of Children Following Divorce." Pp. 91-114 in *Impact of Divorce, Single Parenting, and Stepparenting on Children*, edited by E.M. Hetherington and J.D. Arasteh. Hillsdale, NJ: Lawrence Erlbaum.
- Maddala, G.S. 1984. *Limited-Dependent and Qualitative Variables in Econometrics*. Cambridge, NY: Cambridge University Press.
- Mandler, Jean M. 1979. "Categorical and Schematic Organization in Memory." Pp. 259-299 in *Memory Organization and Structure*, edited by C.R. Puff. New York, NY: Academic Press.
- Markus, Hazel. 1977. "Self-schemata and Processing Information about the Self." *Journal of Personality and Social Psychology* 35:63-78.
- Markus, Hazel and Robert B. Zajonc. 1985. "The Cognitive Perspective in Social Psychology." Pp. 137-230 in *The Handbook of Social Psychology*, 3rd ed, edited by G. Lindzey and E. Aronson. New York, NY: Random House.
- Mathiowetz, Nancy A. and Greg J. Duncan. 1988. "Out of Work, Out of Mind: Response Errors in Retrospective Reports of Unemployment." *Journal of Business and Economic Statistics* 6:221-229.
- Means, Barbara, Gary E. Swan, Jared B. Jobe, and James L. Esposito. 1994. "The Effects of Estimation Strategies on the Accuracy of Respondents' Reports of Cigarette Smoking." Pp. 107-119 in *Autobiographical Memory and the Validity of Retrospective Reports*, edited by N. Schwarz and S. Sudman. New York, NY: Springer-Verlag.
- Menon, Geeta. 1994. "Judgments of Behavioral Frequencies: Memory Search and Retrieval Strategies." Pp. 161-172 in *Autobiographical Memory and the Validity of Retrospective Reports*, edited by N. Schwarz and S. Sudman. New York, NY: Springer-Verlag.

- Meyer, Daniel R., Irwin Garfinkel, Judi Bartfeld, and Pat Brown. 1994. "An Evolving Child Support System." *Focus* 16:1-14.
- Neisser, Ulric. 1976. *Cognition and Reality: Principles and Implications of Cognitive Psychology*. San Francisco, CA: Freeman.
- Reiser, Brian J. 1986. "The Encoding and Retrieval of Memories of Real-World Experiences." Pp. 71-99 in *Knowledge Structures*, edited by J.A. Galambos, R.P. Abelson and J.B. Black. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Reiser, Brian J., John B. Black, and Robert P. Abelson. 1985. "Knowledge Structures in the Organization and Retrieval of Autobiographical Memories." *Cognitive Psychology* 17:89-137.
- Rubin, David C. 1986. "Introduction." Pp. 3-19 in *Autobiographical Memory*, edited by D.C. Rubin. Cambridge, NY: Cambridge University Press.
- Rubin, David C. (Ed). 1996. *Remembering Our Past: Studies in Autobiographical Memory*. New York, NY: Cambridge University Press.
- Schaeffer, Nora Cate. 1994. "Errors of Experience: Response Errors in Reports about Child Support and their Implications for Questionnaire Design." Pp. 141-160 in *Autobiographical Memory and the Validity of Retrospective Reports*, edited by N. Schwarz and S. Sudman. New York: Springer.
- Schaeffer, Nora Cate, Judith A. Seltzer and Marie Klawitter. 1991. "Estimating Nonresponse and Response Bias: Resident and Nonresident Parents' Reports About Child Support." *Sociological Methods and Research* 20:30-59.
- Schank, Roger C. and Robert P. Abelson. 1977. *Scripts, Plans, Goals, and Understanding*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Schwarz, Norbert. 1990. "Contributions of Cognitive Psychology to Questionnaire Construction." Pp. 98-119 in *Research Methods in Personality and Social Psychology*, Vol 11., edited by C. Hendrick and M.S. Clark. Newbury Park: Sage.
- Schwarz, Norbert and Seymour Sudman. 1994. *Autobiographical Memory and the Validity of Retrospective Reports*. New York, NY: Springer-Verlag.
- Sonenstein, Freya L. and Charles A. Calhoun. 1988. "Survey of Absent Parents: Pilot Results." Washington, D.C.: The Urban Institute.
- Sudman, Seymour and Norman M. Bradburn. 1974. *Response Effects in Surveys*. Chicago, IL: Aldine Publishing Company.

