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The Quality of Proxy Reports on the Consumer Expenditure Survey¹

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How much do people living in the same household really know about the kinds of purchases other household members make? Although household surveys frequently ask questions about each member in the household, it is a daunting and expensive task to obtain all of this information firsthand from each person. Therefore, many household surveys accept proxy reports from one person for all household members. In a review of the literature on proxy reporting, Moore (1988) found little evidence that self-reports were inherently superior to data provided by a proxy. Rather than being a ringing endorsement of proxy reporting, Moore's review articulated the methodological weaknesses of much of the relevant literature on proxy reports, and the paucity of reliable information by which to accurately assess the quality of self and proxy reports. Specifically, Moore (1988) noted that in most proxy studies the respondent was self-selected rather than being selected by the investigator.

More recently researchers have taken greater care to control the assignment of self and proxy reporting and have been approaching the study of self and proxy differences from theoretical perspectives drawn from cognitive and social psychology to provide a framework for understanding the differences in self and proxy reports. Furthermore, several well-controlled experimental studies have been conducted to examine processes underlying differences in self and proxy reports. For example, Schwarz and Wellens (1994) draw on social psychological

¹ The opinions expressed in this paper are those of the authors and do not necessarily reflect the opinions or policies of the Bureau of Labor Statistics. The authors wish to thank Oak Ridge National Laboratory for their programming of the instrument and the Institute of Social Research at the University of Tennessee for data collection.

theory and research on actor-observer differences to derive a set of hypotheses for differences in self and proxy reports. In a series of experimental studies they provide evidence that proxy reporters rely on general dispositional information when making judgments about another person. Specifically, Schwarz and Wellens found that proxy reports were more internally consistent and less variable than self-reports, and that proxy reports showed greater convergence between usual behavior and behavior during a specified period than self-reports. They also found that self and proxy reports converged most for distant events, less so for usual events, and the least for recent, specific events, unless the recent events involved joint participation.

Seymour Sudman and his colleagues (Menon, Bickart, Sudman & Blair, 1995; Sudman, Bickart, Blair, & Menon, 1994) have also conducted a program of research studies aimed at understanding the cognitive processes that underlie self and proxy reports and explaining the convergence and divergence of self and proxy reports. In a series of studies, Sudman et al. (1994) demonstrated that higher participation in the purchase and more discussion about it were reliably related to the convergence of self and proxy reports. In a recent set of studies (Menon et al., 1995), they also showed that self reporters relied more on counting strategies than proxy reporters in answering behavioral frequency questions; however, proxy reporters who engaged in more participation or discussion showed greater use of counting strategies. For attitudinal questions, proxy reporters tended to use general information about the target person (e.g., he regularly purchases a cup of coffee each morning) more than the self did, but the use of general information by proxy reporters decreased as a function of the amount of participation or discussion that occurred between the self and proxy. Thus, Sudman and his colleagues have nicely demonstrated that the more participation and discussion that occurs between the self and

proxy, the more the response strategies used by each is similar, and the greater the convergence of their reports.

Our Research Perspective

Research on proxy reporting at the Bureau of Labor Statistics (BLS) has been founded on concerns about data quality in our survey programs (e.g., Kojetin & Mullin, 1995). This applied focus has brought to our attention concerns that often have been neglected in the experimental literature. We believe insufficient theoretical and empirical attention has been given to the real life situations in which proxy reporters are operating. The underlying context and perhaps even the motivation for a proxy to acquire knowledge about another person is the relationship that exists between the two people. In most cases, people living in the same household have some kind of relationship with each other, and often these relationships are the closest ones that the person has. There may be considerable variability in these relationships, but in general, the more time household members spend together and the older their relationship, the closer they are (see Berscheid, Snyder, & Omoto, 1989) and the more knowledge they are likely to have about one another. Therefore, one would expect that the quality of information that one proxy is able to provide for another household member would be a function of the relationship he or she has with the target person.

In addition to the context in which proxy reporting occurs, it is also important to examine who proxy reporters are. Researchers have frequently utilized only married couples or only college roommates in studies of self and proxy reporting, which neglects many of the potential respondents and household members covered in national sample surveys. Because any household member who is at least 16 years of age may serve as a respondent in the Consumer Expenditure (CE) Interview and Diary surveys, we are concerned about the proxy reports of

parents for children, which occurs frequently, as well as for other relatives and non-relatives living in the household. All of these potential proxy reporters are likely to have very different relationships, interactions, communication, and knowledge about other household members than spouses do. In general, one might well expect that spouses would be the most knowledgeable about each other's purchases, and that other household members would fall short of that to varying degrees.

