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ABSTRACT

The effects of adolescent parenthood upon certain outcome measures reflecting changes in aspirations, attitudes, and well-being were investigated using data from the National Longitudinal Study of High School Class of 1972. Analyses were computed for expected educational attainment; self-esteem; locus of control; orientation toward work, family, and community; satisfaction with career progress; number of children expected; homemaker aspirations; and welfare dependency. Results indicate that late adolescence parents differed considerably from nonparents on many measures. Differences decreased when allowances were made for differential backgrounds, and when comparisons were made between married parents and married nonparents. Among married women, early parenthood was associated with lower work orientation measures and a greater tendency to select homemaking. Mothers indicated less satisfaction with career progress, a reflection of the relationship between dissatisfaction and time of the first birth. Adolescent parents expected to have slightly larger families than nonparents. An association between timing of childbirth and welfare dependency was also found. (Author/NRB)

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CONSEQUENCES OF PARENTHOOD IN LATE ADOLESCENCE: FINDINGS FROM THE NATIONAL LONGITUDINAL STUDY OF HIGH SCHOOL SENIORS

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PREFACE

This Note is a revision of a paper presented at the annual meeting of the Population Association of America, Philadelphia, April 26-28, 1979. It reports on research supported by Contract No. NO1-HD-72819, awarded by the National Institute of Child Health and Human Development, U.S. Department of Health, Education, and Welfare. The authors thank Will Harriss and Arleen Leibowitz of Rand for comments on earlier drafts.

SUMMARY

This is a study of the near-term consequences of parenthood in late adolescence (approximately 18 to 19 years of age). The research is based on the National Longitudinal Study of the High School Class of 1972 (hereafter, NLS), a panel study of over 22,000 seniors in the Class of 1972 who were the subjects of follow-up surveys in 1973, 1974, and 1976.

Outcome measures analyzed here include: expected educational attainment; self-esteem; locus of control; orientations toward work, family, and community; satisfaction with career progress; number of children expected; homemaker aspirations; and welfare dependency. The effects of early marriage and parenthood are assessed by comparing outcome measures across categories of respondents classified according to when they initially entered the parenthood role as well as when they first became married.

Our analysis indicates that the late adolescent parents differ considerably from the nonparents on many of these outcome measures. These differences shrink, however, when one allows for differences in background characteristics that are related with the outcome measures; and they shrink even further when one compares the outcome measures for married parents with those for married nonparents who were married at about the same time.

Among married women, there is a clear shift in career aspirations associated with early parenthood. This shift is marked both by lower work orientation measures and a higher tendency to select homemaking as the most likely career at age 30. Among married women, the mothers

indicate less satisfaction with their career progress than the women without children, and the extent of dissatisfaction is related to timing of first birth. On average, adolescent parents expect to have slightly larger families than the nonparents, and there is an association between timing of childbirth and welfare dependency that merits further investigation.

For some outcome measures (e.g., educational aspirations) there is a measurable effect associated with early marriage, but the married parents do not seem to differ appreciably from the married nonparents. It is not clear that this reflects an absence of parenthood effects. What we may be detecting is an effect due to economic exigencies and other circumstances associated with early family formation, whether or not the young couple have children. Since many adolescent marriages are instigated by premarital pregnancy, the effects of early family formation among these adolescents may reflect the consequences of adolescent parenthood.

CONSEQUENCES OF PARENTHOOD IN LATE ADOLESCENCE: FINDINGS FROM THE NATIONAL LONGITUDINAL STUDY OF HIGH SCHOOL SENIORS

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I. INTRODUCTION

The 1960s and 1970s have been marked by shifts in social attitudes toward adolescents' involvement with reproduction. More of the adolescent population has become sexually active, with increased exposure to the risk of pregnancy. Previously relegated to a twilight zone of stigma and hastily resolved through marriage, teenage pregnancy has come to be acknowledged as an event that entails important individual and societal choices. The issues related to these choices--teenage contraception, sex education, adoption, single parenthood, availability of and access to legal abortion--have aroused public controversy and debate. Although research has helped to point the way toward more effective prevention of unintended childbearing, such intervention has raised conflicting and largely unresolved moral issues within American society: What kind of intervention? By whom? In whose interest? However these issues are resolved, it is apparent that involvement

with reproduction during adolescence is a matter of public concern; and because such involvement cannot be avoided entirely, its aftermath necessarily is a matter of public concern.

Although the overall number of adolescents (and perhaps even of adolescent parents) will decline slightly in the years ahead, the contemporary adolescent appears to be more vulnerable than before to the risks that accompany early parenthood.

Entry into parenthood is a critical life event, an abrupt transition to an adult role. It is all the more abrupt for a teenage mother or father, who often embodies a confusing and contradictory mixture of child, adolescent, and adult (Bacon, 1974). In a context of conflicting societal influences, the young person confronts an array of contingencies and is vulnerable to many risks.

A considerable body of research has examined the often disordered family careers that follow a teenage birth and its ensuing problems, which often translate into demands for social services. While furnishing important insights, the evidence often carries inherent limitations.

First, many studies are based on data that do not refer to contemporary adolescents, but to contemporary adults who became adolescent parents a number of years ago in a different social atmosphere. The norms that prevailed then regarding pregnancy and parenthood outside marriage, and the lower reliability of contraception, may have affected outcomes differently from the way they do now. Such studies therefore may be misleading if relied on blindly as a guide to the future outcomes of contemporary adolescent parenthood.

Second, many studies focus exclusively on adolescent <u>parents</u> and do not include nonparents. Consequently, they cannot distinguish the

effects of adolescent parenthood from the effects of adolescence itself, because they do not compare the two groups.

Third, where such comparisons are possible, the data often lack sufficient background information on preexisting socioeconomic and attitudinal differences between individuals who subsequently became parents and those who did not. Without such information, interpretations necessarily remain tentative, since parenthood may be only spuriously related to the effect in question.

This paper focuses on the near-term consequences of parenthood in late adolescence (approximately 18 to 19 years of age). Our research is based on the National Longitudinal Study of the High School Class of 1972 (hereafter, NLS), a large panel study of over 22,000 adolescents who are now in their early twenties and have begun to experience many of these near-term consequences. Certain features of this data set, detailed ahead, enable us to overcome some of the deficiencies mentioned above.

II. DATA AND METHODOLOGY

NLS DATA BASE

The NLS data have been collected as part of a large-scale longitudinal survey effort by the National Center for Educational Statistics designed to provide information on high school students as they move into early adulthood. The NLS was originally motivated by a need for data to analyze critical issues in educational policy, but it has taken on much broader significance as a data base that can support policy analysis on a variety of issues.

The data base provides a voluminous file of information on 22,652 young women and men who were surveyed initially as high school seniors in the spring of 1972. After this base-year survey, three follow-up surveys were administered in the fall of 1973, 1974, and 1976. Although the response rates* for each survey were high, only 62 percent of the subjects responded to all four surveys.

Valuable as it is as a source of information on adolescent parenthood, the NLS has certain important limitations:

- Exclusion of high school dropouts: The NLS sample includes only those adolescents who were still in high school in the spring of their senior year, thereby excluding all high school dropouts--many of them undoubtedly adolescent parents.

*Response rates are over 88 percent on each of the three follow-up surveys. For documentation of the NLS data tape, see Levinsohn et al (1978).

- Missing values: Despite high response rates on each survey wave, the problem of missing values is pervasive on the NLS since many respondents did not fully complete their questionnaires.

Offsetting these limitations are the following advantages:

- Large sample size: The NLS contains 1248 respondents who were parents by October 1973 and 1331 others who became parents during the following 12 months.
- Timeliness: Adolescent parenthood referred to in the NLS occurred in the early 1970s, not in some indefinite earlier period, as is the case with retrospective data sets.
- Availability of comparison groups: It is possible to compare, for example, parents with nonparents, younger parents with older parents, and married parents with married nonparents.
- Richness of content: The NLS contains numerous background measures that are pertinent to a study of parenthood's consequences, including socioeconomic status (SES), race, ability, and religion.

Information on parenthood status was collected on each of the three follow-up surveys but not on the base-year survey. By responding completely and consistently on only the three follow-up surveys, then, a person would disclose how many children he or she had at each of three points in time.*

*A total of 83.9 percent of the sample responded to all three of the follow-up surveys. Most of these respondents, of course, failed to complete some items on the surveys.

Claiming at least one child would qualify a respondent as having entered into the parenthood role in a sociological sense; whether the respondent was the biological parent; however, cannot be determined at any time point. The two certainly should not be regarded as equivalent.*

Procedures we developed for estimating changes over time in the marital and parenthood statuses of the NLS respondents led to the identification of 5071 parents as of October 1976, some 52 months out of high school.** These parents were classified according to when they initially entered the parenthood role as well as when they first became married. Late adolescent parents are those who were parents by October 1973, i.e., 16 months after the end of high school, a point at which most respondents had recently turned 19. For purposes of comparison, we also distinguish early adult parents, who commenced parenthood during the period from November 1973 to October 1974, i.e., between the 16th and 28th month after high school, or roughly between 19 and 20 years of age; and adult parents, who commenced parenthood during the period from November 1974 to October 1976, i.e., between the 28th and 76th month after high school, or roughly between 20 and 22 years of age.

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*For example, childbearing does not turn into parenthood if the child is put up for adoption, nor does parenthood imply childbearing where the child has been adopted. Conversely, claiming no children does not rule out the possibility that the respondent once bore a child but relinquished it for adoption.