- Sudman, Seymour, Norman M. Bradburn, and Norbert Schwarz. 1996. *Thinking about Answers: The Application of Cognitive Processes to Survey Methodology*. San Francisco, CA: Jossey-Bass.
- Sweet, James A., Larry L. Bumpass and Vaughn Call. 1988. "The Design and Content of the National Survey of Families and Households." NSFH Working Paper 1, National Survey of Families and Households, University of Wisconsin, Madison.
- Taylor, Shelley E. and Jennifer Crocker. 1981. "Schematic Bases of Social Information Processing." Pp. 89-134 in *Social Cognition The Ontario Symposium*, Vol 1., edited by E.T. Higgins, C.P. Herman and M.P. Zanna. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Thompson, Charles P. 1982. "Memory for Unique Personal Events: The Roommate Study." *Memory and Cognition* 10:324-332.
- Thompson, Charles P., John J. Skowronski, Steen F. Larsen, and Andrew L. Betz. 1996. *Autobiographical Memory: Remembering What and Remembering When*. Mahwah, New Jersey: Lawrence Erlbaum Associates Inc.
- Tulving, Endel. 1972. "Episodic and Semantic Memory." Pp. 382-403 in *Organization of Memory*, edited by E. Tulving and W. Donaldson. New York, NY: Academic Press.
- Tulving, Endel. 1983. *Elements of Episodic Memory*. New York: Oxford University Press.
- Tulving, Endel. 1989. "Remembering and knowing the past." *American Scientist* 77:361-367.
- Tversky, Amos and Daniel Kahneman. 1973. "Availability: A Heuristic for Judging Frequency and Probability." *Cognitive Psychology* 5:207-232.
- Wagenaar, Willem A. 1986. "My Memory: A Study of Autobiographical Memory over Six Years." *Cognitive Psychology* 18:225-252.
- White, R.T. 1982. "Memory for Personal Events." *Human Learning* 1:171-183.

Appendix A

Parent Survey 2: Additional Question Wordings

Health Insurance

All: Who provided health insurance for the child(ren) in 1988, you, their (mother/father), or both of you? (PROMPT: In most of 1988.)

Mortgage or Rent

Payers: In (1988/the month(s) in 1988 that you did not live with the other parent) did you make any mortgage or rent payments for the other parent? (*Yes; No*)

Receivers: In (NAME EACH MONTH NOT ACCOUNTED FOR) did (he/she) make any mortgage or rent payments for you? (*Yes; No*)

Other Financial Contributions

Payers: In (1988/the months you did not live with the other parent), did you make any other financial contributions to the child(ren)'s other parent to help support the child(ren) or did you pay for things like the child(ren)'s uninsured medical expenses, school expenses, child care, or clothing? (*Yes; No*)

Receivers: In (1988/the months you did not live with the other parent) did the child(ren)'s other parent make any other financial contributions to you to help support the child(ren) or did they pay for things like the child(ren)'s uninsured medical expenses, school expenses, child care, or clothing? (*Yes; No*)

Direct Payment

Payers: Please tell me how you made each of these payments. In (MONTH OF EACH PAYMENT), was the child support payment: deducted from your paycheck?; did you pay it directly to the other parent?; to the Clerk of Courts?; or was it paid to someone else?

Receivers: Please tell me from whom you received each of these payments. In (EACH MONTH REPORTED PAYMENT), did the payment come: directly from the other parent?; from the Clerk of Courts?; from the AFDC agency?; or from someone else?

Overall Satisfaction with Support

Payers: Overall, how satisfied are you with the amount of the child support you actually paid? Are you: very dissatisfied, dissatisfied, satisfied, or very satisfied.

Receivers: Overall, how satisfied are you with the amount of child support you actually received? Are you: very dissatisfied, dissatisfied, satisfied, or very satisfied.