Finally, because we are primarily concerned with the quality of proxy reports in specific, ongoing national household surveys, we are clearly concerned with the actual values of their responses. Other researchers have been interested in how proxy reporters provide a variety of information such as attitudes, frequencies of behavior, etc., and they typically report correlations between self and proxy reports. When respondents to BLS surveys are asked about specific purchases that were made and the cost of those items, the actual values are important to our statistical programs. Thus, we are not simply concerned with correlations between self and proxy reports, but with absolute differences as well. For example, a proxy may frequently underreport the number of expenditures made by the target person. For us, self and proxy reports that consistently differ are problematic regardless of the correlation between the reports².

The Present Study

The first purpose of the present study was to examine the agreement between self and proxy reports involving several kinds of expenditures. We utilized questions similar to those from the CE surveys, sponsored by BLS with data collection by the Bureau of the Census. The

² Generally, social scientists do not attach meaning to the particular values of Likert-type scales which are often used to measure attitudes or frequency of behavior, e.g., scales that range from agree-disagree, or never-often with 4 or 5 or more alternatives, and, therefore, do not look for absolute differences.

CE surveys provide important data used to weight items in the calculation of the Consumer Price Index

(CPI), the monthly measure of inflation in the United States. Our second goal was to identify factors that would be systematically related to the accuracy and completeness of these proxy reports and that could subsequently help to select better proxy respondents.

In the current study, we have examined the ways in which the proxy is likely to learn about the purchases of the target person. One would expect, and the research mentioned earlier has shown, that some ways of learning about another's behavior, such as participation and discussion, should lead to greater convergence between self and proxy reports than other ways of learning, such as hearing about the purchase from others. In addition to these modes of communication, we explored other means in which household members may learn about each others' activities. We anticipated that proxy reporters would also know about another household member's purchases by seeing or noticing the items that were purchased, seeing a bill or receipt for the items, or hearing about the purchase from another household member. A proxy may also know about a purchase that was made by the target person because the purchase was made for the proxy. For example, if a parent buys his or her child an article of clothing, the child is expected to be very knowledgeable about that item. Finally, because household members know each other so well, they may be aware of each other's regular habits involving purchases. For example, one spouse knows the other always eats lunch out on Fridays even though he or she is not there and may not talk about that specific occurrence.

We also expected the relationship between the self and proxy to be an important factor in the ability to report accurately about the target person's purchases. The type of relationship between the self and proxy, i.e., spouse, parent-child, roommate, etc., reflects many different

characteristics about the kinds of interactions that these people have (Kojetin, Burnbauer, & Mullin, 1995) and, therefore, the kind of knowledge they may be expected to have about each other's purchases. To gain a further understanding of what relational factors might be important predictors of self-proxy agreement, we also included measures of the closeness of the relationship between the self and proxy. In addition, although household members acquire a great deal of knowledge about each other in many domains, some specialization may occur within relationships such that certain household members may know more than others regarding some specific domains. For example, one household member may take more responsibility for paying the household bills, and this person is likely to place greater importance and have greater knowledge of the expenditures of other household members that are relevant to that task. We also included a measure intended to assess the proxy's knowledge of and participation in the finances of the target person.

Method

Overview of Design

All eligible members from ninety-seven households completed a computerized self-administered questionnaire that included questions similar to those asked in the CE surveys. Household members completed interviews independently and simultaneously on individual personal computers, reporting information for themselves and every other eligible member of their household. Only household members who were at least 16 years old, who would have been acceptable as a respondent for the CE, participated in the study. Each proxy reporter was asked how he or she typically learned about another household member's expenditures, and they were asked about their recent interaction with and knowledge of that person's purchasing.