**Information on parenthood and marital status is sometimes ambiguous, inconsistent, and even missing on the NLS. Procedures devised to utilize the available information are described in Blaschke, et al (1979). A descriptive profile that affords comparisons among parents and nonparents, as well as certain benchmark comparisons for validation purposes, is furnished in Haggstrom and Morrison (1979).

OUTCOME MEASURES ANALYZED

The outcome measures to be analyzed here represent a selection from a broader set being analyzed in our research for NICHD. The results reported ahead relate to the variables listed below. Unless otherwise specified, the outcomes are measured on all four surveys.

Expected educational attainment: number of years of education expected, estimated from responses to the question, "As things stand now, how far in school do you think you actually will get?" Values range from 12 ("high school only") to 20 ("Ph.D., M.D., or equivalent").

Self-esteem: average coded response on a five-point scale to the following statements:

1. I take a positive attitude toward myself.
2. I feel I am a person of worth, on an equal plane with others.
3. I am able to do things as well as most other people.
4. On the whole, I'm satisfied with myself.

Scoring: 1--"Disagree strongly," ..., 5--"Agree strongly."

Locus of control: average coded response on a five-point scale to the following statements:

1. Good luck is more important than hard work.
2. Every time I try to get ahead, something or somebody stops me.
3. Planning only makes a person unhappy since plans hardly ever work out anyway.
4. People who accept their condition in life are happier than those who try to change things.

Scoring: 1--"Agree strongly," ..., 5--"Disagree strongly."

Work, family, and community orientation: measures derived from the coded responses (1--"Not important," 2--"Somewhat important," 3--"Very important") to questions asking the respondent to rate the importance of:

A. Being successful in my line of work.
B. Finding the right person to marry and having a happy family life.
C. Having lots of money.
D. Having strong friendships.
E. Being able to find steady work.
F. Being a leader in my community.
G. Being able to give my children better opportunities than I've had.
H. Living close to parents and relatives.
I. Getting away from this area of the country.
J. Working to correct social and economic inequalities.

The work orientation measure is the average of the coded responses for items A, C, and E. Community orientation uses the average for items F, G, and J. Family orientation averages over B, H, and the negative of I.

Satisfaction with career progress (1976 survey only): coded response to the question: "How satisfied are you with the progress you have made toward doing the kind of work you expect to be doing when you are 30 years old?" Coding: 1--"Very dissatisfied," ..., 4--"Very satisfied."

Number of children expected (1973 and 1976 only): responses to the question, "How many children altogether do you eventually expect to have?" The response "four or more" is coded as "4" in 1973, and "eight or more" is coded as "8" in 1976.

Homemaker aspirations: indicator (zero-one) variables for females who expect to be homemakers or housewives at age 30.

Welfare dependency (1976 only): indicator variables (one for 1975, another for 1976) for those respondents who received public assistance or welfare payments in 1975 or 1976.

The means, standard deviations, and counts for these outcome measures are given in Table 1. The variation in the counts across years results primarily from differences in the overall response rates across waves.*

Many of the outcome variables were measured on all four surveys so that, at least in theory, one could analyze the individual responses over time to determine if changes in the outcome measures coincide with changes in parenthood status. However, the effects of parenthood appeared to be quite small for most of the above outcome measures. Therefore, it would be difficult, if not impossible, to determine whether the changes over time in the individual's outcome measures reflect the effects of parenthood, marriage, a multitude of other possible causes, or just randomness due to measurement errors, coding errors, and so forth. Thus, comparisons of measures taken before and after the individual becomes a parent are not useful in analyzing the effects of parenthood unless one takes into account (a) other events that might cause the apparent changes, (b) time trends in the measures that affect other adolescents with similar characteristics, and (c) differences in the background characteristics of the individuals that might indicate alternative explanations for observed changes in the outcome measures.

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*The relatively low responses to questions about educational expectations and homemaker aspirations on the 1972 survey apparently resulted from confusing instructions for answering these questions.

Table 1

SAMPLE MEANS AND STANDARD DEVIATIONS
OF THE OUTCOME MEASURES

Outcome measure	Year	Females			Males		
		Mean	s.d.	n	Mean	s.d.	n
Expected educational attainment	1972	14.41	1.99	6319	14.89	2.07	5962
	1973	14.28	2.16	10133	14.87	2.36	9619
	1974	14.42	2.25	9698	14.94	2.37	9099
	1976	14.78	2.40	9461	15.17	2.46	9137
Self-esteem	1972	3.89	0.67	8365	3.96	0.63	8217
	1973	4.10	0.56	10356	4.14	0.54	9744
	1974	4.15	0.60	10019	4.24	0.57	9399
	1976	4.21	0.60	9921	4.32	0.56	9403
Locus of control	1972	3.79	0.73	8360	3.65	0.74	8204
	1973	3.86	0.68	10352	3.78	0.67	9728
	1974	3.86	0.70	10006	3.78	0.72	9385
	1976	3.91	0.70	9917	3.86	0.72	9398
Work orientation composite	1972	2.46	0.36	8366	2.59	0.36	8228
	1973	2.36	0.39	10374	2.51	0.36	9763
	1974	2.36	0.40	9983	2.50	0.37	9369
	1976	2.35	0.41	9937	2.52	0.35	9416
Family orientation composite	1972	0.95	0.40	8257	0.91	0.41	8083
	1973	1.05	0.36	10209	1.00	0.37	9599
	1974	1.07	0.37	9894	1.01	0.37	9278
	1976	1.09	0.36	9826	1.02	0.36	9299
Community orientation composite	1972	2.14	0.43	8353	2.13	0.47	8210
	1973	2.04	0.43	10358	2.07	0.47	9739
	1974	2.00	0.43	9979	2.03	0.47	9359
	1976	1.96	0.43	9935	2.01	0.47	9409
Satisfaction with career progress	1976	3.05	0.81	9850	3.03	0.80	9366
Expected number of children	1973	2.25	1.03	10010	2.08	1.09	8910
	1976	2.25	1.17	9880	2.24	1.27	9258
Homemaker aspirations	1972	0.058	0.234	6587			
	1973	0.245	0.430	10005			
	1974	0.251	0.434	9837			
	1976	0.237	0.425	9841			
Welfare dependency	1975	0.040	0.197	8104	0.016	0.125	7659
	1976	0.048	0.214	7911	0.018	0.133	7453

SOURCE: Tabulated from the NLS data base.

METHODOLOGY FOR ASSESSING EFFECTS

One of our main concerns has been to distinguish the consequences of adolescent parenthood from those associated with early marriage. Among adolescent parents, the marriage date is often closely linked to the date of pregnancy, making it difficult to ascertain whether observed changes over time among adolescent parents are due to parenthood or to other factors associated with early marriage. Another concern is to determine the extent to which changes in the outcome measures are related to the timing of adolescent parenthood and/or early marriage.

Fortunately, the large sample size of our data set enabled us to categorize respondents into relatively homogeneous groups by sex, marriage date, and timing of entry into parenthood, and still have a sufficient number of cases within each group. The group means can then be compared over time and across groups, adjusting for differences among the groups in background characteristics that are correlated with the outcome variables.

For purposes of this study, the NLS respondents of each sex were first classified by parenthood and marital status as of October 1976. The parents were further classified by the timing of entry into parenthood, and the "ever married" respondents were classified similarly by their marriage dates. The specification of the cells of this classification scheme, as well as the frequency counts, are given in Table 2.

Table 2

FREQUENCY COUNTS OF PARENTHOOD AND MARITAL STATUS CATEGORIES

Parenthood Status as of October 1976	Total	Marital Status, 10/76			Date of First Marriage				
		Single	Ever Married	Unknown	Before 6/72	6/72-10/73	11/73-10/74	11/74-10/76	Unknown
FEMALES									
Nonparents	7182	4332	2822	28	94	683	618	1411	16
Parents	3123	429	2656	38	370	1394	529	351	12
Timing of first child:									
Before 10/73	887	111	759	17	248	429	47	32	3
11/73-10/74	836	147	669	20	54	442	125	47	1
11/74-10/76	1287	171	1115	1	51	445	344	272	3
Unknown	113	0	113	0	17	78	13	0	5
Unknown	1031	0	150	881	13	93	39	1	4
Total	11336	4761	5628	947	477	2170	1186	1763	32
MALES									
Nonparents	7876	5801	2045	30	10	288	429	1306	12
Parents	1948	239	1680	29	135	698	447	390	10
Timing of first child:									
Before 10/73	361	24	334	3	107	206	14	5	2
11/73-10/74	495	80	390	25	7	235	118	30	0
11/74/10/76	994	135	858	1	8	196	297	355	2
Unknown	98	0	98	0	13	61	18	0	6
Unknown	1343	0	97	1246	1	47	38	10	1
Total	11167	6040	3822	1305	146	1033	914	1706	23

SOURCE: Tabulated from the NLS data base.

Our statistical procedures for comparing the outcome measures across these categories of respondents are based upon two premises: (1) The "effects" of marriage and/or parenthood vary from individual to individual depending on a multitude of factors, many of which are unknown; and (2) these effects can be estimated for a particular individual by taking the difference between the individual's outcome measures and the values of those measures that one would predict for individuals in a suitably chosen "control group" with similar background characteristics.

Appendix A describes a multivariate analysis of covariance model that embodies these assumptions. It is implicit in this model that the effects of marriage and parenthood are defined as deviations from the pattern for similar individuals in a control group. However, it is not clear in this context what the control group should be. For example, in considering the effects of parenthood, should the control group consist of all nonparents at some point in time? At what point in time? Should single parents be compared with only single nonparents, and married parents only with married nonparents? Should parents as of October 1973 be compared with those who became parents in the following year?