Appendix B Imputations

Values are imputed for some of the independent variables used in the analysis. The table below contains a list of the independent variables for which values are imputed, the nature of the imputation, and the number of cases affected by the imputation.

Description of the Nature and Magnitude of Imputations

Variable	Description of Imputation	Number of Cases Affected	
		Receivers	Payers
Health Insurance	A case is missing for this variable due to an interviewer's error. It is assigned a value of 0.	0	1 ^a
Mortgage or Rent	Cases are missing for this variable due to interviewers' errors. These cases are assigned a value of 0. (Some respondents were not asked about making or having mortgage/rent payments made for them because they lived with the other parent for all of 1988 and were skipped out of the section. In addition, these questions were structured so that respondents who reported making mortgage/rent payments were not asked about receiving mortgage/rent payments. These respondents are assigned a value of 0.)	5	2
Other Financial Contributions	Cases are missing for this variable due to interviewers' errors and as a result of "don't know" responses. These cases are assigned a value of 0. (The questionnaire is structured so that some respondents were intentionally not asked these questions. These cases are assigned a value of 0.)	3	10
Overall Satisfaction	Cases are missing for this variable mainly due to interviewers' errors. However, a few cases are missing because of "don't know" responses or refusals. Only respondents who reported receiving or paying support were asked about their overall satisfaction with the amount of support they received or paid. Respondents who were skipped pass these questions are included in the reference category.	16 182	16 138
Age	Cases are missing for this variable due to interviewers' errors and as a result of "don't know" responses. Female respondents are assigned the median value for the full sample of women, 32 years; Male respondents are assigned the median value for the full sample of men, 35 years.	1 ^a	3

(Table is continued on the next page.)

Variable	Description of Imputation	Number of Cases Affected	
		Receivers	Payers
Education	Cases are missing for this variable due to interviewers' errors or from refusals. Female respondents are assigned the modal value for the full sample of women, high school education or GED; Male respondents are assigned the modal value for the full sample of men, high school education or GED.	1 ^a	1 ^a
Household Income	A number of cases are missing data for one or more of the questions that assess total household income. Data are missing primarily due to "don't know" responses and refusals, but some data are missing due to interviewers' errors. Female respondents are assigned the mean value for the full sample of women, \$20,383; Male respondents are assigned the median value for the full sample of men, \$32,032.	188 ^b	173 ^b
Number of Children	Cases are missing information on the number of children included in the original court order. The modal value of 2 children is imputed for these cases.	3	2
Interviewer's Gender	Cases are missing the gender of the interviewer from the PS2. The modal value of female interviewer is imputed for these cases.	3	0
Duration of Interview	Two kinds of imputations are calculated for this variable. First, cases are missing information about the time the interview began and ended. Second, cases have extreme values. Interviews that are less than two minutes ($n=4$) or greater than three hours ($n=2$) are considered outliers. All cases are assigned the median value of 50 minutes, if they meet either of these conditions. The median value is based on the entire sample excluding these cases.	40	20

^a Variable for the imputation was dropped from the final model because too few cases were affected by the imputation.

^b Variable for the imputation was dropped from the final model due to multicollinearity.

Table 1. Descriptive Statistics for Errors in Reports about Child Support Received and Paid: Parent Survey 2 (full and select samples) and Parent Survey 1

Panel A: Direction of Errors

	Parent Survey 2				Parent Survey 1
	All <i>Receivers</i>	All <i>Payers</i>	Divorced Custodial Mothers	Divorced Custodial Mothers with a Monthly Metric	Divorced Custodial Mothers
Error Equal to \$0	0.23	0.20	---	---	---
Less than -\$100	0.39	0.31	0.41	0.35	0.32
From -\$100 to \$100	0.33	0.31	0.27	0.39	0.33
Greater than \$100	0.29	0.38	0.32	0.26	0.35