Subjects

Data collection was done by the Social Science Research Institute at the University of Tennessee³. Initially, they conducted a random digit dialing telephone survey of 400 Knox county residents. Questions were asked to determine the size of the household and the willingness of members to participate in the study as well as demographic questions concerning the educational levels, race of the household members, and total household income. A sample of households was drawn from this initial survey according to a pre-specified plan for selecting households of different sizes and characteristics that sought to balance the number of two, three, and four person households (i.e., households with 2, 3, or 4 persons over 16 years of age) as well as the income levels. Because there were insufficient numbers of three and four person households from the RDD survey, extensive efforts were made by the researchers at the University of Tennessee to recruit families with the desired characteristics through a variety of community-based efforts. The final composition of the sample is shown in Appendix A. Data from three households were lost completely due to software or hardware problems. Although attempts were made to obtain a sample that reflected the diversity and characteristics of Knox County, Tennessee, this sample is not statistically representative.

The Consumer Expenditure Surveys

In the present study respondents reported expenditures they made during the past *week* for groceries and food away from home, and purchases during the past *month* for clothing and household furnishings. More specifically, participants reported the total number of trips they made to the grocery store during the past week and the total cost of all those grocery purchases.

³ The computerized instrument was programmed by Oak Ridge National Laboratory.

For purchases of food away from home, clothing, and household furnishings, respondents listed the particular item(s) that were purchased, where they were purchased, and the cost of the item.

Matching Self and Proxy Reports for Expenditures

The two authors compared the self and proxy reports for each individual item reported and independently coded whether the proxy report matched the self-report. Most of the items were coded by only one judge, however, both judges independently coded a random subset of the items. The agreement for the items coded by both judges was 88.5% and the inter-judge reliability using Cohen's Kappa for the proxy reports was .70. All discrepancies were resolved through discussion.

Measures of Communication or Transmission Mode

The source of information was measured by asking proxy reporters how they learned about the purchases of another household member. For each expenditure category, proxy reporters were presented with a list of possible ways they typically learned about the target person's purchases, and they were to select as many of them as applied. The possibilities included: participation with the target, conversation with the target, first hand observations, hearing from others, reading information, general knowledge of the target person's regular purchases, and having the target person make the purchase for them.

Measures of Relationships

In this study we included modified measures that were designed to measure important dimensions of interpersonal relationships (Berscheid et al., 1989). Household members estimated the amount of time they spent with each other during the past week, and indicated whether they engaged in a variety of different activities with each other during that time (e.g.,

housework, preparing a meal together, going for a walk). We also collected information about the type of relationship, for example, spouse, parent-child, and child-parent, etc.

Measure of Involvement in Finances

To estimate how involved household members were in each other's finances, we created a scale that listed six aspects related to personal finances, such as I help balance his/her bank accounts, I give him/her money, I deposit his/her checks, etc. The number of items the proxy reporters checked were summed to create an overall measure how financially involved they were with the target person.

Creation of Indices of Proxy Completeness and Accuracy

For these reports of expenditures, self and proxy agreement can be measured at several levels of detail. At the most superficial level, we can ascertain if there was agreement on whether any items within a certain category, such as clothing, were purchased during the reference period. If a self- or proxy- reporter believes that any items fitting this category were purchased during the reference period, then she or he is asked follow-up questions to ascertain the specific items that were purchased, what they cost, and where they were purchased. Thus, if there is agreement at the category level, then we can determine whether there was agreement in terms of the specific number of items from a category that were purchased and their total cost. Finally, we can determine whether specific items were mentioned by both self and proxy reporters. Agreement at more specific levels is necessarily contingent upon agreement at a higher level. In other words, if there is disagreement between self and proxy reports at the category level (e.g., the proxy believes that there were no clothing items purchased, but the self-reporter lists several items), none of the specific items mentioned by the self will have been listed by the proxy.

Because no external validation information was available for any of these reports, summary measures of the quality of proxy reporting were calculated by using self-reports as the standard. Measures of the accuracy (hits as a percentage of hits and false alarms) and completeness (hits as a percentage of hits and misses) of reporting were computed at the category level and the item level. *Accuracy can be described as the percentage of all purchases reported by the proxy that were actually reported by the self, whereas completeness is the percentage of all purchases reported by the self that were also reported by the proxy* (see Loftus, Smith, Klinger, and Fiedler, 1992).

Results

Overview of Data Analyses

In the first section, the completeness and accuracy of proxy reports are examined. The next section includes an analysis of the relation among proxy accuracy and completeness and the proxy's mode of learning about the target person's purchase. In the third section, the effect of the proxy's relationship and financial involvement with the target person on proxy completeness and accuracy of reporting is examined. Finally, multivariate models predicting proxy accuracy and completeness from communication and relationship factors are constructed.

