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USAGE OF DIFFERENT KINDS OF CHILD CARE:

AN ANALYSIS OF THE SIPP DATA BASE

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USAGE OF DIFFERENT KINDS OF CHILD CARE:
An Analysis of the SIPP Data Base

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ABSTRACT

Data are presented to defend the theory that families use the kind of care which is available ˉto them and affordable. Survey of Income and Program Participation (SIPP) data on marital status, other adults in the home, hours the mother works, age of mother, region and city size (indicators of the availability of other care providers) in addition to socioeconomic variables and number of children (indicators of affordability) combine to differentiate users of care by father, grandmother, sibling, nonrelative and center. Such variables also predict who pays for care and how touch they pay.

INTRODUCTION

The increase in the number of mothers of young children in the work force in the last 10 years has spawned a concomitant increase in interest in statistics on the usage of different kinds of child care. What sorts of care are being used by different sorts of families? Who is paying for care? How much do people pay?

Economists (e.g., Robins, 1987) tend to phrase these questions in terms of the use of market care (child care which is paid for) as opposed to non-market care. They are interested in how the "choice" of market care is influenced by such variables as the education of the parents, the income of the family and the wage that the mother could earn, should she enter the paid work force. Psychologists (e.g., Ruopp et al., 1979) frequently discuss child care issues in terms of the quality of care encouraged by different environments (e.g., the more formal day care center or family day care home as opposed to more informal care by relatives) and the effects on children of differences in such variables as group size and the training of staff. Federal government officials, concerned with the design and implementation of programs for low-income families, focus more on questions of the kinds of care that should be approved as part of a government-sponsored program, the degree to which it should be subsidized, and the amount such a subsidy would cost.

In this paper we discuss certain concerns of psychologists in differentiating the sorts of families who use formal versus more informal care arrangements and the general concern of economists about the kinds of families using market care. We report on a national data base which includes more of the variables used in econometric modeling of child care usage patterns than would generally be selected by psychologists. We do not discuss the central concern of psychologists and early child educators about the quality of care because data on this subject are not available in conjunction with family data on child care usage. We do conclude sections with discussions of the usefulness of the data for Federal staff planning child care initiatives.

Our goal is to present a theory which differentiates those families who use informal care (care by the child's parents, siblings, grandparents or other relatives) from those using more formal arrangements (care by nonrelatives in homes or in day care facilities) and those who pay for care from those who do not pay. Then we determine the degree to which data from a national survey support the theory. The basic premise of the theory is drawn from Morgan (1983) who believes that families use the kind of care which is available to them and affordable.

The arguments for availability are as follows. Informal care arrangements will be made for young children when a relative lives nearby, is not employed or involved in an educational or training program during the hours when child care is needed, and is willing to serve as care provider. A father might provide care if he is unemployed, works on a shift which is different from his wife's, or is involved in an educational program with classes in hours different from his wife's hours of employment. His availability is

probably maximized when his wife works part-time since the hours of her work may be more likely to be outside of 9 to 5 or adaptable to his schedule. A grandmother or other relative might be used as caregiver when she lives nearby or with the mother, is young and healthy enough to be willing and able to care for children, and is not employed outside the home the same hours as the mother. More formal care arrangements, on the other hand, will occur more often when there are no available relatives or when there is an ample supply of center care or family day care homes. That is, care by nonrelatives in homes, preschools, day care centers and after-school programs will be more common when mothers work full-time (conflicting with the availability of any relatives). And since center care is more readily available in the southern states[1] and in metropolitan areas, it will be used more often in cities than in more rural areas.

In terns of affordability, other hypotheses can be made. First, informal care may be used more by families in lower socioeconomic groups; more formal care may be used more often by families in higher groups. Informal care is likely to be used when families have a larger number of young children for whom care is needed; formal care may be used more frequently by families with only one or perhaps two young children needing care.

In addition, we should like to propose certain hypotheses based on a notion of personal or group preference. We believe that families often prefer in-home care (by relatives, where possible) for infants and toddlers, but prefer center care for their older preschoolers. School-age children may generally be care for, in the neighborhood where they live or go to school, in their own home or the home of a neighbor or friend rather than a relative or family day care provider.

[1] W. Prosser (Office of the Assistant Secretary for Planning and Evaluation, DHHS) reanalyzed the Children's Defense Fund's report on licensed centers and their capacities by state for 1984 and found the South to have more slots per working mother than was true for other regions.

DATA SOURCES

Several national surveys conducted by the Bureau of the Census have supplied data on patterns of child care usage in the United States. Their results support the theory outlined above. For example, the Current Population Surveys (CPS) conducted by the Bureau of the Census in 1958, 1965, 1977 and 1982 polled nationally representative samples about the kinds of care working people used and the cost of such care. The review, Trends in Child Care Arrangements of Working Mothers, considering data from 1965 to 1977 (U.S. Bureau of the Census, 1982) and the report on-the 1982 survey, Child Care Arrangements of Working Mothers: June 1982, discuss several results which relate the use of different care arrangements to the availability of caregivers. These surveys found more care by fathers among married couples, especially where the mother was working part-time; more care by grandmothers and other relatives in households of unmarried mothers living with another adult; and more formal care among unmarried mothers working full-time with no other adult in their households. In addition, formal care was more often used in metropolitan areas than in non-metropolitan areas.

Data from these surveys also support the notion that care arrangements are related to their affordability. Specifically, measures of level of parental education, family income, and parental occupations all relate to the kinds of care used. Relatives are more often used by families who can not afford to pay much money for child care -- those with lower levels of education and incomes where neither parent is in a white-collar job. Care by nonrelatives is more common among parents who can afford to pay for care -- those families where parents are well educated, have higher incomes, and where both parents work in white-collar occupations.

In matters of personal or group preference, these surveys have two common results. Black families use less care by father, more care by other relatives, and more center care than White families. And, with regard to the ages of children, the findings show that center care is much more common among children from 3- to 5-years-old than for younger children.

Generally, these findings have resulted from unidimensional analyses of data where, for instance, level of education is related to child care arrangement. It is the purpose of this paper to update the results from previous Census surveys and extend them by using more recent data (from 1985) and constructing multidimensional models predicting the use of different kinds of care and who pays for care from many different 'family descriptors.

THE SURVEY OF INCOME AND PROGRAM PARTICIPATION (SIPP)

Data for the present analysis are derived from the Survey of Income and Program Participation. The SIPP, conducted by the Bureau of the Census, gathers longitudinal data on social and demographic characteristics, labor force participation, earnings and income, and participation in Federal programs. Each sample or "panel" is selected to represent the civilian noninstitutional population of the United States. Representative households participate in the study over a period of approximately 2 1/2 years, being interviewed every four months.

This paper concerns the fifth set of interviews of the 1984 Panel. This wave of interviews contained a special topical module on child care which asked working guardians about the care arrangements for their youngest three children under the age of 15. Its interviews were conducted in January through April of 1985; for each household, the child care questions concerned the month immediately preceding the interview. Thus, the information on child care reflects care in the winter months of December, 1984 through March, 1985.

The 1984 Panel initially selected 25,000 housing units of which about 20,000 were occupied and eligible for interview. All individuals ages 15 and older in the household were interviewed, a total of 53,726 people. By the time of the fifth wave, 51,975 people remained active in the sample, of which 3,601 declared they were working guardians of children under 15. They each answered the questions about child care, discussing the arrangements made for 5,564 children. It is these answers which are discussed below.

In presenting data, we first discuss the general results from SIPP, then discuss the model for connecting family descriptors and child care arrangements, and finally describe the results from analyzing the model. After the analysis of kind of care used by families, we continue with an analysis of who pays for care and how much they pay.

TYPE OF CHILD CARE ARRANGEMENT

Table 1 provides a summary of the kinds of arrangements made for children in sample households. The findings are grouped by age of child. If a family had two or more children in one of the age groups, data for the youngest child were included in the table. For children aged 0 to 5, primary *care* arrangements are noted. For older children, whose primary care arrangements were usually school, secondary care arrangements are recorded.

Some explanations of entries in the table are relevant. First, "in-home" care categories generally include care in the child's home and in the provider's home. So, for example, in-home care by grandmother includes care in the child's home, as well as care in the grandmother's home. This combination of different homes was done to focus on the individual acting as caregiver and to raise the sample size using particular caregivers to allow for subsequent analyses of as many groups as possible by age of child. The exception to this combination of categories is nonrelative care. Because of the considerable difference between care in the child's home by a nonrelative (sometimes a "Nanny") and care in a nonrelative's home (often a family day care in-home), these kinds of care have been separated on the table.