Panel B: Descriptive Statistics for Measures of Response Errors

	Parent Survey 2 Natural log[*PS2-CRD* +30]		Parent Survey 2 *PS2-CRD*		Parent Survey 1 *PS2-CRD*		
	All <i>Receivers</i>	All <i>Payers</i>	All <i>Receivers</i>	All <i>Payers</i>	Divorced Custodial Mothers	Divorced Custodial Mothers with a Monthly Metric	Divorced Custodial Mothers
Mean	5.67	5.82	975	1,102	1,063	865	1,278
Standard deviation	1.67	1.68	2,260	2,433	2,370	1,593	2,813
N	749	615	749	615	616	196	842

Table 2: Summary Information and Descriptive Statistics for the Independent Variables

Variable ^a	Description	Predicted Effect on Errors	Receivers	Payers
			Mean (SD)	Mean (SD)
COMPLEXITY				
Frequency				
Number of Payments (CRD)				
[0-1 Payments]	[Support recorded 0-1 months]	---	---	---
2-3 Payments	1=Support recorded 2-3 months	+	0.05 (0.22)	0.03 (0.16)
4-12 Payments	1=Support recorded 4-12 months	++	0.66 (0.47)	0.77 (0.42)
Regularity				
Monthly Payment Pattern (CRD)				
[Regular]	[No changes in the payment pattern]	---	---	---
Semi-regular	1=1-3 changes in the payment pattern	+	0.34 (0.47)	0.33 (0.47)
Irregular	1=4-10 changes in the payment pattern	+	0.07 (0.25)	0.09 (0.28)
Payment Metric (CRD)				
No Metric Available	1=No metric available	+	0.07 (0.26)	0.05 (0.22)
Metric Changed	1=Value of metric changed	+	0.25 (0.44)	0.27 (0.44)
Weekly/Biweekly Metric	1=Weekly/biweekly metric	++	0.35 (0.48)	0.34 (0.47)
[Monthly/Semi-Monthly Metric]	[Semi- or monthly metric]	---	---	---
Similarity				
Change in Amount Paid (CRD)	1-11=Number of changes in amount paid	+	4.74 (3.90)	5.47 (3.86)
Multiple of Constant (CRD)	1=All payments > \$0 and multiple of a constant	-	0.08 (0.27)	0.09 (0.28)
CLARITY				
Some Alimony Paid (CRD)	1=Alimony paid at least one month	+	0.07 (0.25)	0.09 (0.28)
Health Insurance (PS2)	1=Receivers report other parent or both parents/Payers report they or both parents provided health insurance	+	0.49 (0.50)	0.71 (0.45)
Mortgage or Rent (PS2)	1=R reports receiving/paying money for mortgage or rent	+	0.03 (0.17)	0.09 (0.29)
Other Contributions (PS2)	1=R reports receiving/making some additional financial contributions	+	0.23 (0.42)	0.61 (0.49)
Social Services (CRD)				
[0 Payments]	[0 payments forwarded to social services]	---	---	---
1-6 Payments	1=Payments forwarded to social services 1-6 months	+	0.11 (0.31)	0.09 (0.29)
7-12 Payments	1=Payments forwarded to social services 7-12 months	++	0.07 (0.25)	0.09 (0.29)
Retroactive Order (CRD)	1=A retroactive order was in effect before the PS2	+	0.20 (0.40)	0.22 (0.41)
Direct Payment (PS2)	1=Respondent reports some support received/paid directly	+	0.05 (0.22)	0.05 (0.22)

^a The omitted category is shown in brackets.

(Table 2 is continued on next page.)

Table 2: Summary Information and Descriptive Statistics for the Independent Variables**AFFECTIVE INTENSITY**Overall Satisfaction with Support
Received/Paid (PS2)

[Satisfied/Dissatisfied]

[Respondent reports being satisfied or
dissatisfied or question not asked]

Very Dissatisfied

1=R is very dissatisfied overall

-

0.15 (0.35)

0.18 (0.38)

Very Satisfied

1=R is very satisfied overall

-

0.08 (0.28)

0.03 (0.17)

MEMORY DECAYDays from End of Reference
Period to Interview (PS2)Number of days from end of reference
period to PS2 date

+

156.26 (45.13)

160.03 (46.99)

RESPONDENT CHARACTERISTICS

Gender (PS2)

1=Respondent is male

+

0.07 (0.26)