Completeness and Accuracy of Proxy Reporting

Category Level. As can be seen in Table 1, *completeness and accuracy of household furnishings (36.5% completeness and 55.4% accuracy) was considerably lower than the same measures for groceries, food away from home, and clothing (ranging from 56.3% to 69.4% for completeness and 83.6% to 89.4% for accuracy).* In order to determine a measure of completeness and accuracy across all categories, we created an *overall index* for both completeness and accuracy. We did this by combining the "hits" across the four categories and

dividing by the total number of reported categories in which a purchase was made by the self (for completeness) or the total number of categories for which the proxy reported a purchase was made (for accuracy). As can be seen in the first column of Table 1, overall proxy completeness was 60.9% and overall accuracy was 83.0%.

Number of Items Purchased and Total Cost. Although matching of specific items provides more specific information about the accuracy and completeness of proxy reports, one can also assess self-proxy agreement by comparing the total number of items purchased and their total cost as reported by the self and proxy reporters without requiring any of the specific items to match. A comparison was made of the self and proxy reports only when both agreed that a purchase within the category was made during the reference period. As can be seen in Table 1, for groceries, food away from home, and clothing, there were significant positive correlations between self and proxy reports for the number of items purchased (or the number of trips to the grocery store) and their cost; however, there were also significant differences between their reports. Self reporters listed significantly more items purchased and said they spent significantly more money on those purchases than proxy reporters. The total column in Table 1, which averages the results across the four expenditure categories, shows that on average proxy reporters list about half the number of items that self-reporters do and estimate the cost to be roughly two-thirds that of the self-reports. Overall, self and proxy reports for number of items purchased and their cost were significantly positively correlated, but the magnitude of these relations was small.

Item Level Matching. The average levels of proxy accuracy of reporting individual items ranged from 23.9% to 68.33% and the completeness of proxy reports ranged from 14.4% to 50.4% across the four categories as can be seen in Table 1. Averaging across the four categories

the overall levels of proxy completeness and accuracy were 60.9% and 83.0%, respectively⁴. For further statistical analyses, total indices for completeness and accuracy of proxy reporting were created by calculating a z-score for each category of expenditures and then averaging across the four categories⁵.

Effect of Communication Mode on Self-Proxy Agreement

We examined seven sources of information for the proxy to learn about the target person's expenditures to see if they had an effect on proxy accuracy and completeness. These sources were: 1) participating in the purchasing episode with the target; 2) having a conversation about the purchase with the target; 3) noticing the target's purchases; 4) hearing about them from others; 5) reading about the purchase; 6) general knowledge of the target; and 7) having the target person make the purchase for you. In order to examine the effect of various communication modes on proxy accuracy and completeness, we correlated the different modes of communication with measures of accuracy and completeness at the category and item level across all categories (see Table 2).

As can be seen in Table 2, accuracy is only significantly related to "participation" at the item level, and "conversation" at the category level. Completeness however, correlates significantly with all of the communication modes except "hearing from others" at both the category and item levels. At the category level, "conversation" was most highly related to completeness ($r=.30, p<.01$), while "noticing" and "participation" fell closely behind ($r's=.28$

⁴ Self and proxy reporters who both indicated that a purchase did NOT occur in a category did not have a completeness or accuracy rate for that category. The overall average includes only proxies who had completeness and accuracy scores for at least two of the four categories.

⁵ Z-scores were created for each category and then averaged to reflect a more equal weighting of the relative difficulty of obtaining completeness and accuracy in each category.

and .22, p 's<.01 respectively). Similarly, “noticing” and “participation” were most highly related to proxy completeness at the item level (r 's=.29 and .27, p 's<.01, respectively).

Effect of Relationship Characteristics on Self-Proxy Agreement

We further examined whether proxy accuracy and completeness differed depending on the type of relationship and the amount of interaction between the self and proxy. At the category level, spouses reporting for each other showed higher levels of overall proxy completeness and accuracy than other proxy reporters having different relationships to the target person (see Table 3). Parents reporting for children, and children reporting for parents also showed fairly high levels of proxy completeness and accuracy at the category level. At the item level, none of the relationship types showed high levels of accuracy or completeness.