Our tentative solution to this quandary is to provide summary statistics that will enable readers of our findings to decide for themselves what the appropriate comparison group will be. Although our methodology is best suited to drawing comparisons with the group of single nonparents as of October 1976, other intergroup comparisons are readily made.

IV. RESULTS

Our findings will be presented using tables that provide comparisons of the outcome measures over time and across categories of respondents determined by timing of marriage and entry into parenthood.

In carrying out this analysis, we were primarily interested in the respondents who became parents before October 1973 (the "late adolescent parents"). A detailed analysis of this group's responses to certain items on the 1972 and 1973 surveys indicated that some of these respondents probably were parents before June 1972, i.e., while still in high school. We attempted to isolate these cases because (a) the 1972 measures of their expectations, aspirations, and attitudes would already be affected by early parenthood, and (b) this group of earlier parents would provide an opportunity to study the consequences of early parenthood for a special group that, unlike many teenage parents, did not drop out of high school.

This led us to create a subcategory of respondents referred to in the tables below as "probable parents as of June 1972." These respondents were identified using criteria that may, in fact, have led to misclassifying the timing of parenthood in a few cases. For example, female parents as of October 1973 were classified as being probable parents as of June 1972 if (a) they had two or more children in October 1973, or (b) they had a single child in October 1973 and

indicated that they either had one or more dependents on the base year questionnaire or were married before January 1972. Thus, this is a well-defined subset of female parents, whether or not the title "probable parents as of June 1972" applies in all cases.

EFFECTS ON EDUCATIONAL ASPIRATIONS

The timing of fertility is known to be related to female educational attainment. Impending parenthood imposes conditions and responsibilities that prompt pregnant girls to drop out of school. Once parenthood has commenced, persons who aspire to more education often postpone further schooling indefinitely and lower their educational aspirations.

Previous studies have shown that: (1) the teenage mother completes fewer years of schooling than her nonparent peers (Waite and Moore, 1978; Moore and Hofferth, 1978; Trussell, 1976); (2) the younger the age at first birth, the fewer years of schooling completed (Bacon, 1974; Trussell, 1976; Waite and Moore, 1978); and (3) the educational deficit associated with an early first birth is less for young black women than for their white counterparts (Card, 1977; Waite and Moore, 1978). Although the evidence leaves little doubt of these relationships, how they should be interpreted is less certain.

The uncertainty here arises from the fact that teenage parents are known to differ in many respects from other teenagers, and they probably differ in other ways that are difficult, if not impossible, to measure. If so, estimates of the effects of parenthood, derived from cross-sectional analyses that attempt to compare teenage parents with their

peers, may be grossly inflated, no matter how the analysts try to control for intergroup differences.

Tables 3 through 5 provide summary statistics for estimating the average effects of early marriage and parenthood on education aspirations for individuals in various marital/parenthood status categories. Table 3, which simply reports the raw means for the various categories, reveals how mean responses within categories change over time. However, since the NLS sample is not a representative sample (schools in low-income areas and schools with high proportions of minority students were oversampled) and since the groups differ considerably on background variables that are known to be related to educational aspirations, the raw means cannot be used to draw comparisons across categories.

Table 4 attempts to remedy these problems by providing "adjusted means" corresponding to the raw means in Table 3. These adjusted means are analogous to the adjusted means sometimes reported in conjunction with analysis of covariance, i.e., the adjusted means "control" for differences across the groups on a set of independent variables that appear to be relevant in explaining differences among individuals on the outcome variables.

The independent variables that were used in analyzing the educational aspirations variables in Tables 3, 4, and 5 were:

Racial and ethnic origin indicator variables (black, Hispanic, American Indian, Oriental, other minority)

Regional indicator variables (Northeast, South, West)

Scholastic aptitude (the sum of four standardized test scores on vocabulary, reading, letter groups, and mathematics)

Table 3

MEAN VALUES OF EXPECTED YEARS OF EDUCATIONAL ATTAINMENT BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means				Sample Sizes			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	15.12	15.17	15.39	15.80	2624	4021	3982	4128
Ever Married								
After 10/74	14.66	14.55	14.66	14.87	856	1300	1302	1307
11/73-10/74	14.17	13.75	13.88	14.12	344	580	563	567
6/72-10/73	13.59	13.37	13.54	13.84	401	609	610	624
Before 6/72	12.98	13.07	13.60	13.83	42	87	83	84
Parents								
Single	13.97	13.89	13.91	14.38	154	391	378	403
Ever Married								
After 10/74	14.09	13.90	13.86	14.13	177	316	316	312
11/73-10/74	13.65	13.38	13.20	13.54	285	484	472	454
6/72-10/73	13.27	12.88	12.98	13.30	718	1247	1240	1211
Before 6/72	12.83	12.89	12.98	13.19	159	337	333	317
Timing of First Child								
After 10/74	13.66	13.41	13.34	13.63	662	1161	1145	1159
11/73-10/74	13.52	13.20	13.29	13.70	404	774	755	679
Before 10/73	13.17	13.07	13.13	13.47	396	861	802	770
Prob. 6/72-10/73	13.20	12.99	13.07	13.42	262	594	553	532
Prob. bef. 6/72	13.11	13.24	13.27	13.59	134	267	249	238
MALES								
Nonparents								
Single	15.30	15.37	15.45	15.68	3339	5244	5168	5495
Ever Married								
After 10/74	14.91	14.87	14.88	14.97	739	1159	1140	1216
11/73-10/74	14.57	14.37	14.36	14.59	246	376	374	401
6/72-10/73	14.00	13.89	13.94	14.14	136	237	241	266
Before 6/72	12.83	14.50	14.30	14.33	6	10	10	9
Parents								
Single	14.15	14.49	14.44	14.67	97	205	200	226
Ever Married								
After 10/74	14.22	13.99	14.03	14.24	185	332	332	353
11/73-10/74	13.87	13.74	13.54	13.90	219	386	382	389
6/72-10/73	13.58	13.40	13.37	13.68	294	621	580	602
Before 6/72	12.94	13.36	13.21	13.71	54	120	101	119
Timing of First Child								
After 10/74	14.06	13.82	13.78	14.06	465	878	843	898
11/73-10/74	13.58	13.68	13.64	14.00	209	441	437	405
Before 10/73	13.42	13.59	13.51	13.83	142	350	294	312
Prob. 6/72-10/73	13.57	13.65	13.57	13.86	110	277	237	245
Prob. bef. 6/72	12.91	13.34	13.28	13.75	32	73	57	67

Table 4

ADJUSTED MEAN VALUES OF EXPECTED YEARS OF EDUCATIONAL ATTAINMENT BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Adjusted Means				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	15.12	15.17	15.39	15.80	0.03	0.03	0.03	0.03
Ever Married								
After 10/74	14.95	14.88	14.98	15.19	0.05	0.05	0.05	0.05
11/73-10/74	14.73	14.38	14.51	14.74	0.08	0.07	0.08	0.08
6/72-10/73	14.49	14.35	14.51	14.82	0.07	0.07	0.08	0.08
Before 6/72	14.21	14.37	14.89	15.17	0.22	0.18	0.20	0.21
Parents								
Single	14.79	14.81	14.77	15.34	0.12	0.10	0.10	0.11
Ever Married								
After 10/74	14.89	14.81	14.76	15.04	0.11	0.10	0.10	0.11
11/73-10/74	14.64	14.48	14.29	14.65	0.09	0.08	0.08	0.09
6/72-10/73	14.41	14.14	14.22	14.57	0.06	0.05	0.06	0.06
Before 6/72	14.08	14.26	14.32	14.58	0.11	0.10	0.10	0.11
Timing of First Child								
After 10/74	14.60	14.45	14.38	14.69	0.06	0.05	0.06	0.06
11/73-10/74	14.61	14.40	14.48	14.93	0.07	0.07	0.07	0.08
Before 10/73	14.27	14.27	14.31	14.70	0.08	0.06	0.07	0.08
Prob. 6/72-10/73	14.31	14.21	14.27	14.66	0.09	0.07	0.08	0.09
Prob. bef. 6/72	14.15	14.39	14.38	14.77	0.12	0.11	0.12	0.13
MALES								
Nonparents								
Single	15.30	15.37	15.45	15.68	0.03	0.03	0.03	0.03
Ever Married								
After 10/74	15.24	15.24	15.26	15.35	0.05	0.06	0.06	0.06
11/73-10/74	15.14	14.98	14.99	15.24	0.09	0.10	0.10	0.10
6/72-10/73	15.01	14.98	15.06	15.29	0.13	0.12	0.12	0.12
Before 6/72	13.99	15.73	15.49	15.56	0.60	0.59	0.58	0.65
Parents								
Single	14.84	15.22	15.06	15.31	0.16	0.14	0.14	0.14
Ever Married								
After 10/74	15.14	15.01	15.02	15.25	0.11	0.10	0.10	0.11
11/73-10/74	14.96	14.92	14.70	15.09	0.10	0.10	0.10	0.10
6/72-10/73	14.73	14.66	14.63	14.96	0.09	0.08	0.08	0.08
Before 6/72	14.39	14.95	14.80	15.32	0.20	0.17	0.19	0.18
Timing of First Child								
After 10/74	15.02	14.85	14.80	15.10	0.07	0.07	0.07	0.07
11/73-10/74	14.67	14.86	14.78	15.17	0.10	0.09	0.09	0.10
Before 10/73	14.60	14.90	14.80	15.15	0.13	0.10	0.11	0.11
Prob. 6/72-10/73	14.66	14.87	14.75	15.08	0.14	0.11	0.12	0.13
Prob. bef. 6/72	14.41	14.99	14.91	15.39	0.26	0.22	0.25	0.24