0.94 (0.24)

Age (PS2)

Age in years

+

33.25 (6.49)

35.75 (6.95)

Education (PS2)

[Less than High School]

[Less than high school education]

High School

1=High school education

-

0.39 (0.49)

0.39 (0.49)

More than High School

1=More than high school education

-

0.53 (0.50)

0.53 (0.50)

Income (PS2)

Logged annual household income

-

9.79 (0.85)

10.25 (0.71)

Number of Children (CRD)

Number of children in the original court
order

+

1.91 (0.86)

1.93 (0.87)

Physical Custody (CRD)

1=Mother had primary sole physical
custody

-

0.83 (0.38)

0.79 (0.41)

SOCIAL DESIRABILITY

Gender of interviewer (PS2)

1=Female interviewer

+

0.83 (0.37)

0.87 (0.34)

Withholding Due to Delinquency
(CRD)1=Withholding due to delinquency was in
effect in the life of the case

+

0.05 (0.23)

0.05 (0.22)

RESPONDENT MOTIVATION

Ever Refused (PS2)

1=Respondent refused before interviewed

+

0.20 (0.40)

0.07 (0.26)

Income not Reported (PS2)

1=Respondent did not answer selected
income questions

+

0.25 (0.43)

0.28 (0.45)

Both Parents Interviewed (PS2)

1=Both parents interviewed

-

0.62 (0.49)

0.76 (0.43)

Duration of Interview (PS2)

1=Case is in upper quartile of interviewing
times

+

0.29 (0.45)

0.25 (0.43)

Note: Data are from the Wisconsin Parent Survey 2. *Receivers* are 749 divorced parents who received or were supposed to receive child support according to the court records; *Payers* are 615 divorced parents who paid or were supposed to pay child support according to the court records.

Table 3. Multivariate Tobit Regression Models for Errors in Reports about Child Support Received and Paid on Characteristics of the Event (Complexity, Clarity, and Affect) and Other Factors Related to Exchanging Child Support among Divorced Parents

Independent Variables	RECEIVERS		PAYERS	
	<i>b</i> (<i>se</i>)	<i>e^b</i>	<i>b</i> (<i>se</i>)	<i>e^b</i>
Complexity				
Number of Payments [0-1 Payments]				
2-3 Payments	1.598** (.334)	4.943	1.266** (.473)	3.547
4-12 Payments	1.759** (.265)	5.807	0.765** (.293)	2.149
Monthly Payment Pattern [Regular]				
Semi-regular	0.250 (.159)	1.284	0.863** (.166)	2.370
Irregular	-0.699** (.261)	0.497	0.399 (.254)	1.490
Metric [Monthly/Semi-Monthly]				
No Metric Available	0.205 (.295)	1.228	-0.441 (.357)	0.643
Metric Changed	0.499** (.167)	1.647	-0.215 (.177)	0.807
Weekly/Biweekly	0.401** (.153)	1.493	0.392* (.163)	1.480
Number of Changes in Amount Paid	0.102** (.026)	1.107	0.116** (.026)	1.123
Multiple of Constant [vs. Not]	-0.232 (.241)	0.793	-0.324 (.249)	0.723
Clarity				
Some Alimony Paid [vs. None]	0.519* (.247)	1.680	0.641** (.237)	1.898
Health Insurance by Payer/Both [vs. Receiver/Neither]	0.318* (.135)	1.374	0.385* (.158)	1.470
Mortgage/Rent [vs. Not]	0.300 (.375)	1.350	-0.150 (.232)	0.861
Other Contributions [vs. Not]	0.317* (.145)	1.373	0.304* (.148)	1.355
Social Services [0 Payments]				
1-6 Payments	0.486* (.212)	1.626	-0.039 (.238)	0.962
7-12 Payments	2.292** (.260)	9.895	0.251 (.240)	1.285
Retroactive Order [vs. Not]	0.251+ (.152)	1.285	0.177 (.159)	1.194
Direct Payment [vs. None]	1.623** (.272)	5.068	2.389** (.306)	10.903
Affective Intensity				
Satisfaction [Satisfied/Dissatisfied]				
Very Dissatisfied	0.007 (.175)	1.007	0.615** (.170)	1.850
Very Satisfied	0.362+ (.220)	1.436	0.536 (.379)	1.709
Memory Decay	0.000 (.001)	1.000	0.001 (.001)	1.001
Respondent Characteristics				
Male Respondent [vs. Female]	0.803* (.323)	2.232	-0.429 (.340)	0.651
Age at Interview	0.027** (.010)	1.027	0.005 (.010)	1.005
Education [Less than High School]				
High School	-0.119 (.240)	0.888	0.084 (.254)	1.088
More than High School	-0.153 (.238)	0.858	-0.169 (.251)	0.845
Income [Logged]	-0.162* (.076)	0.850	0.261* (.101)	1.298
Number of Children	0.091 (.073)	1.095	0.266** (.077)	1.305
Mother had Physical Custody [vs. Not]	1.208** (.240)	3.347	1.184** (.229)	3.267
Social Desirability				
Female Interviewer [vs. Male]	-0.147 (.164)	0.863	-0.024 (.198)	0.976
Delinquency Withholding [vs. Not]	0.390 (.269)	1.477	0.359 (.301)	1.432
Respondent Motivation				
Ever Refused [vs. Not]	-0.075 (.173)	0.928	-0.375 (.257)	0.687
Some Income not Reported [vs. All]	-0.077 (.145)	0.926	-0.066 (.149)	0.936
Both Parents Interviewed [vs. One]	0.305* (.147)	1.357	-0.026 (.162)	0.974
Interview Length Top Quartile [vs. Bottom 3]	0.010 (.139)	1.010	-0.082 (.156)	0.921
Log Likelihood	-1179.326		-984.177	
Degrees of Freedom	43		43	
N	749		615	