In addition to relationship types, we also collected information on other relationship characteristics. As can be seen in Table 4, the total number of activities household members did with one another and the extent to which they were financially involved with one another were both significantly related to proxy completeness at the category (r 's=.22 and .15, p 's<.01, respectively) and item (r 's=.24 and .17, p 's<.01, respectively) levels. The amount of time household members spent together in the last weekend was also related to proxy completeness, but only at the item level (r =.103, p <.05). There was a significant relationship between accuracy and the total number of activities the household members did together at the item level (r =.119, p <.05), but this was the only significant correlation between proxy accuracy and relationship characteristics.

Multiple Regression Analyses Predicting Proxy Completeness and Accuracy

To examine the effects of communication modes and relationship characteristics together on proxy completeness and accuracy, we conducted a series of multiple regression analyses

entering all communication modes and all relationship characteristics into the model. As can be seen in Table 5, communication modes and relationship characteristics independently added explanatory power to predicting levels of proxy completeness and accuracy. Communication modes significantly predicted proxy completeness, but not accuracy, at both the item and category levels. Specifically, “noticing” was positively related to proxy completeness at the category and item levels, while “conversation” was positively related to proxy completeness at the category level and “participation” was positively related to proxy completeness at the item level.

The type of relationship, i.e., spouse, parent-child, non-relative, etc., was significantly related to proxy accuracy and completeness at both the category and item levels. The relationship type variable was created by using dummy codes with spouses as the omitted group. Thus, siblings and other relatives performed significantly less well than spouses for proxy accuracy and completeness. Children reporting for parents showed significantly lower levels of proxy completeness and accuracy at the item level. Non-relatives demonstrated lower levels of proxy completeness than spouses at the category and item levels. Other characteristics of the relationship between the self and proxy were related to proxy completeness at the category level. The number of activities the self and proxy did together during the past week was positively related to proxy completeness, but the amount of time they spent together during the past 5 weekdays was negatively related to proxy completeness. With the communication modes and the other relationship characteristics entered in the model, there were no significant effects of the financial involvement measure on proxy accuracy or completeness.

Discussion

The first purpose of the present study was to examine the agreement between self and proxy reports regarding purchases that are gathered in the BLS surveys on Consumer Expenditures. The levels of proxy completeness for most of the categories of expenditures that we examined were low even at the category level (i.e., did the target person buy anything in that category during the reference period), and got worse as we required more specific data from the proxy reporters. Although proxy reports of the number of items in a category and the total cost of those items were significantly positively related to the self-reports, the relations were small to moderate, and the proxy reporters significantly underreported the number and cost of the purchases made by the target persons. Finally, when we examined whether self and proxy reports of specific items matched, we found very low levels of proxy accuracy and completeness.

The second goal was to identify factors that would be related to the completeness and accuracy of proxy reports. We discovered that the way the proxy typically learned about the target person's purchases was an important factor in predicting proxy completeness and accuracy. Specifically, there was some evidence that conversation and participation enhanced the completeness of proxy reports, which follows well with previous research by others. In addition, we found that simply noticing another household members' purchases proved to be significantly related to proxy completeness. We believe that this less direct form of learning about another household member occurs frequently in a variety of domains and deserves further research. Characteristics of the relationship between the self and proxy also proved to be consistently related to the completeness and accuracy of the proxy's reports. Our results showed that children (over 16 years old), siblings, other relatives, and non-relatives frequently do not report as completely or accurately as spouses. The degree of interaction between the self and

proxy, as measured by the number of different activities that they engaged in together during the past week, was also positively related to proxy completeness.

The present study included only a small number of categories of expenditures and consisted of a different interview procedure than that used for either the Consumer Expenditure Interview Survey, which is a personal visit interview, or Diary Survey which is a one-week paper and pencil diary kept at home for two consecutive weeks. Nonetheless, *there are enough similarities between the two surveys to conclude that* the completeness and accuracy of proxy reports of these expenditures was distressingly low. Schwarz and Wellens (1994) also found less convergence between self and proxy reports that focus on specific, recent events, which is probably an apt description of much of the data we are gathering on purchases. Given that these data are important, one may be quite legitimately concerned about the quality of data that proxy reporters provided. Given that the data must also be gathered in a timely and cost-effective manner, it seems unlikely that it will ever be feasible to eliminate proxy reporting altogether. Thus, the goal may be to allow proxy reports only when they are able to provide data that reasonably resembles the information the target person would actually provide. According to our research, this could be determined by the proxy relationship to the target person (i.e., if they were married) or if they have some means of direct knowledge of the purchase (i.e., they participated, they noticed the purchase, they had a conversation about it, etc.). Although the latter may be difficult and time-consuming to ascertain, the former is an example of a simple, straight-forward method of determining the best proxy reporter. Currently in the CE, there is no rule that states the interviewer must select the male or female head of the household unless that person is not available. A rule such as that, however, may help improve response quality at a relatively low cost.