Table 5

INTERGROUP DIFFERENCES IN ADJUSTED MEANS FOR EXPECTED YEARS OF EDUCATIONAL ATTAINMENT

Marital and Parenthood Status as of October 1976	Differences from Single Nonparents				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	-0.17	-0.30	-0.41	-0.61	0.06	0.05	0.06	0.06
11/73-10/74	-0.38	-0.79	-0.88	-1.06	0.08	0.08	0.08	0.09
6/72-10/73	-0.62	-0.82	-0.87	-0.97	0.08	0.08	0.08	0.09
Before 6/72	-0.91	-0.81	-0.50	-0.63	0.22	0.19	0.20	0.21
Parents								
Single	-0.32	-0.36	-0.61	-0.46	0.12	0.10	0.11	0.11
Ever Married								
After 10/74	-0.23	-0.36	-0.63	-0.76	0.11	0.10	0.11	0.11
11/73-10/74	-0.48	-0.69	-1.10	-1.15	0.09	0.08	0.09	0.10
6/72-10/73	-0.71	-1.04	-1.17	-1.23	0.06	0.06	0.06	0.07
Before 6/72	-1.03	-0.92	-1.06	-1.21	0.12	0.10	0.11	0.12
Timing of First Child								
After 10/74	-0.51	-0.72	-1.01	-1.11	0.06	0.06	0.06	0.07
11/73-10/74	-0.50	-0.77	-0.90	-0.87	0.08	0.07	0.08	0.08
Before 10/73	-0.85	-0.90	-1.08	-1.09	0.08	0.07	0.08	0.08
Prob. 6/72-10/73	-0.80	-0.96	-1.12	-1.14	0.09	0.08	0.09	0.09
Prob. bef. 6/72	-0.97	-0.79	-1.00	-1.02	0.13	0.11	0.12	0.13
MALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	-0.06	-0.14	-0.19	-0.33	0.06	0.06	0.06	0.06
11/73-10/74	-0.16	-0.39	-0.46	-0.44	0.10	0.10	0.10	0.10
6/72-10/73	-0.29	-0.39	-0.39	-0.39	0.13	0.13	0.12	0.12
Before 6/72	-1.31	0.36	0.04	-0.12	0.60	0.59	0.59	0.65
Parents								
Single	-0.46	-0.15	-0.39	-0.37	0.16	0.14	0.14	0.14
Ever Married								
After 10/74	-0.16	-0.36	-0.43	-0.43	0.11	0.11	0.11	0.11
11/73-10/74	-0.34	-0.46	-0.75	-0.59	0.10	0.10	0.10	0.10
6/72-10/73	-0.57	-0.71	-0.83	-0.72	0.09	0.08	0.08	0.09
Before 6/72	-0.91	-0.43	-0.66	-0.36	0.20	0.17	0.19	0.18
Timing of First Child								
After 10/74	-0.28	-0.52	-0.65	-0.58	0.08	0.07	0.07	0.07
11/73-10/74	-0.63	-0.51	-0.67	-0.51	0.11	0.10	0.10	0.10
Before 10/73	-0.70	-0.47	-0.66	-0.53	0.13	0.11	0.11	0.12
Prob. 6/72-10/73	-0.64	-0.50	-0.70	-0.60	0.14	0.12	0.13	0.13
Prob. bef. 6/72	-0.89	-0.38	-0.54	-0.29	0.26	0.22	0.25	0.24

Percentile rank in senior class

Indicator variables for high school program (academic, vocational-technical)

Socioeconomic status variables (parent's education, father's occupation index, logarithm of family income, number of siblings, number of siblings in college)

Indicators for respondents who identified themselves as Jewish and for respondents who said most of their close friends planned to enter college.

Using the adjusted means and the standard errors in Table 4, one can make comparisons between any two categories. Table 5 gives the intergroup comparisons that result from using the group of single nonparents as the control group. The t-statistic for testing the hypothesis of no effects due to early marriage or adolescent parenthood for any category can be obtained by dividing the difference by the corresponding standard error.

The pattern of the differences across the cells in Table 5 seems to point to the conclusion that the earlier the marriage date or commencement of parenthood, the larger the difference from the control group. However, the differences across the groups tend to be small, and a closer analysis of the changes over time suggests that the detrimental effects of adolescent parenthood upon educational aspirations are not as great as people sometimes assume.

In addition to the modest size of the intergroup differences here, there is another reason for exercising care in interpreting the figures in Table 5. A comparison of Tables 3 and 4 reveals that the differences between the adjusted group means (Table 4) are considerably smaller

than the corresponding differences in the raw means (Table 3). Thus, the intergroup differences in the raw means are accounted for mainly by the independent variables incorporated in our adjustment procedure. The inclusion of other variables might shrink the differences even further.

The goodness of the adjustment process can be judged in part by considering the differences across the groups in the adjusted means for the 1972 measures. Among the nonparents marrying after October 1973, the adjusted means for 1972 should be relatively free of any early-marriage effects. Indeed, these intergroup differences are small, but the pattern of the differences suggests that there may be small intergroup differences not accounted for by our adjustment procedure.

If sharp reductions in educational aspirations do, in fact, coincide with or precede the commencement of marriage or parenthood, these reductions should be apparent from changes over time in the group means or from intergroup comparisons. For the groups with large sample sizes, there are no sharp drops in the group means over time, but the small changes point to a drop in educational aspirations associated with the earlier marriage dates. This conclusion is supported by the corresponding intergroup comparisons. Further drops in educational aspirations associated with the timing of parenthood appear to be very small relative to the standard deviations of these measures given in Table 1.

We conclude from these tables that, among the teenagers who do not drop out of high school, the effects of early marriage and adolescent parenthood upon educational expectations are small relative to the many other factors (ability, socioeconomic status, family influences, etc.) that affect educational aspirations. We also observe that, among the married teenagers, the parents differ little from the nonparents in educational aspirations after controlling for background characteristics and marriage date.

EFFECTS ON SELF-ESTEEM AND LOCUS OF CONTROL

Tables 6 to 11 provide the summary statistics for assessing the magnitudes of the marital and parenthood effects upon the measures of self-esteem and locus of control. In both cases, the adjusted group means control for differences across groups in scholastic aptitude, percentile rank in class, high school program, race, region, and socioeconomic status.*

An analysis of these tables indicates that the marital and parenthood effects on these measures are very small relative to the standard deviations of these measures. Among the females, the early parents averaged slightly higher on the 1972 measures of self-esteem than the nonparents, but the differences between the parents and nonparents shrink over time. Among the males, there are no marked differences between parents and nonparents, but there seems to be a small increase in self-esteem associated with early marriage.

*In this case, the measure of socioeconomic status is the single composite index SESRAW on the NLS file. This index is a linear combination of measures of father's education, mother's education, father's occupation, family income, and indicators of household items.

Table 6

MEAN VALUES OF THE SELF-ESTEEM MEASURES
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means				Sample Sizes			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	3.90	4.09	4.16	4.24	3294	4091	4110	4234
Ever Married								
After 10/74	3.90	4.11	4.19	4.26	1077	1330	1353	1378
11/73-10/74	3.91	4.16	4.24	4.22	445	591	578	603
6/72-10/73	3.81	4.10	4.17	4.21	516	630	629	671
Before 6/72	3.79	4.07	4.09	4.19	63	89	87	92
Parents								
Single	3.97	4.06	4.06	4.12	285	396	403	409
Ever Married								
After 10/74	3.89	4.05	4.16	4.18	240	330	328	343
11/73-10/74	3.82	4.09	4.13	4.16	397	494	485	506
6/72-10/73	3.91	4.11	4.12	4.14	989	1288	1271	1301
Before 6/72	3.88	4.07	4.06	4.15	241	347	342	339
Timing of First Child								
After 10/74	3.88	4.08	4.13	4.16	913	1191	1187	1252
11/73-10/74	3.87	4.11	4.13	4.13	593	802	776	741
Before 10/73	3.94	4.08	4.07	4.15	607	883	826	807
Prob. 6/72-10/73	3.93	4.09	4.06	4.14	379	606	567	559
Prob. bef. 6/72	3.94	4.06	4.10	4.18	228	277	259	248
MALES								
Nonparents								
Single	3.96	4.12	4.20	4.29	4325	5299	5323	5607
Ever Married								
After 10/74	3.97	4.17	4.32	4.41	997	1169	1186	1259
11/73-10/74	3.93	4.20	4.28	4.33	319	384	396	418
6/72-10/73	3.99	4.26	4.33	4.36	211	242	251	276
Before 6/72	4.01	4.33	4.33	4.61	8	10	10	9
Parents								
Single	3.97	4.14	4.24	4.31	169	207	207	230
Ever Married								
After 10/74	3.99	4.16	4.30	4.34	284	338	344	377
11/73-10/74	3.93	4.16	4.28	4.29	320	393	397	420
6/72-10/73	3.92	4.18	4.30	4.32	488	630	590	628
Before 6/72	4.00	4.10	4.14	4.28	88	120	108	122
Timing of First Child								
After 10/74	3.95	4.18	4.29	4.31	716	892	871	962
11/73-10/74	3.92	4.14	4.25	4.32	334	448	449	417
Before 10/73	3.93	4.13	4.27	4.32	250	353	304	319
Prob. 6/72-10/73	3.88	4.14	4.30	4.32	191	279	241	251
Prob. bef. 6/72	4.09	4.08	4.15	4.29	59	74	63	68