+ p # .10; * p # .05; ** p # .01

Note: Models control for informal and private agreements, whether the parent both received and paid support, and missing data.

Figure 1. Exact Wording of the Child Support Questions from the PS2

Panel A: Questions assessing which months in 1988 the couple lived together

- M13.** Sometimes people live together before marriage or are separated during marriage. Altogether, how many different times did you and (CHILD/the children)'s (father/mother) live together, including times when you were married and times when you were not? (*Number of Times*)
- M14.** In what month and year did you start living together (the NUMBER time)? (Interviewer is instructed to begin with the earliest spell and enter each spell in a marital history grid.)
- M15.** In what month and year did you stop living together (that time)?
- L3.** From what you told me before, you and the child(ren)'s (mother/father) lived apart during all of (1988/NAME MONTHS PARENTS LIVED APART IN 1988). Is that correct? (*Yes; No*)
- L4.** In which months in 1988 did you live apart for the entire month?
-

Panel B: Questions about paying support

The following questions are asked for months in which the couple lived apart.

- S37.** In (1988/the months in 1988 you did not live with the other parent) did you pay any child support? (*Yes; No*)
- S38.** BEGIN WITH JAN. 1988 OR FIRST MONTH PARENTS LIVED APART AND RECORD EACH MONTH THAT R MADE PAYMENTS.
- In which months, beginning with (JAN. 1988/FIRST MONTH), did you make child support payments?
- S39.** Please tell me the amount of each payment.
-

Panel C: Questions about receiving support

The following questions are asked for months in which the couple lived apart AND the respondent did not report paying child support.

- S45.** In (NAME EACH MONTH NOT ACCOUNTED FOR) did you receive any child support payments? (*Yes; No*)
- S46.** ASK FOR EACH MONTH NOT ACCOUNTED FOR. BEGIN WITH JAN. 1988 OR FIRST MONTH NOT ACCOUNTED FOR. RECORD EACH MONTH THAT R RECEIVED PAYMENTS.
- In which months did you receive child support payments?
- S47.** Please tell me the amount of each payment.
-

Center for Demography and Ecology
University of Wisconsin
1180 Observatory Drive Rm. 4412
Madison, WI 53706-1393
U.S.A.
608/262-2182
FAX 608/262-8400
comments to: dykema@ssc.wisc.edu
requests to: cdepubs@ssc.wisc.edu