TABLE 1: Kind of Care Used for Children of Different Ages[a] (Percent of Children in Age Group)

Kind of Care	Age of Child					
	0	1-2	3-4	5	6-8	9-12
In-Home: Total	82	78	62	41	77	88
Mother	(6)	(5)	(6)	(6)	(3)	(3)
Father	(17)	(15)	(14)	(12)	(13)	(17)
Self, Sib	(0)	(1)	(1)	(0)	(16)	(39)
Grandmother	(19)	(18)	(13)	(7)	(15)	(11)
Other Relative	(6)	(8)	(6)	(3)	(5)	(3)
Nonrelative--Child's[b]	(7)	(6)	(5)	(3)	(6)	(5)
Nonrelative--Other's	(27)	(25)	(17)	(10)	(19)	(10)
Out-of-Home: Total	18	22	38	59	23	12
Center-Preschool	(17)	(18)	(33)	(21)	(11)	(4)
School	(0)	(0)	(3)	(35)	(8)	(5)
Work	(1)	(4)	(2)	(3)	(4)	(3)
Number of Children (in thousands)	1,398	3,105	3,635	1,888	1,954	2,304

a. For ages 0-5, primary care arrangements are noted. For older children whose primary arrangements are almost exclusively school, secondary care arrangements are noted.
b. Nonrelative--Child's means a nonrelative serves as care provider in the child's own home. Nonrelative--Other's means that care is supplied in the nonrelative's home.

Second, the alternative to care in a home situation is referred to as "out-of-home" care, implying that children are in the formal care arrangements defined by day care centers, preschools or schools or that they are cared for by the mother where she works. Third, let us clarify the use of "Mother" as principal caregiver in this data base of working mothers. This category occurs because many mothers work part-time, and

consider that they are still the primary caregiver for their children. Some mothers even work full-time (for example, on the night shift) and retain the role of primary caregiver.

The findings may be summarized as follows:

- A family home (either the child's own or another home) is the most frequent place in which care occurs for preschool children, housing 82, 78 and 62 percent of children in the three age groups of preschoolers on Table 1. Out-of-home arrangements are more frequent than in-home situations for the primary care of children 5-years-old and above, but the home is the most frequent form of secondary care for school-aged children, when 77 percent of 6- to 8-year-olds and 88 percent of 9- to 12-year-olds are cared for in a home environment.

- Care by relatives (mother, father, self, sibling, grandmother, and other relatives) accounts for the greatest percentage of in-home care for all ages of children (59, 60, 65, 68, 68, and 83% respectively).

- Fathers and grandmothers are the most common caretakers in the homes of children with working mothers until children are in the older grades of elementary school (aged 9 to 12) when self and sibling care supercede.

- The use of formal day care arrangements in centers, preschools, and after-school programs peaks with 3- and 4-year-olds at 33 percent of children, though it is relatively common for all ages up to 8.

Thus, as in previous data bases, in-home care -- particularly by relatives -- is very prevalent for young children of working guardians. When the child's guardian (usually the mother) is at work, fathers and grandmothers assume the greatest burden for child care, with siblings given responsibility for older elementary school-aged children.

The first Census report on the SIPP child care data, Who's Minding the Kids? (U.S. Bureau of the Census, 1987), presents similar data to those quoted above and goes on to discuss differences between the families who use different kinds of care in terms of the guardian's marital status, education, occupation, race, and hours of employment (full-time vs. part-time). In general, tables are 3-way, displaying kind of care, age of child and one descriptor of the guardian.

It is the purpose of this report to develop models predicting the choice of kind of care from the range of descriptors of the guardian accessible through the data base. Variables can be divided into groups defining measures of availability, affordability and group preference, so that the discussion of results can inform the suggested theory.

OVERVIEW OF APPROACH TO PREDICTING KIND OF CARE USED

In order to develop models of what sorts of families use different kinds of care, the statistical technique of probit analysis was chosen (Pindyck & Rubinfeld, 1976). This technique is similar to regression analysis in that it uses information from a series of "independent" variables (e.g., marital status of guardian, education, income) to predict behavior on a "dependent" variable (use of father care or another sort of care). The major difference in this type of analysis is that the dependent variable must be in the form of Yes/No (Uses this kind of care/Does not use this kind of care).

The notion of availability of types of care can be explored through the SUP variables of marital status, hours of work, age of mother, region and metropolitan area:

- Marital status. Three variables represent this category: single mothers residing with no other adult; single mothers residing with another adult (not the father of the child); and married mothers. Each variable is coded as a 0 (not true of this family) or a 1 (true of this family). The two which appear in the analyses are the two descriptors of single mothers; all results should be interpreted as a comparison of these single mothers to married mothers.

- Hours of Work. The variable Part-time describing mothers who worked less than 32 hours a week is used in the model.

- Age of Mother. Mothers were divided into those under 26, those 26 to 35, and those over 35. The variables representing the youngest and oldest groups appear in all equations.

- Region. The Census regions of Northeast, North Central, South and west were defined; South is the comparison region.

- Metropolitan Area. The Census definition of a Metropolitan area was accepted. Those without this designation may or may not be in a "metropolitan" area; those with it are definitely in an area of high population density.

That is, fathers are likely to be available when mothers are married and working part-time. Grandmothers are more likely to be available to unmarried mothers who are living with another adult. Grandmothers may also be more available when mothers are younger, so that the grandmothers are also relatively young. Formal care arrangements are more likely to be available in southern states and in cities.

The idea of affordability is examined through the various measures of socioeconomic status (mother's education, occupation and family earnings) and the number of children in the family.

- Mother's Education. The four categories of education are: less than a high school degree, a high school degree, sane college or a college degree, and training beyond college. The variable representing those with a high school degree does not appear in the models.

- Mother's Occupation. Four occupational groups were defined using the traditional us categories: Professional, Sales, Service, and Labor/Craft. Too few mothers were in the Armed Forces to include that group. In the analyses, Sales is not included.

- Family Earnings. The natural log of Earnings for the family or sub-family (in a complex household) for the month of December, 1984 was used as this measure. All members of the sample had provided information on this particular month. Earnings was chosen instead of income since it represented a more regular influx of monies, one on which it seemed more likely that families would base their budgeting for child care.

- Number of Children in Age Groups. Three variables define the number of children in various age groups: the number of children in the family between the ages of 0 and 6; 7 and 10; and 11 and 14. All three variables may be entered into the probit analyses as they are measured independently of each other.

Specifically, care by relatives is likely to be more common among families who are less able to pay for care -- those with less education, occupations in the blue collar groups, and lower incomes. Also, families with many children will be less likely to be able to purchase care for those children, especially if a number of children are of preschool age.

The final variable, race, may yield results suggesting different preferences across racial groups.

- Race. All guardians were classified as Non-White or White. The category "White" includes Hispanics. The variable Non-White appears in all analyses.

There have been previous results showing different usage patterns for Black and White families, and we may expect those to be repeated here. It may be that racial groups differ in the availability of different kinds of care. Even after taking account of the socioeconomic measures listed above, there may be differences in the affordability of care, perhaps due to interactions among availability and affordability variables. Or, there may be another set of very different measures which accounts for racial differences in usage of different kinds of care.

In the presentation which follows we discuss models predicting the five most frequent care arrangements (all of those with sufficient samples[2] to permit the probit analysis). We describe first families which use informal, in-home care by father, grandmother, or siblings since informal care is the more prevalent care arrangement. Then we describe families which use more formal care supplied by nonrelatives in their own "family day care homes" and in centers. For each kind of care we separate the results for children in six age groups: infants less than 1-year-old, toddlers 1- to 2-years-old, preschool children aged 3- to 4-years-old, 5-year-olds, 6- to 8-year-olds, and 9- to 12-rear-olds. Because of constraints from the size of the samples within each age group, some care arrangements are discussed for a subset of ages, rather than all ages.

The tables which present data from the probit analyses show "effect sizes" for each of the independent variables. That is, the numbers show the size of the effect of moving from a score of 0 on a variable to a score of 1. For the predictor of part-time work, for example, they show the change in the probability of using a particular kind of care from those working full-time (those with a score of 0 on the variable) to those working part-time (scoring 1 on this variable). On Table 2, for example, the change in the probability of using father care for infants in families where the mother works full-time to those where the mother works part-time is .148. Families in which the mother works part-time are 14.8 percentage points more likely to use father care for their infants than families in which the mother works full-time. As is usual in statistical presentations, the plus sign and stars indicate the level of significance of the effect. This particular effect of hours of work is significant at the .001 level.