Limitations and Future Directions

While it can be argued that it is preferable to have external data to compare accuracy of self and proxy reports, we have only self and proxy agreement as a criteria. Although self-reporters are fallible human beings who may forget or may intentionally not provide complete information about their purchases, their responses are often the best criterion that can be reasonably obtained. Furthermore, in most situations, one would expect the proxy reporter would have less information about another household member than about themselves. Self-reports also represent the only realistic operational alternative to proxy reports for survey researchers conducting household surveys.

Despite this justification for using self-reports as a standard, we are still troubled by observations gleaned from coding some proxy reports of household furnishings. In this category particularly, we noted large purchases, and we would expect very noticeable items, that were reported by only one person. For example, one respondent reported the purchase of a couch from Ethan Allen for nearly \$3,000, and another reported a home computer was purchased. However, neither of these reports was also made by either the target or a proxy reporter. We find it difficult to believe that 1) these purchases did NOT occur and were fabrications; or 2) that anyone living in the household was not aware of the purchase. Unfortunately, the question we cannot answer with these data is who was correct to report or not report this purchase. Perhaps one respondent thought the purchase occurred outside of the reference period, or that the purchase did not really fit the category.

Based on these results, the information we would like to obtain in a subsequent study is not only the disagreements between the self and proxy reports, but some sense of who was right and who was wrong. One way to resolve this without records is to conduct a reconciliation at the

end of the interview and try to determine, as much as possible what really happened; who reported correctly, and who did not. Obviously, actual records of purchases, if available, would help evaluate the quality of the self reports as well and should be pursued whenever possible. Because records are not likely to be available for at least some types of purchases, e.g., not many people get or keep receipts for food away from home obtained through fast-food establishments or vending machines, the next best alternative is to try to get a “shared reality” between household members as to what actually occurred in order to understand more fully the reasons for the discrepancies in self and proxy reports of expenditures. A reconciliation and discussion after the interview may also provide insights into the underlying reasons for differences among reports. For example, how often is a memory a factor compared to exposure to the purchase at all through conversation or noticing. We hope to be able to pursue these issues further.

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Table 1. Proxy Completeness and Accuracy at the Category and Item Level for all Categories of Expenditures, and the Total Number of Items and their Cost as reported by the Self and Proxy.

	Total	Groceries ¹	Food Away From Home	Clothing & Accessories	Household Furnishing
Category Level					
Completeness	60.9%	66.1%	69.4%	56.3%	36.5%
Accuracy	83.0%	89.4%	85.7%	83.6%	55.4%
Number of trips/items					
Self Report	7.03	2.40	3.19	3.32	2.11
Proxy Report	3.58	1.97	1.76	1.92	1.66
Difference (t value)	16.75**	4.16**	10.78**	8.55**	1.44
Correlation	.27**	.05	.18**	.17**	.12
Total cost of trips/items					
Self Report	198.92	76.70	21.98	117.59	151.16
Proxy Report	126.21	61.58	14.61	68.26	310.37
Difference (t value)	4.21*	4.71**	4.88**	5.41**	1.31
Correlation	.18**	.51**	.58**	.39**	.24
Items Level					
Completeness	38.5%	50.4%	18.7%	19.8%	14.4%
Accuracy	64.1%	68.3%	23.9%	30.7%	22.6%

Note: * $p < .05$ ** $p < .01$

¹ Specific items were not asked for groceries, but proxy reporters were asked the number of trips that were made. The total number of trips/items uses the number of trips to the grocery store and the item level matching assumes that each trip noted by the proxy corresponds with a trip noted by the target person. Variation in completeness and accuracy for groceries is related to the number of trips reported by the self and proxy without distinguishing characteristics of specific trips. Thus, item level completeness and accuracy for groceries is a less strict criteria than that used for other categories, where exact items were required to match.

Table 2. Correlations of Communication Modes with Proxy Accuracy and Completeness at the Category and Item Levels.