Table 7

ADJUSTED MEAN VALUES OF THE SELF-ESTEEM MEASURES BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Adjusted Means				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents Single	3.90	4.09	4.16	4.24	0.01	0.01	0.01	0.01
Ever Married								
After 10/74	3.93	4.12	4.21	4.28	0.02	0.02	0.02	0.02
11/73-10/74	3.96	4.20	4.28	4.26	0.03	0.02	0.03	0.03
6/72-10/73	3.87	4.15	4.22	4.27	0.03	0.02	0.03	0.02
Before 6/72	3.87	4.14	4.17	4.29	0.09	0.06	0.07	0.06
Parents Single	3.99	4.11	4.09	4.17	0.05	0.03	0.03	0.03
Ever Married								
After 10/74	3.96	4.11	4.20	4.24	0.04	0.03	0.03	0.03
11/73-10/74	3.90	4.15	4.19	4.24	0.04	0.03	0.03	0.03
6/72-10/73	4.00	4.18	4.19	4.23	0.02	0.02	0.02	0.02
Before 6/72	3.97	4.15	4.14	4.24	0.05	0.03	0.04	0.03
Timing of First Child								
After 10/74	3.95	4.14	4.19	4.23	0.02	0.02	0.02	0.02
11/73-10/74	3.95	4.18	4.19	4.21	0.03	0.02	0.02	0.02
Before 10/73	4.02	4.15	4.13	4.23	0.03	0.02	0.02	0.02
Prob. 6/72-10/73	4.02	4.16	4.12	4.22	0.04	0.03	0.03	0.03
Prob. bef. 6/72	4.01	4.13	4.16	4.26	0.05	0.04	0.04	0.04
MALES								
Nonparents Single	3.96	4.12	4.20	4.29	0.01	0.01	0.01	0.01
Ever Married								
After 10/74	3.98	4.19	4.33	4.42	0.02	0.02	0.02	0.02
11/73-10/74	3.96	4.22	4.30	4.35	0.04	0.03	0.03	0.03
6/72-10/73	4.03	4.29	4.36	4.40	0.04	0.04	0.04	0.04
Before 6/72	4.10	4.38	4.38	4.67	0.22	0.18	0.19	0.20
Parents Single	3.95	4.13	4.21	4.32	0.05	0.04	0.04	0.04
Ever Married								
After 10/74	4.01	4.18	4.31	4.37	0.04	0.03	0.03	0.03
11/73-10/74	3.98	4.19	4.31	4.33	0.04	0.03	0.03	0.03
6/72-10/73	3.96	4.22	4.32	4.36	0.03	0.02	0.03	0.02
Before 6/72	4.05	4.15	4.17	4.33	0.07	0.05	0.06	0.05
Timing of First Child								
After 10/74	3.98	4.20	4.31	4.35	0.02	0.02	0.02	0.02
11/73-10/74	3.94	4.16	4.26	4.36	0.04	0.03	0.03	0.03
Before 10/73	3.96	4.16	4.29	4.35	0.04	0.03	0.03	0.03
Prob. 6/72-10/73	3.91	4.17	4.31	4.36	0.05	0.03	0.04	0.04
Prob. bef. 6/72	4.13	4.12	4.18	4.34	0.08	0.07	0.07	0.07

Table 8

INTERGROUP DIFFERENCES IN ADJUSTED MEANS
FOR THE SELF-ESTEEM MEASURES

Marital and Parenthood Status as of October 1976	Differences from Single Nonparents				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.03	0.03	0.05	0.04	0.02	0.02	0.02	0.02
11/73-10/74	0.06	0.11	0.12	0.02	0.03	0.03	0.03	0.03
6/72-10/73	-0.03	0.06	0.06	0.03	0.03	0.03	0.03	0.03
Before 6/72	-0.03	0.05	0.01	0.04	0.09	0.06	0.07	0.06
Parents								
Single	0.09	0.02	-0.07	-0.07	0.05	0.03	0.04	0.04
Ever Married								
After 10/74	0.06	0.02	0.04	0.00	0.05	0.03	0.04	0.03
11/73-10/74	0.00	0.06	0.03	0.00	0.04	0.03	0.03	0.03
6/72-10/73	0.10	0.09	0.03	-0.01	0.03	0.02	0.02	0.02
Before 6/72	0.07	0.06	-0.02	0.00	0.05	0.03	0.04	0.04
Timing of First Child								
After 10/74	0.05	0.05	0.03	-0.01	0.03	0.02	0.02	0.02
11/73-10/74	0.05	0.09	0.02	-0.03	0.03	0.02	0.03	0.03
Before 10/73	0.11	0.06	-0.03	0.00	0.03	0.02	0.03	0.03
Prob. 6/72-10/73	0.12	0.07	-0.04	-0.02	0.04	0.03	0.03	0.03
Prob. bef. 6/72	0.11	0.04	0.00	0.01	0.05	0.04	0.04	0.04
MALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.03	0.07	0.13	0.13	0.02	0.02	0.02	0.02
11/73-10/74	0.00	0.10	0.10	0.06	0.04	0.03	0.03	0.03
6/72-10/73	0.07	0.17	0.16	0.11	0.04	0.04	0.04	0.04
Before 6/72	0.14	0.26	0.17	0.37	0.22	0.18	0.19	0.20
Parents								
Single	-0.01	0.01	0.01	0.03	0.05	0.04	0.04	0.04
Ever Married								
After 10/74	0.05	0.06	0.11	0.08	0.04	0.03	0.03	0.03
11/73-10/74	0.02	0.07	0.11	0.04	0.04	0.03	0.03	0.03
6/72-10/73	0.00	0.10	0.12	0.07	0.03	0.02	0.03	0.03
Before 6/72	0.09	0.03	-0.03	0.04	0.07	0.05	0.06	0.05
Timing of First Child								
After 10/74	0.02	0.08	0.11	0.06	0.03	0.02	0.02	0.02
11/73-10/74	-0.01	0.04	0.06	0.07	0.04	0.03	0.03	0.03
Before 10/73	0.00	0.04	0.09	0.06	0.04	0.03	0.04	0.03
Prob. 6/72-10/73	-0.05	0.05	0.11	0.07	0.05	0.04	0.04	0.04
Prob. bef. 6/72	0.17	0.00	-0.02	0.05	0.08	0.07	0.08	0.07

Table 9

MEAN VALUES OF THE LOCUS OF CONTROL MEASURES
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means				Sample Sizes			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	3.89	3.92	3.92	3.97	3293	4089	4107	4234
Ever Married								
After 10/74	3.90	3.96	3.95	4.02	1077	1332	1350	1378
11/73-10/74	3.83	3.93	3.98	3.97	446	591	578	603
6/72-10/73	3.81	3.95	3.94	3.95	514	631	628	671
Before 6/72	3.60	3.88	3.87	3.98	63	89	87	92
Parents								
Single	3.33	3.42	3.35	3.40	286	395	402	409
Ever Married								
After 10/74	3.71	3.72	3.76	3.81	240	329	328	343
11/73-10/74	3.61	3.72	3.70	3.78	396	493	484	506
6/72-10/73	3.71	3.79	3.78	3.82	987	1287	1270	1296
Before 6/72	3.69	3.72	3.74	3.76	242	347	341	339
Timing of First Child								
After 10/74	3.69	3.77	3.77	3.79	913	1189	1184	1252
11/73-10/74	3.58	3.70	3.65	3.73	592	800	776	737
Before 10/73	3.59	3.63	3.62	3.69	607	882	824	806
Prob. 6/72-10/73	3.61	3.66	3.64	3.71	378	605	567	559
Prob. bef. 6/72	3.55	3.58	3.60	3.65	229	277	257	247
MALES								
Nonparents								
Single	3.73	3.82	3.82	3.89	4324	5291	5313	5602
Ever Married								
After 10/74	3.70	3.86	3.87	3.96	995	1170	1185	1259
11/73-10/74	3.68	3.88	3.88	3.99	319	384	396	418
6/72-10/73	3.60	3.75	3.78	3.84	211	241	251	276
Before 6/72	3.84	3.83	3.98	4.17	8	10	10	9
Parents								
Single	3.46	3.45	3.44	3.47	167	207	207	230
Ever Married								
After 10/74	3.41	3.60	3.62	3.63	283	337	343	377
11/73-10/74	3.51	3.66	3.63	3.71	318	393	397	420
6/72-10/73	3.48	3.71	3.68	3.76	487	628	588	628
Before 6/72	3.35	3.60	3.62	3.72	87	120	108	122
Timing of First Child								
After 10/74	3.51	3.67	3.67	3.69	712	891	870	962
11/73-10/74	3.43	3.60	3.54	3.63	335	446	447	417
Before 10/73	3.38	3.58	3.57	3.71	248	353	304	319
Prob. 6/72-10/73	3.38	3.58	3.62	3.73	191	279	241	251
Prob. bef. 6/72	3.38	3.58	3.37	3.64	57	74	63	68