In the example using "part-time" as a predictor, the comparison group (full-time) is straightforward. Among groups of variables describing different levels of education, occupational categories, marital status, or region of the country, the comparison group is not as obvious. It is the one category which does not appear on the table. For example, three levels of education are listed an Table 2: mother's education less than a high school degree, mother's education involved some college courses or a college degree, and mother's education included some advanced courses beyond college. The missing level is mother's education included a high school diploma, but no further course work. So, if there is a significant result shown for any of the three levels of education on the table, mothers in the significant category are more likely (if the effect size is positive) or less likely (if the effect size is negative) to use father care than mothers with a high school diploma.

It is also possible to compute the significance of differences between levels of the same variable when both levels are shown on the tables. To accomplish this, one calculates a t-statistic from the coefficients and standard errors of the two levels of the variable. Where the results suggest that the levels of a variable differ, we have done these calculations and reported any significant differences in the text.

[2] We present analyses of only those arrangements where more than 25 families had children in care.

Since it is rare for results to be completely consistent across all age groups, we discuss the findings that are significant in about half of the age groups and in a consistent direction in the other groups. Because of confusion introduced by same male guardians in the sample, only data for children with female guardians are presented.

FATHER CARE

The family descriptors which are related to use of the father for child care support the theory that the use of different kinds of care is related to availability and affordability. Several variables show consistent results across age groups when examining father care (see Table 2): marital status of the mother; part-time work status of the mother; the region of the country in which she lives; mother's education and occupation; and the number of children in the family. The first two suggest that father care is used more when the father is available:

- Single mothers, whether or not they live with another adult, are less likely to use father care than couples.

- When mothers are working part-tine, fathers are much more often used as child care providers than when mothers are working full-time.

The father is not available in the household of a single mother, so it seems reasonable he would be used less as a primary caregiver than other, more available people. Since most of the fathers in the sample were employed, and so were not easily available for full-time child care (unless both members of the couple did shift work and chose different hours), fathers were more often used when mothers worked part-time. According to the research of Harriet Presser (1986), shift work is very common among families with young children, so that it is not a surprise that so many fathers have some hours available for care while their wives are working.[3]

The third finding, concerning region of the country, suggests that father care is used when form of market care are not as prevalent:

- Father care is much more prevalent in the Northeast, and somewhat more prevalent in the north central and western states than in the South.

Regional differences in the use of father care may be due to the fact that the supply of center care is more substantial (and-perhaps less costly) in some parts of the country (e.g., the southern states) than in others. Or, it may be that there are different attitudes toward kinds of care in different parts of the country which lead to a more frequent use of informal arrangements in same regions and more formal ones in others. A good national study of the supply of market care would be useful in pinpointing the degree of regional differences in the supply and cost of center care and family day care homes.

In contrast to these findings which may be explained by the availability or lack of availability of fathers, other consistent findings suggest that a part of the decision about care may be economic.

[3] Information on shift work is not available on this SIPP data base, but will be collected in future panels.

- Mothers with course work beyond college are less likely to use father care than mothers in any other educational group.

- Mothers who work in service occupations are more likely to use father care than mothers in technical and sales occupations.

- The greater the number of children under the age of 10, the more likely the family is to use father care.

TABLE 2: Descriptors of Users of Father Care

Kind of Care	Age of Child					
	0[a] (N=1,511)[c]	1-2 (N=3,185)	3-4 (N=3,624)	5 (N=1,890)	6-8 (N=5,145)	9-12[b] (N=6,799)
Single, No Other Adult		-0.463	-0.501***	-0.587	-0.429**	-0.186
Single, Other Adult	-0.075	-0.258**	-0.685	-0.295+	-0.360*	-0.117
NonWhite	-0.020	0.001	-0.123	-0.037	-0.002	0.027
Mother's Age Under 26	0.061	0.059	0.124+	0.126	-0.139	
Mother's Age Over 35		-0.024	0.010	0.137	-0.027	0.013
# Children 0-6	0.036+	0.053	0.041	0.061	0.033	0.035+
# Children 7-10	0.051	0.079	0.082+	0.196***	-0.002	0.035*
# Children 11-14		-0.012	-0.027	0.104	-0.067	0.022
Mother's Educ. Under H.S.	-0.101	-0.063	0.061	0.195	-0.025	0.012
Mother's Educ. College	-0.061	-0.060	0.057	0.007	-0.060	0.002
Mother's Educ. Advanced		-0.359***	-0.332*	-0.304+	-0.137	0.020
Mother's Occ. Professional	-0.038	0.193*	0.076	0.056	-0.057	-0.032
Mother's Occ. Service	-0.078+	0.129+	0.133*	0.149	0.094	0.012
Mother's Occ. Craft/Labor	-0.061	-0.101	0.164*	0.176	0.074	0.027
Part-time Work	0.148***	0.114*	0.166**	0.000	0.085+	0.061**
Family Earnings (Ln)	-0.034	-0.033	-0.022	-0.024	-0.026	0.002
Northeast	0.080	0.354***	0.205**	0.231*	0.144*	0.051+
North Central	0.046	0.199**	0.144*	0.178+	0.061	-0.015
West	0.041	0.237**	0.156*	0.129	0.119	0.004
Metropolitan	-0.041	-0.056	-0.007	-0.060	-0.010	-0.060*
Constant	-0.230	-0.420*	-0.362**	-0.566*	-0.347*	-0.693***
Log-Likelihood	-108.66	-200.92	-223.80	-108.66	-200.92	-231.48

a. Because of low frequencies, the variable list for infants did not include Single, No Other Adult; Mother's Age Over 35; and # Children 11-14. The list combined M. Educ. College and M. Educ. Advanced, the coefficients for which are listed next to M. Educ. College.
b. The variable list for 9- to 12-year-olds did not include Mother's Age Under 25 as too few were in the sample.
c. Ns are in thousands.

+p<0.10; *p<0.05; **p<0.01; ***p<0.001.

These variables combine to suggest a socioeconomic explanation of the use of father care. Mothers who are very well educated are likely to have spouses who are also well educated, who have careers that take time above and beyond a 40-hour week, and who do not choose to do child care. These better educated parents find sources of care outside the nuclear family. In a sense, the father is not "available" to provide care, but more practically, he commands a salary in the workplace which is sufficiently high that he cannot choose to stay home with children. In addition, mothers in service

occupations use more father care. This may be because these mothers are earning low salaries and feel that the use of market care would reduce their contribution to family earnings to just about zero. Or, it may be that mothers in service occupations have more flexible working hours than women in other occupational groups and can arrange to work a different set of hours than their husbands. In this case the availability of the spouse dovetails with the affordability of his care. If a family has only one or two children, it is likely to be easier to pay for care than if there are more children. With a larger family, the father is called upon as a resource for care in place of paying an outsider.

It is important to note that there is not a significant or consistent trend for the variable of family earnings. After factoring out the effects of level of education, occupation, and number of children, the amount the family earns does not predict the use of father care. So, socioeconomic variables do seem to play a role in determining kind of care used. They may well be acting to reduce the choice of families about kind of care. When care would be relatively costly (families have more young children) and/or the mother is earning a low salary (in a service occupation), the family may feel forced to use father care because other alternatives are perceived as too costly. On the other hand, when mothers (and probably fathers) are well educated, the father may simply not be an available choice for care provider.

Thus, in the analyses of the model describing families which use father care, our theory holds. Father care is used in families with fathers present, where the hours a mother works can be arranged around the hours a father works, and in regions of the country where center care is less readily available (or, perhaps, less costly). And it is used where socioeconomic variables encourage such care.

GRANDMOTHER CARE

The theory that available caregivers are the ones who are used is supported by two results on grandmother care. First, marital status is related to the use of grandmother care (see Table 3):

- Single mothers who reside with another adult more often use grandmother care than do couples. This is especially true for single mothers of infants and toddlers.

In many cases where mothers are living with other adults, these other adults are 20 to 30 years older than the mother. This would suggest that they are, in fact, the mother's parents. With an available child care provider in the house, it is not surprising that these mothers elect grandmother care more often than other mothers.