Communication Mode	Category		Item	
	Completeness	Accuracy	Completeness	Accuracy
Participation	.22**	.04	.29**	.16**
Conversation	.30**	.10*	.24**	.05
Other Tells	.04	-.01	.04	-.02
Notice	.28**	.06	.27**	.04
Read	.17**	.08	.15**	.04
Makes Purchase	.16**	.07	.16**	.05
Regular Purchase	.19**	.08	.16**	.04

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 3. Mean Levels of Proxy Accuracy and Completeness at the Item and Category Levels for each Proxy-Self Relationship Type.

Relationship Type	Category		Items	
	Completeness	Accuracy	Completeness	Accuracy
Spouse	.75 _a	.89 _a	.22 _a	.15 _a
Parent-Child	.63 _{ab}	.81 _{ab}	.05 _b	.02 _{ab}
Child-Parent	.61 _b	.84 _{ab}	-.09 _{bc}	-.06 _{ab}
Siblings	.49 _b	.75 _b	-.27 _c	-.34 _b
Other Relative	.48 _b	.78 _{ab}	-.24 _{bc}	-.25 _{ab}
Non-relatives	.44 _b	.79 _{ab}	-.25 _{bc}	-.13 _{ab}

Note: Means with different subscripts are significantly different at $p < .05$, using Tukey HSD follow-up tests.

Table 4. Correlations of Relationship Characteristics and Financial Involvement with Proxy Accuracy and Completeness at the Item and Category Levels.

Relationship Characteristics	Category		Items	
	Completeness	Accuracy	Completeness	Accuracy
Time spent in last 5 weekdays	-.04	-.04	.00	.06
Time spent in last weekend	.06	-.03	.10*	.07
Total number of Activities	.22**	.05	.24**	.12*
Financial involvement	.15**	.04	.17**	.09

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 5. Results of Regressions (Standardized Beta weights and R-values) of Proxy Completeness and Accuracy at the Category and Item Levels on Communication Modes, Relationship Characteristics, and Financial Involvement.

	Category		Items	
	Completeness	Accuracy	Completeness	Accuracy
Communication Mode				
Participation	.05	-.05	.15*	.19*
Conversation	.14**	.08	.04	-.07
Other Tells	-.01	-.01	.02	.02
Notice	.14**	-.00	.18**	.00
Read	-.03	.05	-.07	-.07
Relationship Characteristics				
Parent-Child ¹	-.05	-.13*	-.06	-.08
Child-Parent ¹	-.09	-.11	-.22**	-.20*
Siblings ¹	-.14**	-.19**	-.20**	-.25**
Other Relative ¹	-.14**	-.13*	-.14*	-.18**
Non-relatives ¹	-.11**	-.08	-.11*	-.07
Time spent in last 5 weekdays	-.14**	-.02	-.10	.00
Time spent in last weekend	-.02	-.08	-.00	-.03
Total number of Activities	.16**	.01	-.11	.01
Financial involvement	-.07	-.07	-.11	-.10
R				
R	.401	.203	.409	.286
R-Square				
R-Square	.161	.041	.167	.082

** $p < .01$ * $p < .05$

1. The omitted group was spouses, so all coefficients reflect differences between the relationship type and spouses on proxy accuracy and completeness.

Appendix A. Description of the Sample.

Household Characteristics

There were a total of 97 households:

39 households with 2 respondents

30 households with 3 respondents

28 households with 4 respondents

54% of the 2 person households had only 2 persons, 60% of the 3 person households had only 3 people, and 46% of the 4 person households had only 4 people.

Respondent Characteristics

There are a total of 280 respondents. Only household members at least 16 years of age were eligible to participate in the study. The respondents ranged in age from 16 to 85, with a mean age of 33.4 years and a median age of 29 years.

The respondents had the following demographic characteristics:

Sex

45.7% males

54.3% females

Race

88.8% White

9.4% Black

1.1% Asian

.7% American Indian

Education: highest level completed

19.8% Not High School Graduate

39.2% High School Graduate or GED

7.2% Technical or Vocational Degree

6.8% 2 year College Degree

18.3% 4 year College Degree

8.6% Graduate School Degree

Currently Enrolled in School

26.6% Full Time

7.2% Part-Time

Household Income

30 0-20,000

33 20,001-40,000

22 40,001-60,000

12 60,001 +

Relationships of Household Members

Household Composition:

2 person Households

35	Married couples
1	significant others
1	Friends
1	1 parent 1 child

3 person Households

15	2 parents 1 child (or married couple with one parent's child)
2	significant others with 1 child
6	1 parent 2 children
4	married couple with another person
2	1 parent 1 child with another person
1	3 other relatives

4 person Households

13	2 parents 2 children
5	1 parent 3 children
2	2 married couples
2	2 parents 1 child with another person
1	1 parent and significant other with 2 children
1	1 parent and significant other with child and another person
1	married couple with parent and other
1	2 significant others with parent and other
1	4 siblings
1	2 siblings 2 friends

At the dyadic level the file contains reports by self and proxies with the following relationships:

74	spouses
123	parent-child/child-parent relationships
46	siblings
32	other relatives
7	significant others
6	friends
9	Other, non-relatives

Production Meeting Minutes - July 17, 1997

Branch of Production and Control

Production

1. Interview Q961(new) - Processing completed. Q961(new) was signed off by the P & C Branch on July 15th (Calibration weight correction steps were completed (i.e. Incranks, Eranks, FCI, and ITAB were signed off on July 14th and the Final Archive was run the evening of July 14th))
2. Interview Q963 - Processing completed. Q963 was signed off on by the P & C Branch July 15th. (The Final Archive was run the evening of July 14th)
3. Interview Q964 - Data Adjustment review is in process. (The Final Archive was run the evening of July 14th) Calibration weights were signed off and a rerun of Incranks was requested 7/17.
4. Interview Q971 - Screens outlier review is in process. (Month 3 microfilm tapes were received this week, behind schedule, but screens processing will not be delayed.) Calibration weights were rerun July 16th, an error was identified and they have been rerun. DCES will review the July 17th run.

Calibration weights - Tammy will be invited to a meeting, possibly in two weeks, to discuss incorporating the step she performs (for calibration weighting) quarterly into production. (Tammy prepares the population control counts file each quarter.)

The 1997 BOY list of jobs was discussed.

- a) Poverty level update - completed 2/19/97. (Identified as POV97; run in FCI)
 - b) FCI formats - Dennis G. will check on the status.
 - c) Map ITAB - DPS will deliver a copy to Jeanette for sign-off. A copy (i.e. version '97) will need to be created.
 - d) DASASFMT - Lavern will check in to this BOY job since it's purpose is not known. It will need to be run for 1997. The Production Run Book will be updated to include the name of the office responsible for this job.
 - e) Erank formats - DPS will deliver a copy to Fabian for sign-off. A copy (i.e. version '97) will need to be created.
5. Diary Annual Processing - Processing complete. (Reweighting activities required for sign-off. See # 6 below.)
 6. Diary calibration weighting - run July 11th and signed off on. Request to run Q961-Q964 FCI/Incranks daytime. Both FCI and Incranks will need to be reviewed in this run. The sign-off for FCI/Incranks needs to be made to the I & A Branch (i.e. Maureen) so they can then run publication jobs over the weekend.

Unresolved issues

- 1) Section 12B (VLR) Data Adjustment - Systems completed a test of Section 12B (VLR) Data Adjustment 7/10 which required correction. Method 1a is not producing the expected results. Chelsea will speak with Catherine H. possibly Monday to help resolve the issue. Section 12B DA will be manually handled by DCES this quarter. Hopefully the fix will be in for Q971 DA which is just around the corner.

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Branch of Information and Analysis

Production

1. 1995 Integrated Releases
 - a. Report - awaiting publication
 - b. Bulletin - at OPUBs for editing
2. Quarterly

Q961 - Nick reviewed aggregate weighted expenditures for Q961. Steve M. is looking for 1986 TPL programs to see if there is an adjustment made because of Q861 having only 2 months of data. We need this information for 1996 tables.
3. Public Use Microdata
 - a. 1995 CD-ROM - We expect to have CDs delivered from Saunders July 25th.
 - b. 1996 - Wolf and Tammy are working on confidentiality requirements.
4. Publication data base system

1996 integrated tables - Carolyn and Nick are working on parameter files and requirements.
5. Historical CD-ROMs
 - a. 1980-81 - Carolyn and Tom are reviewing files and cleaning up the documentation. Carolyn delivered file names for Diary to LaVern. Mariya will be doing the downloading.
 - b. 1972-73 - Carolyn delivered file names to LaVern. Mariya will be doing the downloading. Tom is working on the documentation.