Table 10

ADJUSTED MEAN VALUES OF THE LOCUS OF CONTROL MEASURES BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Adjusted Means				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	3.89	3.92	3.92	3.97	0.01	0.01	0.01	0.01
Ever Married								
After 10/74	3.92	3.96	3.95	4.02	0.02	0.02	0.02	0.02
11/73-10/74	3.90	3.96	4.02	4.01	0.03	0.03	0.03	0.03
6/72-10/73	3.92	4.01	4.02	4.03	0.03	0.03	0.03	0.03
Before 6/72	3.78	4.00	4.00	4.13	0.08	0.07	0.07	0.07
Parents								
Single	3.67	3.75	3.67	3.74	0.04	0.03	0.04	0.04
Ever Married								
After 10/74	3.89	3.86	3.90	3.95	0.04	0.03	0.04	0.03
11/73-10/74	3.80	3.87	3.86	3.93	0.03	0.03	0.03	0.03
6/72-10/73	3.90	3.93	3.93	3.97	0.02	0.02	0.02	0.02
Before 6/72	3.92	3.89	3.91	3.95	0.04	0.03	0.04	0.04
Timing of First Child								
After 10/74	3.87	3.89	3.91	3.93	0.02	0.02	0.02	0.02
11/73-10/74	3.83	3.90	3.85	3.94	0.03	0.02	0.02	0.03
Before 10/73	3.84	3.84	3.83	3.91	0.03	0.02	0.02	0.02
Prob. 6/72-10/73	3.83	3.84	3.82	3.90	0.03	0.03	0.03	0.03
Prob. bef. 6/72	3.84	3.83	3.85	3.91	0.04	0.04	0.04	0.04
MALES								
Nonparents								
Single	3.73	3.82	3.82	3.89	0.01	0.01	0.01	0.01
Ever Married								
After 10/74	3.75	3.89	3.90	3.99	0.02	0.02	0.02	0.02
11/73-10/74	3.76	3.93	3.93	4.03	0.04	0.03	0.03	0.03
6/72-10/73	3.78	3.86	3.89	3.96	0.05	0.04	0.04	0.04
Before 6/72	3.92	3.86	4.02	4.20	0.23	0.19	0.21	0.22
Parents								
Single	3.69	3.66	3.68	3.73	0.05	0.05	0.05	0.05
Ever Married								
After 10/74	3.61	3.75	3.78	3.80	0.04	0.03	0.04	0.03
11/73-10/74	3.72	3.80	3.79	3.87	0.04	0.03	0.03	0.03
6/72-10/73	3.70	3.85	3.84	3.92	0.03	0.03	0.03	0.03
Before 6/72	3.67	3.81	3.84	3.95	0.07	0.06	0.06	0.06
Timing of First Child								
After 10/74	3.71	3.81	3.82	3.85	0.03	0.02	0.02	0.02
11/73-10/74	3.66	3.78	3.73	3.83	0.04	0.03	0.03	0.03
Before 10/73	3.64	3.77	3.78	3.93	0.04	0.03	0.04	0.04
Prob. 6/72-10/73	3.62	3.76	3.82	3.93	0.05	0.04	0.04	0.04
Prob. bef. 6/72	3.71	3.80	3.61	3.90	0.09	0.07	0.08	0.08

Table 11

INTERGROUP DIFFERENCES IN ADJUSTED MEANS
FOR THE LOCUS OF CONTROL MEASURES

Marital and Parenthood Status as of October 1976	Differences from Single Nonparents				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.03	0.04	0.03	0.05	0.02	0.02	0.02	0.02
11/73-10/74	0.01	0.05	0.10	0.04	0.03	0.03	0.03	0.03
6/72-10/73	0.03	0.10	0.10	0.06	0.03	0.03	0.03	0.03
Before 6/72	-0.11	0.08	0.08	0.17	0.08	0.07	0.07	0.07
Parents								
Single	-0.22	-0.17	-0.25	-0.23	0.04	0.04	0.04	0.04
Ever Married								
After 10/74	0.00	-0.06	-0.02	-0.02	0.04	0.04	0.04	0.04
11/73-10/74	-0.08	-0.05	-0.06	-0.03	0.03	0.03	0.03	0.03
6/72-10/73	0.02	0.01	0.01	0.00	0.02	0.02	0.02	0.02
Before 6/72	0.04	-0.02	0.00	-0.02	0.04	0.04	0.04	0.04
Timing of First Child								
After 10/74	-0.02	-0.02	-0.01	-0.04	0.03	0.02	0.02	0.02
11/73-10/74	-0.06	-0.01	-0.07	-0.03	0.03	0.03	0.03	0.03
Before 10/73	-0.05	-0.07	-0.09	-0.06	0.03	0.02	0.03	0.03
Prob. 6/72-10/73	-0.05	-0.08	-0.10	-0.07	0.04	0.03	0.03	0.03
Prob. bef. 6/72	-0.04	-0.08	-0.07	-0.05	0.05	0.04	0.04	0.04
MALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.02	0.07	0.08	0.09	0.02	0.02	0.02	0.02
11/73-10/74	0.04	0.10	0.11	0.14	0.04	0.03	0.03	0.03
6/72-10/73	0.05	0.04	0.07	0.06	0.05	0.04	0.04	0.04
Before 6/72	0.20	0.04	0.20	0.31	0.23	0.19	0.21	0.22
Parents								
Single	-0.03	-0.17	-0.14	-0.16	0.05	0.05	0.05	0.05
Ever Married								
After 10/74	-0.12	-0.08	-0.04	-0.10	0.04	0.04	0.04	0.04
11/73-10/74	0.00	-0.02	-0.04	-0.02	0.04	0.03	0.04	0.03
6/72-10/73	-0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03
Before 6/72	-0.06	-0.01	0.02	0.05	0.07	0.06	0.07	0.06
Timing of First Child								
After 10/74	-0.02	-0.01	0.00	-0.05	0.03	0.02	0.03	0.02
11/73-10/74	-0.06	-0.05	-0.09	-0.07	0.04	0.03	0.03	0.03
Before 10/73	-0.08	-0.06	-0.05	0.03	0.04	0.03	0.04	0.04
Prob. 6/72-10/73	-0.11	-0.07	0.00	0.04	0.05	0.04	0.04	0.04
Prob. bef. 6/72	-0.02	-0.02	-0.21	0.00	0.09	0.07	0.08	0.08

The locus of control tables exhibit an interesting interaction between the parenthood and marital status categories. The adjusted group means for the ever married parents differ hardly at all from those for the single nonparents. But the single parents differ from the control group in a negative direction (indicating "external" locus of control) whereas the married parents differ in the opposite direction. This suggests that single parents tend to give more credence to the notion that external factors and luck play a significant role in shaping their lives.

EFFECTS ON WORK, FAMILY, AND COMMUNITY ORIENTATION

Tables 12 to 20 provide the summary statistics for analyzing the work, family, and community orientation variables. In each case, the independent variables used in calculating the adjusted means are the same as those used in analyzing the self-esteem and locus of control measures.

Table 14 shows that among females the work orientation measure is closely related to marital and parenthood status. Not surprisingly, the importance attached to careers by married women drops near the marriage date and drops further around the time of parenthood. The female parents who remained single through October 1976 do not differ significantly from the single nonparents on this measure.

Among males, the differences across groups are much less pronounced. There is some evidence of a small positive effect associated with marriage, but comparisons between parents and nonparents indicate that the parenthood effects upon work orientation are very small.

Table 12

MEAN VALUES OF THE WORK ORIENTATION MEASURES
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means				Sample Sizes			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	2.45	2.40	2.39	2.42	3297	4101	4103	4236
Ever Married								
After 10/74	2.45	2.37	2.36	2.30	1077	1331	1348	1381
11/73-10/74	2.48	2.37	2.37	2.32	444	591	581	603
6/72-10/73	2.46	2.31	2.36	2.31	514	631	623	669
Before 6/72	2.40	2.33	2.40	2.31	63	90	87	92
Parents								
Single	2.61	2.54	2.54	2.49	288	396	396	410
Ever Married								
After 10/74	2.44	2.39	2.37	2.25	239	330	326	342
11/73-10/74	2.47	2.32	2.27	2.22	397	497	484	508
6/72-10/73	2.45	2.24	2.27	2.22	989	1291	1265	1304
Before 6/72	2.43	2.29	2.30	2.30	241	347	340	345
Timing of First Child								
After 10/74	2.48	2.34	2.31	2.24	913	1200	1180	1254
11/73-10/74	2.50	2.32	2.34	2.31	593	801	772	744
Before 10/73	2.45	2.30	2.33	2.30	609	882	820	813
Prob. 6/72-10/73	2.42	2.28	2.32	2.28	380	606	563	562
Prob. bef. 6/72	2.50	2.35	2.36	2.36	229	276	257	251
MALES								
Nonparents								
Single	2.57	2.49	2.47	2.50	4329	5308	5304	5609
Ever Married								
After 10/74	2.60	2.52	2.49	2.55	1000	1176	1183	1261
11/73-10/74	2.61	2.53	2.55	2.53	319	385	390	417
6/72-10/73	2.63	2.56	2.56	2.57	212	242	250	277
Before 6/72	2.71	2.53	2.67	2.57	8	10	10	10
Parents								
Single	2.61	2.59	2.61	2.60	168	207	207	230
Ever Married								
After 10/74	2.63	2.58	2.59	2.60	284	339	345	378
11/73-10/74	2.61	2.56	2.57	2.54	319	392	393	424
6/72-10/73	2.60	2.55	2.57	2.55	491	631	591	631
Before 6/72	2.60	2.54	2.58	2.60	87	121	108	122
Timing of First Child								
After 10/74	2.61	2.56	2.57	2.56	715	893	870	967
11/73-10/74	2.62	2.58	2.61	2.59	334	447	448	419
Before 10/73	2.60	2.56	2.60	2.56	251	355	303	320
Prob. 6/72-10/73	2.60	2.57	2.60	2.55	192	280	240	252
Prob. bef. 6/72	2.61	2.54	2.59	2.58	59	75	63	68