TABLE 3: Descriptors of Users of Grandmother Care

Kind of Care	Age of Child					
	0[a] (N=1,511)[c]	1-2 (N=3,185)	3-4 (N=3,624)	5 (N=1,890)	6-8 (N=5,145)	9-12[b] (N=6,799)
Single, No Other Adult		0.010	-0.007	N	-0.065	0.117
Single, Other Adult	0.048***	0.202*	0.014	too	0.092	0.135
NonWhite	0.014	-0.030	0.012	small	0.241***	0.172*
Mother's Age Under 26	0.010	0.045	0.008		0.195*	
Mother's Age Over 35		-0.063	-0.009		-0.329**	-0.246**
# Children 0-6	-0.016**	-0.079+	-0.009		-0.081+	-0.055
# Children 7-10	-0.090	0.099+	-0.007		-0.022	-0.107+
# Children 11-14		-0.066	-0.001		-0.034	-0.103+
Mother's Educ. Under H.S.	0.023	-0.083	0.001		0.050	0.080
Mother's Educ. College	-0.063**	-0.077	-0.009		0.016	-0.034
Mother's Educ. Advanced		-0.179	-0.015		0.151	0.026
Mother's Occ. Professional	-0.002	-0.094	-0.011		-0.033	0.115
Mother's Occ. Service	0.021	-0.125+	-0.014+		-0.062	-0.051
Mother's Occ. Craft/Labor	0.031+	0.127+	0.007		0.157*	0.116
Part-time Work	0.039*	-0.052	0.011		-0.001	0.093
Family Earnings (Ln)	0.114**	-0.007	-0.010*		0.015	0.026
Northeast	-0.011	0.004	-0.005		0.059	0.046
North Central	-0.070*	-0.041	0.002		0.072	-0.018
West	-0.045	-0.006	-0.011		0.112	0.055
Metropolitan	0.002	0.026	-0.013+		0.021	-0.009
Constant	-0.037*	-0.172	-0.006		-0.320**	-0.367**
Log-Likelihood	-102.76	-251.58	-242.41		-121.78	-129.85

a. Because of low frequencies, the variable list for infants did not include Single, No Other Adult; Mother's Age Over 35; and # Children 11-14. The list combined M. Educ. College and M. Educ. Advanced, the coefficients for which are listed next to M. Educ. College.
b. The variable list for 9- to 12-year-olds did not include Mother's Age Under 25 as too few were in the sample.
c. Ns are in thousands.

+p<0.10; *p<0.05; **p<0.01; ***p<0.001.

The high level of significance of this predictor for mothers of the youngest age groups of children may have several explanations. Mothers with very young children may still be trying to establish themselves financially to be able to live on their own; the arrangement of living with grandparents is a useful one for the time being. Or, these mothers may prefer the support of their parent(s) when they have infants and toddlers, finding that the hours of care are easier to manage when there is an extra pair of hands to share the work. The use of grandmother care may became less frequent for these mothers when the children are 3- to 4-years-old because of a preference on the part of grandmothers: as they age and the children are becoming more active, it becomes more difficult to care for them. Also, when the first child reaches 3 or 4, there may be a second child, and the pair may feel too exhausting for the grandparent. This latter explanation is supported by the next finding:

- Grandmothers are used as caregivers when there are fewer children from 0 to 6 in the family.

It would seem that grandmothers are making preferences known. They are willing to care for small children, as long as there are not very many of them.

The second finding supporting the notion that mothers choose grandmothers as caregivers at least in part because of their availability relates to the mother's age:

- Mothers over the age of 35, especially those with children 6-years-old or more, rarely use grandmother care in comparison to younger mothers.

When mothers are in this older age group, grandmothers are probably 55- to 65-years-old. They may not be around to care for youngsters or they may well not feel like caring for children. In this sense, availability is both a measure of physical presence and an indicator of willingness to serve.

Findings on the use of informal care by a grandmother also partially support the notion that she is used because of her affordability:

- More mothers with occupations in the labor or craft groups use grandmother care than mothers in the technical/sales groups. There is a trend for fewer mothers of 1- to 12-year-olds in service occupations to use such care.

There, thus, appears to be a hierarchy among mothers in these three groups of occupations. Mothers in labor and craft occupations use more grandmother care than do mothers in technical and sales occupations who in turn use more grandmother care than mothers in service occupations. It would be interesting to explore differences between families in these groups. If finances were the most powerful or only reason for choice of grandmother care, one would expect that mothers in labor/craft occupations and those in service occupations, which earn lower salaries than the professional and sales groups, would use more grandmother care. The fact that only mothers in labor and craft occupations make the selection more often than the other groups of mothers

suggests another explanation is required. Perhaps the difference between these groups is in the specific hours that they work. Mothers in labor and craft occupations may be most likely to work from 9 to 5, followed by mothers in technical and sales occupations and lastly by mothers in service occupations. Grandmothers may not wish to care for children in the evening or on weekends.

Results concerning the variable of family earnings are also somewhat problematic.

- Families with lower earnings and children from 1- to 12-years-old tend to use more grandmother care than families with higher earnings. But the earnings variable reverses itself in the case of families with infants: those with higher earnings use more grandmother care.

A financial rationale would suggest that all families with lower earnings would choose grandmother care, if it were available. The fact that families with infants show a different trend may be because finances are not the overarching principle for them in choosing care. When mothers of infants work, they may believe that grandmother care is superior and clearly opt for this care.

So, there appears to be some support for the notion that grandmother care is used because it is affordable, but certain trends in the data suggest that this is not a completely consistent rationale for using grandmothers. Their availability seems a consistent reason; their affordability sometimes a reason.

The last finding follows trends in previous Census studies by showing a relationship between race and choice of grandmother care:

- Among school-aged children, there is more grandmother care in NonWhite families than in White families.

It may be that this is a cultural effect or an additional comment suggesting that more grandmothers are available and willing in Black and Asian families than in White families.

In sum, where grandmothers are available, they are often used, particularly by families whose finances suggest that such free or low cost care is advisable. In the case of families with infants and NonWhite families, the grandmother may well be the caregiver of choice. For their part, grandmothers may make clear a preference for younger children, for fewer children, and for hours of care that are during the day: they are willing to help, but understand their limits.

SIBLING CARE

It is only with the oldest group of children, 9- to 12-year-olds, that sufficient sibling care exists to perform a probit analysis. Table 4 shows that four variables significantly describe those families who choose sibling care: the two which describe the households of single mothers; one referring to mother's age; and the variable of race. The first three support the notion of availability of caregivers leading to their use; the finding regarding race may support the theory of differences in group preferences or it, too, may reflect a difference across racial groups in the availability of alternatives. First, with regard to availability, we found that

- Sibling care is used more often by single mothers (with and without another adult in the household) than by couples.

- It is also used more by older mothers (those over 35) than by younger mothers.

It would seen that older, single mothers do not have the supportive cast available to younger, married mothers. Fathers are not present; grandmothers are older and may not be able to care for children. Older siblings, however, are often available and may well be asked to serve as caregivers.

The fourth important predictor of sibling care is race:

- NonWhite families use siblings more frequently than white families.

This is an interesting result. It may be that programs for the older children in NonWhite families are just not as easily available in the schools, or it may be that NonWhite families prefer giving their teen-agers responsibility for other family members.

TABLE 4: Descriptors of Users of Sibling Care						
Kind of Care	**Age of Child**					
	0 (N=1,511)[c]	**1-2 (N=3,185)**	**3-4 (N=3,624)**	**5 (N=1,890)**	**6-8 (N=5,145)**	**9-12[a] (N=6,799)**
Single, No Other Adult	N too small	N too small	N too small	N too small	N too small	0.274**
Single, Other Adult						0.319**
NonWhite						0.206*
Mother's Age Under 26						
Mother's Age Over 35						0.231**
# Children 0-6						0.023
# Children 7-10						-0.082
# Children 11-14						0.011
Mother's Educ. Under H.S.						0.050
Mother's Educ. College						-0.070
Mother's Educ. Advanced						-0.565
Mother's Occ. Professional						-0.024
Mother's Occ. Service						-0.056
Mother's Occ. Craft/Labor						-0.075
Part-time Work						-0.105
Family Earnings (Ln)						0.032
Northeast						-0.015
North Central						0.065
West						0.186+
Metropolitan						-0.085
Constant						-0.530***
Log-Likelihood						-121.73

a. The variable list for 9- to 12-year-olds did not include Mother's Age Under 25 as too few were in the sample.
b. Ns are in thousands.

+p<0.10; *p<0.05; **p<0.01; ***p<0.001.

CARE BY NONRELATIVES

Only care of children under the age of 6 is included in this set of analyses (see Table 5) as nonrelative care is not sufficiently prevalent for school-aged children to allow for probit analyses. The measures of marital status and hours of work, with consistent results -across age groups, suggest that mothers may use care by nonrelatives when relatives are not available or, perhaps, not willing:

- Single mothers with no other adult in the household use more nonrelative care than couples.

In these family situations, the child's father and grandparents are not readily available to provide care, so it makes sense that more mothers in this position need to seek care outside of the extended family. Second,

- Those working full-time (not working part-time) use nonrelative care more often than those working part-time.

One clear finding in the earlier section on father care was that fathers could be called upon for child care if the mothers worked part-time, but were much less frequently available if the mothers worked full-time. This finding on nonrelative care is the reverse side of the coin. When full-time care is required, it is more likely for parents to use sources outside the family.

The next consistent finding may be due to different levels of supply of nonrelative care in different regions of the country, to differential costs, or to group preferences, however they might have been established:

- Families in the north central states use more nonrelative care than families in the South.

We found core father care in areas outside the South; here we see a preference for nonrelative care in one area -- the north central states -- over the South. While differences were not particularly expected for the variable of region of the country, they are evident in the data.

The last consistent finding is connected to the finances of care:

- Families with higher earnings use more nonrelative care.

Since most nonrelatives require payment for care, it seems reasonable that families more able to pay would more often elect nonrelative care

TABLE 5: Descriptors of Users of Non-Relative Care in Another Home						
Kind of Care	**Age of Child**					
	0[a] (N=1,511)[c]	**1-2 (N=3,185)**	**3-4 (N=3,624)**	**5 (N=1,890)**	**6-8 (N=5,145)**	**9-12 (N=6,799)**
Single, No Other Adult		0.327***	0.284***	0.024	N too small	N too small
Single, Other Adult	-0.115	-0.007	0.131	0.022		
NonWhite	0.114	-0.043	-0.047	-0.124*		
Mother's Age Under 26	-0.021	-0.066	-0.116+	0.023		
Mother's Age Over 35		0.106	0.003	-0.069		
# Children 0-6	-0.124*	-0.027	0.069+	-0.004		
# Children 7-10	-0.077	-0.144**	-0.050	-0.008		
# Children 11-14		0.126+	0.016	0.036		
Mother's Educ. Under H.S.	0.170	-0.119	0.036	-0.069		
Mother's Educ. College	0.062	-0.060	-0.070	0.011		
Mother's Educ. Advanced		0.129	-0.083	-0.086		
Mother's Occ. Professional	0.009	-0.046	0.072	0.040		
Mother's Occ. Service	-0.075	-0.043	-0.060	-0.192*		
Mother's Occ. Craft/Labor	-0.134	-0.028	0.044	-0.056*		
Part-time Work	-0.214**	-0.139**	-0.086	0.014		
Family Earnings (Ln)	0.023	0.029*	0.036**	0.031		
Northeast	0.058	-0.074	-0.050	0.048		
North Central	0.271**	0.041	0.138*	0.063**		
West	-0.059	-0.010	0.045	0.055*		
Metropolitan	0.085	-0.076	-0.114*	0.002		
Constant	-0.470	-0.447*	-0.478***	-0.058**		
Log-Likelihood	-142.66	-293.39	-282.78	-95.26		

a. Because of low frequencies, the variable list for infants did not include Single, No Other Adult; Mother's Age Over 35; and # Children 11-14. The list combined M. Educ. College and M. Educ. Advanced, the coefficients for which are listed next to M. Educ. College.
b. Ns are in thousands.

+p<0.10; *p<0.05; **p<0.01; ***p<0.001.

The picture of users of nonrelative care, the first type of formal care, is very different from that for users of informal care arrangements. For one, nonrelative care seem to be used when care by relatives is not easily available. For example, it is used by mothers with no other adult in the household (i.e., no father or grandmother), and it is used when the mother works full-time, a situation which, even in couples, often precludes care by the father. Because we are talking about care for children under 6, it is unlikely that there are many families with siblings of sufficient age to be entrusted with the care of young children.

Though the grandmother may not live with the family, one might hypothesize that she is available to some of the families who choose nonrelative care. However, the families who ultimately do use nonrelative care are different from those who use grandmother care in the key fact that they have higher earnings. This might mean that they (and the grandmother) have a choice in who cares for the child; it might mean that the grandmother is also working; or it might also mean that these families have been free to move away from the grandmother and do not have her child care services available.

One might also note that the use of nonrelative care crosses education and occupational groups, and age groups of mothers. Members of all groups who are in need of full-time care (and who may not have choices of relatives for such care) find the family day care home to be a solution.

CENTER CARE

Of the seven variables which consistently predict use of center care, three relate to the lack of availability of other forms of care (mother's hours of work, region and metropolitan area), three to affordability (number of children in the family, mother's occupation, and family earnings); and one deals with the issue of cultural preference or, perhaps, some combination of availability and affordability (race). (See Table 7). With regard to availability we have the following findings:

- Center care is used less by part-time workers than by full-time workers.

- Families in the north central states, the Northeast and the West use center care less frequently than those in the South.

- Center care is more frequent in metropolitan areas.

When the nether is working full-time, she may well overlap working hours with the father, so that he is not available for care. The number of hours of care required may be too extensive for the grandmother (if she lives nearby). Other relatives may be unwilling to extend their services for so many hours each week. The choices for full-time care seem to be care by nonrelatives, either in a family day care home or a center. Since centers are more frequently available in the South and in metropolitan areas, it seems reasonable that southerners and city dwellers do use this form of care more often than those in other parts of the country or in less densely populated areas where the supply of care is more limited.

The fact that center care is a form of market care -- that it is usually paid for -- would seem to account for the next results:

- Families with fewer children more often use center care than families with more children.

- Mothers in service occupations use center care more sparingly than mothers is technical, sales, management and professional occupations.

- Center care is used more often by families with higher earnings.

The families who use center care are thus in a better position to afford payments for care. They have fewer children to pay for, they are in occupations with relatively higher salaries, and their family earnings are greater. Also, mothers working in service occupations may be working more unusual hours (shift work or weekends) when centers are less available.

Finally, there is a result for race:

- NonWhite mothers use center care more frequently than White mothers. This repeats the results of previous Census studies, though the reason for it remains unclear. It may be a matter of availability of center care or a cultural preference or a combination of reasons.

TABLE 6: Descriptors of Users of Center Care

Kind of Care	Age of Child					
	0[a] (N=1,511)[b]	1-2 (N=3,185)	3-4 (N=3,624)	5 (N=1,890)	6-8 (N=5,145)	9-12 (N=6,799)
Single, No Other Adult		0.002	0.013+	0.092	N	N
Single, Other Adult	-0.013	-0.001	-0.004	0.083	too	too
NonWhite	0.059	0.004**	0.014*	0.007	small	small
Mother's Age Under 26	0.038	-0.000	-0.013	-0.206+		
Mother's Age Over 35		-0.017*	-0.019	-0.120		
# Children 0-6	0.064	-0.001*	-0.010***	-0.183**		
# Children 7-10	0.038	-0.007*	-0.010	-0.279***		
# Children 11-14		-0.038*	-0.020*	-0.213*		
Mother's Educ. Under H.S.	-0.177	-0.003	-0.014	0.222+		
Mother's Educ. College	0.140+	0.001	0.000	0.068		
Mother's Educ. Advanced		0.002	0.013	0.225+		
Mother's Occ. Professional	-0.075	0.000	0.001	0.054		
Mother's Occ. Service	0.063	-0.029***	-0.035**	-0.0277*		
Mother's Occ. Craft/Labor	0.096	-0.005	-0.054**	-0.111		
Part-time Work	-0.173*	-0.001	-0.027***	0.013		
Family Earnings (Ln)	0.041	0.008	0.018*	0.028*		
Northeast	-0.207+	-0.009*	-0.004	-0.140		
North Central	-0.155	-0.007*	-0.051***	-0.236**		
West	-0.045	-0.009*	-0.017	-0.069		
Metropolitan	0.019	0.008**	0.028**	-0.039		
Constant	-0.256*	-0.004+	-0.013	-0.360		
Log-Likelihood	-98.78	-218.00	-362.55	-147.74		

a. Because of low frequencies, the variable list for infants did not include Single, No Other Adult; Mother's Age Over 35; and # Children 11-14. The list combined M. Educ. College and M. Educ. Advanced, the coefficients for which are listed next to M. Educ. College.
b. Ns are in thousands.

+p<0.10; *p<0.05; **p<0.01; ***p<0.001.

SUMMARY OF FINDINGS ON TYPE OF CARE

The findings cited above, when reorganized according to the descriptors of families, show the strength of the theory which holds that availability and affordability are the reasons families use different kinds of care.

1. Marital status. The results suggest that mothers make more use of teenagers and other adults as child care providers, when they are present in the household. Specifically, couples more frequently use father care; single mothers living with another adult more often use grandmother care; single mothers with or without another adult use more sibling care for older children; and single mothers with no other adult in the household use more nonrelative care.

2. Hours of work. Certain child care providers are available only part-time, others may be used for full-time care. Fathers fall into the first category and may be counted on for care part-time; nonrelatives -- family day care home providers and centers -- may be used by those requiring full-time care.

3. Age of mother. Older mothers (those over 35) make less use of grandmother care and more use of sibling care than younger mothers. This, too, would seem to be a comment on the less frequent availability of grandmothers to women over 35 and the greater frequency of older children.

4. Region. Center care is used more in the South; father care in all other areas; nonrelative care in the north central states.

5. Metropolitan area. Center care is more prevalent and more often used in metropolitan areas.

   The findings on economic variables are similarly supportive of the theory.