Table 13

ADJUSTED MEAN VALUES OF THE WORK ORIENTATION MEASURES
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Adjusted Means				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	2.45	2.40	2.39	2.42	0.01	0.01	0.01	0.01
Ever Married								
After 10/74	2.45	2.38	2.36	2.31	0.01	0.01	0.01	0.01
11/73-10/74	2.46	2.37	2.37	2.33	0.02	0.02	0.02	0.02
6/72-10/73	2.43	2.31	2.34	2.31	0.02	0.02	0.02	0.01
Before 6/72	2.32	2.30	2.36	2.30	0.04	0.04	0.04	0.04
Parents								
Single	2.48	2.41	2.40	2.41	0.02	0.02	0.02	0.02
Ever Married								
After 10/74	2.39	2.36	2.33	2.23	0.02	0.02	0.02	0.02
11/73-10/74	2.41	2.29	2.22	2.20	0.02	0.02	0.02	0.02
6/72-10/73	2.40	2.21	2.23	2.21	0.01	0.01	0.01	0.01
Before 6/72	2.35	2.23	2.24	2.27	0.02	0.02	0.02	0.02
Timing of First Child								
After 10/74	2.42	2.31	2.27	2.22	0.01	0.01	0.01	0.01
11/73-10/74	2.42	2.26	2.27	2.28	0.02	0.01	0.01	0.01
Before 10/73	2.37	2.24	2.26	2.27	0.02	0.01	0.01	0.01
Prob. 6/72-10/73	2.35	2.23	2.26	2.25	0.02	0.02	0.02	0.02
Prob. bef. 6/72	2.40	2.26	2.26	2.31	0.02	0.02	0.02	0.02
MALES								
Nonparents								
Single	2.57	2.49	2.47	2.50	0.01	0.01	0.01	0.00
Ever Married								
After 10/74	2.59	2.51	2.48	2.54	0.01	0.01	0.01	0.01
11/73-10/74	2.60	2.52	2.53	2.52	0.02	0.02	0.02	0.02
6/72-10/73	2.60	2.53	2.50	2.54	0.03	0.02	0.02	0.02
Before 6/72	2.71	2.55	2.64	2.57	0.13	0.12	0.12	0.11
Parents								
Single	2.54	2.50	2.49	2.50	0.03	0.03	0.03	0.03
Ever Married								
After 10/74	2.59	2.53	2.52	2.55	0.02	0.02	0.02	0.02
11/73-10/74	2.57	2.52	2.50	2.49	0.02	0.02	0.02	0.02
6/72-10/73	2.57	2.51	2.50	2.51	0.02	0.02	0.02	0.02
Before 6/72	2.55	2.48	2.49	2.54	0.04	0.03	0.04	0.03
Timing of First Child								
After 10/74	2.57	2.51	2.51	2.52	0.01	0.01	0.01	0.01
11/73-10/74	2.57	2.51	2.52	2.52	0.02	0.02	0.02	0.02
Before 10/73	2.55	2.50	2.51	2.50	0.02	0.02	0.02	0.02
Prob. 6/72-10/73	2.55	2.51	2.52	2.49	0.03	0.02	0.02	0.02
Prob. bef. 6/72	2.56	2.47	2.49	2.51	0.05	0.04	0.05	0.04

Table 14

INTERGROUP DIFFERENCES IN ADJUSTED MEANS
FOR THE WORK ORIENTATION MEASURES

Marital and Parenthood Status as of October 1976	Differences from Single Nonparents				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.00	-0.02	-0.03	-0.12	0.01	0.01	0.01	0.01
11/73-10/74	0.01	-0.03	-0.02	-0.09	0.02	0.02	0.02	0.02
6/72-10/73	-0.02	-0.09	-0.05	-0.11	0.02	0.02	0.02	0.02
Before 6/72	-0.13	-0.10	-0.03	-0.12	0.05	0.04	0.04	0.04
Parents								
Single	0.03	0.01	0.01	-0.02	0.02	0.02	0.02	0.02
Ever Married								
After 10/74	-0.06	-0.04	-0.06	-0.19	0.02	0.02	0.02	0.02
11/73-10/74	-0.04	-0.11	-0.17	-0.22	0.02	0.02	0.02	0.02
6/72-10/73	-0.05	-0.18	-0.16	-0.21	0.01	0.01	0.01	0.01
Before 6/72	-0.10	-0.16	-0.15	-0.15	0.02	0.02	0.02	0.02
Timing of First Child								
After 10/74	-0.03	-0.09	-0.12	-0.20	0.01	0.01	0.01	0.01
11/73-10/74	-0.03	-0.14	-0.12	-0.15	0.02	0.01	0.02	0.02
Before 10/73	-0.08	-0.16	-0.13	-0.15	0.02	0.01	0.02	0.02
Prob. 6/72-10/73	-0.10	-0.17	-0.13	-0.17	0.02	0.02	0.02	0.02
Prob. bef. 6/72	-0.05	-0.14	-0.13	-0.11	0.02	0.02	0.02	0.02
MALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.02	0.02	0.01	0.04	0.01	0.01	0.01	0.01
11/73-10/74	0.03	0.04	0.06	0.03	0.02	0.02	0.02	0.02
6/72-10/73	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.02
Before 6/72	0.14	0.06	0.18	0.08	0.13	0.12	0.12	0.11
Parents								
Single	-0.03	0.01	0.02	0.01	0.03	0.03	0.03	0.03
Ever Married								
After 10/74	0.02	0.04	0.05	0.05	0.02	0.02	0.02	0.02
11/73-10/74	0.00	0.03	0.04	0.00	0.02	0.02	0.02	0.02
6/72-10/73	0.00	0.02	0.03	0.01	0.02	0.02	0.02	0.02
Before 6/72	-0.02	-0.01	0.02	0.04	0.04	0.03	0.04	0.03
Timing of First Child								
After 10/74	0.00	0.03	0.04	0.02	0.02	0.01	0.01	0.01
11/73-10/74	0.00	0.03	0.05	0.03	0.02	0.02	0.02	0.02
Before 10/73	-0.02	0.01	0.04	0.00	0.02	0.02	0.02	0.02
Prob. 6/72-10/73	-0.02	0.02	0.05	0.00	0.03	0.02	0.03	0.02
Prob. bef. 6/72	-0.01	-0.02	0.02	0.02	0.05	0.04	0.05	0.04

Table 15

MEAN VALUES OF THE FAMILY ORIENTATION MEASURES
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means				Sample Sizes			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	0.92	1.00	1.01	1.03	3260	4049	4063	4207
Ever Married								
After 10/74	0.97	1.05	1.10	1.1[illegible]	1072	1320	1339	1366
11/73-10/74	0.97	1.08	1.18	1.15	438	585	575	594
6/72-10/73	0.94	1.12	1.15	1.11	507	607	614	664
Before 6/72	0.98	1.12	1.14	1.08	63	88	86	92
Parents								
Single	0.86	0.99	0.99	1.00	278	388	395	398
Ever Married								
After 10/74	0.97	1.02	1.09	1.12	234	326	325	338
11/73-10/74	1.01	1.08	1.15	1.14	393	492	477	502
6/72-10/73	0.97	1.14	1.15	1.14	984	1263	1255	1281
Before 6/72	1.05	1.11	1.14	1.12	236	339	337	339
Timing of First Child								
After 10/74	0.96	1.09	1.13	1.14	901	1173	1169	1236
11/73-10/74	0.96	1.09	1.11	1.11	585	788	769	726
Before 10/73	0.98	1.08	1.10	1.09	600	871	811	799
Prob. 6/72-10/73	0.97	1.09	1.12	1.10	377	601	559	552
Prob. bef. 6/72	1.00	1.05	1.05	1.05	223	270	252	247
MALES								
Nonparents								
Single	0.90	0.98	0.98	1.00	4264	5217	5255	5547
Ever Married								
After 10/74	0.94	1.04	1.04	1.08	982	1159	1173	1251
11/73-10/74	0.95	1.04	1.11	1.08	317	381	389	412
6/72-10/73	0.97	1.06	1.09	1.05	208	237	248	271
Before 6/72	0.92	1.00	0.97	0.90	8	10	10	10
Parents								
Single	0.82	0.91	0.96	1.00	162	204	205	227
Ever Married								
After 10/74	0.91	1.04	1.05	1.06	277	335	339	374
11/73-10/74	0.94	1.05	1.07	1.04	315	387	391	413
6/72-10/73	0.95	1.05	1.07	1.04	480	622	577	622
Before 6/72	1.00	1.01	1.08	1.10	82	117	106	119
Timing of First Child								
After 10/74	0.93	1.04	1.07	1.06	703	881	856	952
11/73-10/74	0.91	1.01	1.05	1.04	328	443	442	410
Before 10/73	0.95	1.01	1.02	1.01	239	348	300	315
Prob. 6/72-10/73	0.94	1.02	1.02	1.00	185	275	238	249
Prob. bef. 6/72	1.01	0.96	1.00	1.08	54	73	62	66