6. Socioeconomic variables. Care by relatives is more common among those from lower socioeconomic groups; care by nonrelatives is more common among those who can more easily pay for it. From an educational standpoint, mothers with course work beyond college are less likely to use father care than all other mothers. From an occupational outlook, mothers in service occupations are more likely to use father care, and less likely to use grandmother care or center care. Mothers in craft and labor occupations are more likely to use grandmother care. From an earnings perspective, families on the lower end of the scale use more grandmother care for toddlers and older children, and less nonrelative and center care across the age groups.

7. Number of children. Families with only one child or perhaps two children are more likely to use grandmother care and center care. Families with a larger number of children are more likely to use father, care. Grandmothers may be

unwilling to care for many children; center care can be very expensive if many children are involved. The father seems the chosen individual if more children are in the family.

Lastly, there are the consistent results for the variable of race, due perhaps to the availability of different kinds of care, perhaps to the interaction of measures of availability and affordability, and perhaps to different cultural preferences.

8. Race. Black and Asian mothers more frequently use grandmothers, siblings, and center care than `bite mothers.

So, the ability to predict the kind of care a family will use through judging the availability and affordability of such care is reasonable. Lower income families may have more relatives available to them; they can certainly afford such care better than they could center or nonrelative care. The drawbacks are that the hours of care by relatives are limited; grandmothers, at least, sees often to care for only 1 or 2 children and are more likely to be caring for these children when they are infants and toddlers.

MODELING WHO PAYS FOR CARE

The notions of availability and affordability should be useful again in examining the equation describing who pays for care. If no relative is easily available (and willing to provide free care), the likelihood is a mother will use paid care. If the family can ill afford the cost of care, unpaid care (generally by relatives) is more likely to be used. And this is basically the set of findings resulting from the probit analysis of payment for care (see Table 7).

Three of the findings follow from the above discussions of availability of relatives as caregivers:

- Single mothers with no other adult in the household more often pay for care than do couples or single mothers living with another adult.

- Mothers working part-time pay for care less often than those working full-time.

- Mothers over the age of 35 pay for care less often than younger mothers.

When no other adult is living with the mother, she has no ready access to caregivers and is more likely to have to seek paid care by nonrelatives. However, other mothers may obtain unpaid care fairly easily: older mothers may elicit care from the child's older siblings; mothers working part-time may have the services of the child's father; mothers living with another adult may use that other adult.

A further finding with regard to the age of children for whom paid care is used would also seen to follow from the availability of care:

- Families with preschoolers pay more often for care; families with school-aged children pay less often for care.

Children who are in school most of the day are likely to need fewer hours of additional care than preschoolers, and relatives, neighbors or siblings may be willing to provide such hours. Older children may stay by themselves. Families with preschoolers, especially where the mother works full-time, are not likely to have the same options. The variable of region is also signficantly related to paying for care:

- Families living in the West pay for care somewhat less often than those in the South.

This is probably because families in the South are using more center care (which must be paid for) whereas families in the west are using more father care.

TABLE 7: Probit Model Predicting Payment for Care: Entire Sample of Female Guardians (Weighted N=17,639,341; Sample N=3,386)				
Predictor	**Coeff.**	**Effect**	**Std. Error**	**t-ratio**
Single, No Other Adult	0.528	0.126	0.081	6.49***
Single, Other Adult	0.164	0.044	0.099	1.66+
NonWhite	0.094	0.026	0.071	1.32
Mother's Age Under 26	0.045	0.013	0.077	0.59
Mother's Age Over 35	-0.411	-0.121	0.067	-6.16***
# Children 0-6	0.590	0.192	0.042	14.13***
# Children 7-10	-0.134	-0.038	0.046	-2.90**
# Children 11-14	-0.508	-0.143	0.056	-9.11***
Mother's Educ. Under H.S.	-0.091	-0.026	0.088	-1.04
Mother's Educ. College/Adv.	-0.001	-0.000	0.059	-0.02
Mother's Occ. Service	-0.455	-0.142	0.077	-5.94***
Mother's Occ. Craft/Labor	-0.068	-0.020	0.079	-0.86
Part-time Work	-0.462	-0.138	0.061	-7.60**
Family Earnings (Ln)	0.164	0.063	0.024	6.76***
Northeast	-0.120	-0.035	0.076	-1.58
North Central	0.025	0.007	0.067	0.38
West	-0.154	-0.046	0.078	-1.98*
Metropolitan	0.014	0.004	0.060	0.23
Constant	-1.688	-0.198	0.213	-7.94***
Log-Likelihood				-1551.6
+p<0.10; *p<0.05; **p<0.01; ***p<0.001.				

It also seems clear that families who are better able to pay for care are the ones who do, in fact, pay for such care:

- Mothers in service occupations are less likely to pay for care than those in any other occupational group; families with higher earnings are more likely to pay for care.

Mothers in service occupations very often use the free child care provided by the father, perhaps out of need, perhaps out of choice.

The hypotheses about availability and affordability therefore hold here, in who pays for care, as they did in the earlier analyses of the kind of care families used. Families without a father, grandmother or older sibling available to act as caregiver more frequently pay for care as do families with more money to pay for care.

It would be valuable at this point to be able to connect the results for type of care and payment for care, but unfortunately, the SIPP data base does not allow for this association. It asks each family how much money they spend on child care per week, but does not ask which child's care is paid for (to allow connections between type of care and payment or age of child and payment) let alone how much money is paid for each kind of care for each child for a particular number of hours (to allow calculations of hourly costs for care). It seem that nonrelative and center care are more frequently paid for, but we cannot determine the degree to which this is true or the hourly costs of each form of care.

MODELING HOW MUCH PEOPLE PAY

In this section we are interested both in the dollar amount that families pay for child care and in the percentage of their income spent on care. We may hypothesize first that both of these indicators of size of payment for child care will be related primarily to whether or not the family is purchasing care. Families using in-home care by relatives have been shown in previous Census studies to pay less money for care than families using formal care arrangements. While we cannot use SIPP data to connect the specific kind of care with payment for care, we can hypothesize that the descriptors of families likely to use the formal care arrangements of family day care and center care ought to be the descriptors of families who pay more money for care, and holding family income constant, pay a higher percentage of their income on child care. The caveat in the prediction that the percentage of a family's income spent on care will be greater among those families using formal care arrangements is due to a second hypothesis: the percentage of income spent on care will be inversely related to family income.

The data show that about 30 percent of the SIPP sample of female guardians pays for care, a percentage which may seem small. In fact, a division of families by age of children shows large differences among groups. Specifically, 57 percent of families with all children under 6 pay for child care, 49 percent of those with at least one child under 6 and one child 6 or over, and only 12 percent of families with all children over 6.

The average amount paid (among families who do pay) is $39.34 per week which represents, on average, 9.24 percent of the family's income. On the one hand, $39 may not seem like a large sum. Many fairly well-to-do families might wonder where it is possible to find child care for $39 a week when full-time care for one child in a family day care home is running $80 to $100 in their area and center care is even more expensive. It is important to recall that this sample has a large group of part-time workers, that all parts of the country do not have the price structure for care of our major cities, and that these findings on costs are very similar to those in other studies of child care. On the other hand, $39 per week represents a considerable portion of many family's weekly pay check. How to manage the cost of care may be a central concern.

Table 8 shows the results of a simple linear regression using family descriptors to predict how such people pay for care. In general, the hypothesis is substantiated that families more likely to pay for care are also those likely to pay more money for care:

- Single mothers living with another adult pay more money for care than couples;
- Families with more children aged 0 to 6 pay more money for care; families with more children from 11 to 14 pay less for child care;
- Mothers under 26 years of age pay less money for care than mothers 26 to 35 years of age;

- Mothers who work full-time pay more money for care than mothers who work part-time;
- Mothers with occupations in the labor group pay less money for care than mothers in management, professional, technical and sales occupations;
- Mothers with education courses beyond college pay more money for child care than mothers in any other educational group;
- Families with higher earnings pay more money for care than those with lower earnings.

More particularly, we see from these data on who pays for care and how much people pay that couples can be more economical than single mothers. That is, families headed by single mothers were shown to pay more often for care than did couples with comparable incomes. In this analysis of how much people pay, single mothers with another adult in the household are seen to pay $5.23 more per week, on average, than couples. So, couples not only pay less often for care, but when they pay, pay a smaller amount.

Similar results hold for other descriptors of family structure. From the results on who pays for care, we noted that families with a higher number of preschool-aged children were more likely to pay for care, but families with a greater number of school-age children were less likely to pay. On Table 8 we note that families with preschoolers must also expect to pay more money for care, families with 11- to 14-year-olds may pay less. Specifically, each additional preschool-aged child adds $10.77 to the families' weekly cost of care. Each 11- to 14-year-old subtracts $3.90 from the cost of care.

The earlier results for age of mother demonstrated that mothers over the age of 35 pay less often for care than mothers 26 to 35. This oldest group of mothers is more likely to have teen-agers available as caregivers, so they are obliged to pay for care less often. When they do pay, however, Table 8 shows that they pay about the same amount as mothers in the middle age group. The youngest group of mothers, on the other hand, pays for care about as often as mothers 26 to 34, but when they pay, the amount is, on average, $6.32 less than that paid by mothers in the middle age range. Their peers or relatives would seem more likely to be willing to provide support to these mothers in need, perhaps because they, too, are young and have the energy to care for more children, or perhaps because they understand the young families' financial constraints and are willing to help then out.

Mothers who work part-time were shown to pay for care less often than mothers working full-time. On Table 8 it is also the case that when these mothers pay for care, *they* pay less money than mothers working full-time. They are paying for fewer hours of care, so it makes sense that they should be paying a smaller amount of money.

The results of the effects of socioeconomic variables on how much people pay for care also supplement the results on who pays for care. The people who pay are those more able to pay: mothers not in service occupations and families whose earnings are higher. And it is families in higher socioeconomic groups who also pay

more money for care: those with mothers who have taken courses beyond college; those with mothers not in labor occupations; and those with higher family earnings. The causality in these relationships is not clear. Issues of supply and demand may be operating to set prices for care. Families who can afford to pay more money may seek what they consider to be higher quality care, thinking that higher cost is a part of higher quality. It may be that the cost of care is simply higher in neighborhoods where families earn more money.

TABLE 8: Regression Model Predicting How Much People Pay for Care (Weighted N=5,319,366; Sample N=1,006)

Predictor	b	Std. Error	t-ratio
Single, No Other Adult	0.89	1.96	0.46
Single, Other Adult	5.23	2.64	1.98*
NonWhite	-5.21	1.69	-3.08**
Mother's Age Under 26	-6.32	1.77	-3.58***
Mother's Age Over 35	-1.59	1.89	-0.84
# Children 0-6	10.77	1.08	9.98***
# Children 7-10	0.00	1.28	0.00
# Children 11-14	-3.90	1.59	-2.45*
Mother's Educ. Under H.S.	-2.13	2.36	-0.91
Mother's Educ. College	1.81	1.55	1.17
Mother's Educ. Advanced	8.05	2.58	3.12**
Mother's Occ. Professional	0.57	1.93	0.30
Mother's Occ. Service	-3.05	2.14	-1.43
Mother's Occ. Labor	-4.83	2.17	-2.23*
MOther's Occ. Craft	2.04	3.85	0.53
Part-time Work	-13.93	1.61	-8.68***
Family Earnings (Ln)	2.02	0.77	2.64**
Northeast	2.24	1.93	1.16
North Central	-1.12	1.60	-0.70
West	4.81	1.92	2.51*
Metropolitan	5.56	1.46	3.80***
Constant	11.99	6.47	1.85+
Adjusted R^2	0.2442		

+p<0.10; *p<0.05; **p<0.01; ***p<0.001.

The remaining three variables which significantly predict how much families pay for child care do not directly support the hypothesis that people who are more likely to use market care -- more likely to pay for care -- are also likely to pay a higher price for care:

- White mothers are no more likely to pay for child care than Nonwhite mothers, but when they pay, they pay more money.

- Families living in the West are less likely to pay for care than families living in the South, but when they do pay, they pay a higher fee than those in the southern or the north central states.

- Families living in metropolitan areas are no more likely to pay for care than those not in metropolitan areas, but when they pay, they pay a higher price.

The variable of race was not a significant predictor of payment for care; Nonwhite and White families pay for care to about the same extent. But in the regression of how much people pay for care, there is a racial difference. After factoring out the effects of education, occupation, and earnings, the analysis shows that NonWhite families, on average, pay $5.21 less per week than White families. Perhaps this is a factor relating to the kinds of care chosen more often by NonWhite families: grandmother care for school-aged children and not nonrelative care for 5-year-olds. Care by relatives does tend to be less expensive. However, NonWhite families use more center care for 1- to 4-year-olds, and this would seem to imply they would pay more money for care. Perhaps they are receiving subsidized care; there does not seem an obvious explanation of this finding.

Equally difficult to explain is the finding on part of the country. In comparison to the South, families in the West were shown to pay for care less often. But when they do pay for care, they pay more money than families in the southern or the north central states. We saw from the analysis of kinds of care that families in the West use more father care than families in the South, a finding which supports their less frequent payment for care. But it is not clear why families in the West should pay more money for care in situations where they must pay or why they pay more money than families in the north central states. Perhaps a supply study of child care can isolate regional differences in cost, providing an explanation of this finding.

The final result on families in metropolitan areas may have an explanation in the findings on differences in kinds of care used. Families in metropolitan areas were shown to use more center care than families in other areas. While these city dwellers are no more likely than other families to pay for care, because they are using center care more often, when they do pay, it seems reasonable that they will have to pay a higher price than families using other forms of care.

In sum, certain families are more likely to pay for care and to pay more money for care than others. Those who pay more money have more preschool-aged children, earn higher salaries, live in the west and/or metropolitan areas, and the mothers are more likely to work full-time and have same advanced course work. Those who pay less money are couples with more children from 11 to 14, where mothers work in labor occupations and are under 26 years of age. The families who can pay more, do; those who can afford little pay as little as possible.

Table 9 summarizes the results of a simple linear regression predicting the percentage of income spent on child care for those who do pay for care. In general, the results show that, holding earnings constant, those families who pay more money for care also pay a higher percentage of their income for child care. Those families with higher earnings pay a smaller percentage of their incomes on care. Specifically, four findings repeat the analysis of how much people paid for care:

- Single mothers (with and without another adult in the household) pay a higher percentage of their income for child care than couples;
- Families with more children 0 to 6 pay a higher percentage than families with fewer children in this age range;
- Mothers who work full-time pay a higher percentage than those working part-time;
- White mothers pay a higher percentage than NonWhite Mothers.

So, single mothers, families with more preschool aged children, White mothers, and those mothers working full-time pay more money for care. They are also paying a higher percentage of their income for this care.

TABLE 9: Regression Model Predicting of Income Spent on Care (Weighted N=5,313,169; Sample N=1,005)

Predictor	b	Std. Error	t-ratio
Single, No Other Adult	2.57	0.84	3.05**
Single, Other Adult	5.35	1.14	4.71***
NonWhite	-1.62	0.73	-2.22*
Mother's Age Under 26	-0.03	0.76	-0.04
Mother's Age Over 35	-1.45	0.81	-1.78
# Children 0-6	2.08	0.46	4.48***
# Children 7-10	0.50	0.55	0.90
# Children 11-14	-1.02	0.68	-1.49
Mother's Educ. Under H.S.	-0.91	1.02	-0.90
Mother's Educ. College	-0.06	-0.67	-0.10
Mother's Educ. Advanced	0.60	1.11	0.54
Mother's Occ. Professional	-0.36	0.83	-0.43
Mother's Occ. Service	-0.16	0.92	-0.18
Mother's Occ. Labor	0.20	0.93	0.22
MOther's Occ. Craft	-0.31	1.66	-0.19
Part-time Work	-2.16	0.69	-3.13**
Family Earnings (Ln)	-4.52	0.33	-13.70***
Northeast	-0.30	0.83	-0.36
North Central	-0.73	0.69	-1.06
West	0.34	0.83	0.41
Metropolitan	0.92	0.63	1.47
Constant	40.52	2.79	14.54***
Adjusted R^2	0.3165		

+p<0.10; *p<0.05; **p<0.01; ***p<0.001.

The final significant item refers to family earnings:

- Families with higher earnings pay a lower percentage of their income for child care than do families with lower earnings;

Families with higher earnings pay more dollars for care, but these dollars represent a smaller percentage of their income than the dollars paid by those with lower earnings. Thus, while families in lower socioeconomic groups may be able to find care which, on an absolute level, costs less per week, they may still be spending a higher percentage of their income on care than families who pay a higher weekly figure for care.

These regression equations can be useful in predicting the amount different groups of families will need to pay for care. For example, the equation predicting the dollar amount paid weekly for care can be used to show the different amounts paid by families with different levels of earnings. Table 10 lists annualized earnings from $12 to $70,000, estimates of annual child care costs, and the estimated percent of income spent on child care. It uses the following assumptions about the family: that the family is a couple living in the north central states in a metropolitan area; and that the mother is White, 26- to 35-years-old, with a high school diploma, employed in a service occupation, and working full-time. If this family pays for child care, the equation estimates that they pay from $669 (if they have essentially no earnings) to $1,545 (if their annualized earnings are $70,000). That is, families with higher earnings do pay more dollars for care, but the dramatic increase in payments occurs between families earning essentially nothing and those earning an annualized income of $5,000. The difference between the child care payments of those earning $5,000 and those earning $70,000 is less than $300.

TABLE 10: Estimated Child Care Costs Across Families with Different Earnings

Annualized Earnings	Annualized Payment for Child Care	Percent of Income Spent on Child Care
$12	$669	41%
5,000	1,278	27
10,000	1,349	10
15,000	1,389	8
20,000	1,419	7
30,000	1,459	5
40,000	1,488	4
50,000	1,511	3
60,000	1,530	2
70,000	1,545	1

The more dramatic differences shown on the table are in the percentages of income spent on child care across the different family groups. A family earning a token $12 a year is paying about 41 percent of its entire income on child care. A family earning $5,000 per year is spending a hearty 27 percent on child care, but families with higher earnings spend considerably smaller budget shares on such care. Families earning $10,000 per year are estimated to spend 10 percent of their income on child care; families earning $30,000 are spending 5 percent; families earning $70,000 are spending only 1 percent.

Additional tables of policy relevance may be constructed. For instance, it is possible to select the set of families most likely to require public assistance and predict the amount they will pay for care, not counting subsidies. Table 11 shows one such analysis. It displays the average cost for care for Nonwhite mothers who are under the age of 26 years, who have not completed high school, who are city dwellers training for service occupations and currently earning the token amount of $1 a month (we assume they are subsidized for the remainder of their income). To determine the amount paid by White mothers, add $5 to the amount shown on the table.

TABLE 11: Average Cost of Care for Groups of Mothers						
	Single Other Adult		Single No Other Adult		Couple	
	P-T*	F-T	P-T	F-T	P-T	F-T
1 CHILD						
Northwest	$5	$19	$1	$15	0	9
North Central	2	16	0	11	0	6
West	8	22	3	17	0	12
South	3	17	0	13	0	7
2 CHILDREN						
Northwest	16	30	12	26	6	20
North Central	13	27	8	22	3	17
West	19	32	14	28	9	22
South	14	28	9	23	4	18
* P-T means part-time; F-T means full-time.						

To be useful to program planners, assumptions must be made about the relative frequency of occurrence of families in the new program. Suppose, for example, that planners from one of the western states are working on an initiative for young mothers first applying for AFDC, and they wish to estimate the amount these mothers would pay for child care, if they entered the work force or an education/training program on a part-time basis. If the mother is NonWhite, she is estimated to pay from $0 per week (if she is married) to $8 (if she is single and living with another adult) for child care. White mothers pay from $5 per week (if married) to $13 (if single and living with another adult.

There is one significant caveat to the use of this information on cost of care: we only know how much parents say they pay for care, we do not know the total cost of care. Child care for low income families may be subsidized by state or federal monies; child care for families in certain businesses may be subsidized by the company; care by relatives may be at a lower charge, essentially being subsidized by the relative. The numbers on the table are either the total cost of child care or the additional amount paid by families above and beyond a subsidy.

A third use of the data on cost relates the cost of child care to tax laws. At the time of this SIPP panel and currently, there are limits to the amount of money parents can deduct as a child care tax credit. For one child, the maximum deduction is $2400; for two or more children, it is $4800. Table 12 shows the distribution of families in SIPP by number of children and annualized amount spent on child care. The data suggest that 24 percent of families with one child spend more than the maximum of $2400 ($48 per week), but only 5 percent of families with two children and 7 percent of families with more than two children exceed the maximum of $4800 ($96 per week). So, the tax credit for child care has been very useful in allowing tax relief for the major part of a family's child care expenditure.

TABLE 12: Amount Paid for Care by Number of Children in the Family (Percent of Families in the Row)			
No. of Children in Family	**Up to $2400 (N=3,657,932)**	**$2401-4800 (N=1,416,389)**	**Over $4800 (N=204,841)**
1	76	22	2
2	63	32	5
3	67	26	7
4 or more	66	27	7

DISCUSSION

The theory that the availability of child care providers and the affordability of different care arrangements together predict the kinds of care families use has been substantially supported by this analysis of the SUP data. Families with a father or a grandmother in the home are more likely to use in-home care by these relatives. Families without an adult in addition to the mother are less likely to use such care. Father care is more frequent when the mother works part-time; nonrelative care is more frequent when the mother works full-time. Care by relatives is more common among families in lower socioeconomic groups; care by nonrelatives is more frequent among those families with higher earnings. In addition, we have seen that the theory helps predict the families who pay for care. Those who do not have relatives available as caregivers and those who can better afford to pay for care are generally the families who do pay for care.

Though this theory has been useful to explain the majority of results, there were two sets of variables which did not seem to fit. First, there were regional differences in usage of different kinds of care. Center care was found to be more prevalent in the South; father care was' more prevalent in all other areas; and in-home care by a nonrelative was more frequent in the north central states. This seems partly an issue of availability since the supply of center care is greater in the South. However, we do not have data which demonstrate regional differences in the supply of family day care homes to show that the different patterns in the usage of this form of care is due to a difference in supply. And we do not know what other issues contribute to regional differences. Perhaps they are due to differences in the cost of these formal care arrangements or in parental attitudes toward formal types of care. A supply/attitude study which also asked about the costs of the various kinds of care could add valuable insight into the reasons for these SIPP results.

The second set of results not fully explained by the theory is the set dealing with race. Holding all socioeconomic variables constant, Black and Asian mothers more frequently use care by grandmothers, siblings and in centers than White mothers. It may be the case that Black and Asian families live closer to grandmothers, so that their supply of relative care is greater than that of White families. Or, it may be that an interaction among other variables contributes to the differences in the use of care arrangements. For instance, it may be that more Black families live in metropolitan areas in the south than White families and that this combination of descriptors explains their increased use of center care. It also may be that ethnic preferences (or other unmeasured variables) contribute to the different usage patterns.

One important caveat on the results of this study is that the SIPP asks about patterns of use of child care providers, not about a family's choice of care providers. We do not know from the data if people are actively choosing a particular form of care or if they are "forced" into it by lack of availability of other forms of care or lack of finances to afford market care. The relevance of this difference is evident, for example, in the use of

relative care. Many fathers and grandmothers are caring for infants and toddlers, but how many more families would choose these people as caregivers if they were available?

This use of care by close relatives may be a positive choice by families or it may be the result of a lack of ability to choose a form of paid care. If the mother is not available, she may well actively choose as her substitute someone who will raise her children in the same way she would. The most welcome candidates are probably those relatives close to her who know and share her values. The fact that father care crosses income lines suggests that it is often `chosen as a positive alternative, rather than because finances do not allow another choice. The fact that grandmothers are chosen more often by families in lower income groups may be because they are more likely to live in close proximity to their children than are grandmothers of higher income families. The fact that other relatives are used more often by the lowest income groups may be because more of these people are available for child care than relatives of higher income groups, both because they are more likely to live nearby and they are less likely to be fully employed outside of the home. Thus, there is a good argument emerging from the data that relatives are a first choice for caregivers by families in all income groups (at least for the youngest groups of children).

There is a second element of preference which may be built into the data. For 3- to 5-year-old children, there is more center care than for other ages. It may well be that this is parental preference. The question then becomes: how many more preschoolers would be in center care if parents could afford such care (or were subsidized)?

For Federal program planners this difference between usage patterns and patterns of parental choice must be taken seriously before SIPP data are used to predict child care patterns among families who will participate in any new Federal project. Per example, planners of work/welfare programs may be pleased to see that relatives (generally unpaid) care for about half of the young children of working mothers and that only about 30 percent of families pay for care. They might be tempted to assume that most families who will enter their program will not require child care, that they will handle arrangements on their own and not need a subsidy for care. This assumption ignores the important fact that we do not know the extent to which the different forms of care will be chosen, should families be allowed a choice. We assume that a choice in care arrangement and the availability of a subsidy will change the percentage using different kinds of care and, consequently, the percentage who 'will pay for care. What we do not know is exactly how these patterns of usage will change. (In a second paper, "Child Care Used by Working Warren in the AFDC Population: An Analysis of the SIPP Data Base",[4] Brush deals with this issue in more detail.)

[4] Available at: http://aspe.hhs.gov/daltcp/reports/ccbyww.htm.

The SIPP has provided results which seem intuitively reasonable, as well as supporting the proposed theory. It has been argued that the availability and affordability of care are the major determinants of the use of different arrangements of child care and of payment for care. The next step might be to connect these data with more information on the quality of these sorts of care, on parental preferences for type of care for their children of different ages, and on the costs of the different types of care.

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