Table 16

ADJUSTED MEAN VALUES OF THE FAMILY ORIENTATION MEASURES BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Adjusted Means				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	0.92	1.00	1.01	1.03	0.01	0.01	0.01	0.01
Ever Married								
After 10/74	0.96	1.04	1.09	1.16	0.01	0.01	0.01	0.01
11/73-10/74	0.95	1.07	1.15	1.13	0.02	0.02	0.02	0.02
6/72-10/73	0.91	1.11	1.11	1.09	0.02	0.02	0.02	0.02
Before 6/72	0.93	1.09	1.08	1.04	0.05	0.04	0.04	0.04
Parents								
Single	0.86	1.01	1.02	1.04	0.03	0.02	0.02	0.02
Ever Married								
After 10/74	0.97	1.02	1.09	1.13	0.03	0.02	0.02	0.02
11/73-10/74	0.99	1.08	1.13	1.13	0.02	0.02	0.02	0.02
6/72-10/73	0.94	1.13	1.12	1.12	0.01	0.01	0.01	0.01
Before 6/72	1.01	1.09	1.10	1.10	0.03	0.02	0.02	0.02
Timing of First Child								
After 10/74	0.94	1.09	1.11	1.12	0.01	0.01	0.01	0.01
11/73-10/74	0.94	1.08	1.10	1.10	0.02	0.01	0.01	0.01
Before 10/73	0.97	1.08	1.09	1.09	0.02	0.01	0.01	0.01
Prob. 6/72-10/73	0.96	1.09	1.11	1.10	0.02	0.02	0.02	0.02
Prob. bef. 6/72	0.99	1.05	1.05	1.06	0.03	0.02	0.02	0.02
MALES								
Nonparents								
Single	0.90	0.98	0.98	1.00	0.01	0.01	0.01	0.00
Ever Married								
After 10/74	0.93	1.03	1.02	1.07	0.01	0.01	0.01	0.01
11/73-10/74	0.93	1.03	1.08	1.06	0.02	0.02	0.02	0.02
6/72-10/73	0.95	1.03	1.05	1.01	0.03	0.02	0.02	0.02
Before 6/72	0.88	0.98	0.92	0.87	0.15	0.12	0.12	0.12
Parents								
Single	0.84	0.92	0.98	1.01	0.03	0.03	0.03	0.03
Ever Married								
After 10/74	0.90	1.02	1.03	1.04	0.03	0.02	0.02	0.02
11/73-10/74	0.92	1.04	1.04	1.02	0.02	0.02	0.02	0.02
6/72-10/73	0.93	1.03	1.04	1.01	0.02	0.02	0.02	0.02
Before 6/72	0.97	0.97	1.03	1.06	0.05	0.03	0.04	0.04
Timing of First Child								
After 10/74	0.91	1.02	1.04	1.03	0.02	0.01	0.01	0.01
11/73-10/74	0.91	1.00	1.04	1.03	0.02	0.02	0.02	0.02
Before 10/73	0.94	0.99	1.00	0.99	0.03	0.02	0.02	0.02
Prob. 6/72-10/73	0.92	1.01	1.00	0.98	0.03	0.02	0.02	0.02
Prob. bef. 6/72	0.99	0.94	0.97	1.05	0.06	0.04	0.05	0.05

Table 17

INTERGROUP DIFFERENCES IN ADJUSTED MEANS
FOR THE FAMILY ORIENTATION MEASURES

Marital and Parenthood Status as of October 1976	Differences from Single Nonparents				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.04	0.04	0.08	0.12	0.01	0.01	0.01	0.01
11/73-10/74	0.03	0.07	0.14	0.10	0.02	0.02	0.02	0.02
6/72-10/73	-0.02	0.10	0.10	0.06	0.02	0.02	0.02	0.02
Before 6/72	0.00	0.09	0.06	0.01	0.05	0.04	0.04	0.04
Parents								
Single	-0.06	0.00	0.01	0.00	0.03	0.02	0.02	0.02
Ever Married								
After 10/74	0.04	0.02	0.08	0.09	0.03	0.02	0.02	0.02
11/73-10/74	0.06	0.07	0.12	0.10	0.02	0.02	0.02	0.02
6/72-10/73	0.02	0.12	0.11	0.09	0.02	0.01	0.01	0.01
Before 6/72	0.09	0.09	0.09	0.07	0.03	0.02	0.02	0.02
Timing of First Child								
After 10/74	0.02	0.08	0.10	0.09	0.02	0.01	0.01	0.01
11/73-10/74	0.02	0.08	0.08	0.07	0.02	0.02	0.02	0.02
Before 10/73	0.04	0.08	0.08	0.05	0.02	0.01	0.02	0.02
Prob. 6/72-10/73	0.03	0.09	0.10	0.07	0.02	0.02	0.02	0.02
Prob. bef. 6/72	0.06	0.05	0.03	0.02	0.03	0.02	0.03	0.03
MALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.03	0.05	0.04	0.07	0.01	0.01	0.01	0.01
11/73-10/74	0.03	0.05	0.10	0.06	0.02	0.02	0.02	0.02
6/72-10/73	0.05	0.05	0.06	0.01	0.03	0.02	0.02	0.02
Before 6/72	-0.02	0.00	-0.06	-0.13	0.15	0.12	0.12	0.12
Parents								
Single	-0.07	-0.06	0.00	0.01	0.04	0.03	0.03	0.03
Ever Married								
After 10/74	0.00	0.04	0.04	0.04	0.03	0.02	0.02	0.02
11/73-10/74	0.02	0.06	0.06	0.02	0.03	0.02	0.02	0.02
6/72-10/73	0.03	0.05	0.06	0.01	0.02	0.02	0.02	0.02
Before 6/72	0.07	0.00	0.05	0.06	0.05	0.03	0.04	0.03
Timing of First Child								
After 10/74	0.01	0.04	0.06	0.03	0.02	0.01	0.01	0.01
11/73-10/74	0.01	0.02	0.05	0.03	0.02	0.02	0.02	0.02
Before 10/73	0.04	0.01	0.01	0.00	0.03	0.02	0.02	0.02
Prob. 6/72-10/73	0.02	0.03	0.02	-0.02	0.03	0.02	0.03	0.02
Prob. bef. 6/72	0.09	-0.04	-0.02	0.05	0.06	0.04	0.05	0.05

Table 18

MEAN VALUES OF THE COMMUNITY ORIENTATION MEASURES
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means				Sample Sizes			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	2.12	2.01	1.98	1.94	3293	4095	4100	4235
Ever Married								
After 10/74	2.12	1.99	1.95	1.89	1077	1328	1346	1381
11/73-10/74	2.14	1.99	1.99	1.90	444	590	581	603
6/72-10/73	2.14	2.03	2.00	1.92	514	632	622	668
Before 6/72	2.23	2.09	1.98	1.92	63	90	87	92
Parents								
Single	2.30	2.24	2.17	2.16	288	394	396	410
Ever Married								
After 10/74	2.17	2.10	2.02	2.01	239	330	326	342
11/73-10/74	2.18	2.08	2.03	1.99	397	495	484	507
6/72-10/73	2.16	2.06	2.02	1.99	987	1289	1265	1305
Before 6/72	2.19	2.13	2.07	2.09	241	348	340	345
Timing of First Child								
After 10/74	2.17	2.08	2.01	1.99	914	1194	1180	1253
11/73-10/74	2.20	2.10	2.08	2.06	593	801	772	745
Before 10/73	2.21	2.14	2.07	2.07	606	883	820	813
Prob. 6/72-10/73	2.17	2.13	2.06	2.04	378	607	563	562
Prob. bef. 6/72	2.27	2.15	2.11	2.12	228	276	257	251
MALES								
Nonparents								
Single	2.10	2.02	2.00	1.98	4318	5295	5299	5604
Ever Married								
After 10/74	2.13	2.07	2.03	2.01	999	1175	1182	1260
11/73-10/74	2.18	2.09	2.04	2.00	319	384	390	417
6/72-10/73	2.20	2.14	2.00	2.01	212	243	250	277
Before 6/72	2.12	2.33	2.23	2.10	8	10	10	10
Parents								
Single	2.31	2.23	2.20	2.19	170	206	207	230
Ever Married								
After 10/74	2.20	2.18	2.12	2.11	284	338	342	378
11/73-10/74	2.20	2.18	2.15	2.08	317	392	393	424
6/72-10/73	2.21	2.13	2.09	2.08	487	630	590	630
Before 6/72	2.28	2.19	2.07	2.08	87	121	108	122
Timing of First Child								
After 10/74	2.19	2.15	2.11	2.09	713	892	866	967
11/73-10/74	2.28	2.19	2.14	2.10	336	446	448	418
Before 10/73	2.25	2.19	2.14	2.14	248	354	303	320
Prob. 6/72-10/73	2.23	2.19	2.13	2.12	191	279	240	252
Prob. bef. 6/72	2.29	2.21	2.20	2.19	57	75	63	68

Table 19

ADJUSTED MEAN VALUES OF THE COMMUNITY ORIENTATION MEASURES BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Adjusted Means				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	2.12	2.01	1.98	1.94	0.01	0.01	0.01	0.01
Ever Married								
After 10/74	2.14	2.00	1.96	1.91	0.01	0.01	0.01	0.01
11/73-10/74	2.15	2.00	1.99	1.91	0.02	0.02	0.02	0.02
6/72-10/73	2.14	2.02	1.99	1.91	0.02	0.02	0.02	0.02
Before 6/72	2.20	2.04	1.93	1.88	0.06	0.04	0.05	0.05
Parents								
Single	2.13	2.03	1.97	1.95	0.03	0.02	0.02	0.02
Ever Married								
After 10/74	2.14	2.04	1.96	1.95	0.03	0.02	0.02	0.02
11/73-10/74	2.15	2.02	1.97	1.93	0.02	0.02	0.02	0.02
6/72-10/73	2.13	2.02	1.98	1.94	0.02	0.01	0.01	0.01
Before 6/72	2.13	2.05	1.99	2.01	0.03	0.02	0.02	0.02
Timing of First Child								
After 10/74	2.14	2.03	1.96	1.94	0.02	0.01	0.01	0.01
11/73-10/74	2.13	2.01	1.99	1.96	0.02	0.02	0.02	0.02
Before 10/73	2.13	2.04	1.97	1.97	0.02	0.02	0.02	0.02
Prob. 6/72-10/73	2.11	2.05	1.98	1.96	0.02	0.02	0.02	0.02
Prob. bef. 6/72	2.16	2.01	1.98	1.98	0.03	0.03	0.03	0.03
MALES								
Nonparents								
Single	2.10	2.02	2.00	1.98	0.01	0.01	0.01	0.01
Ever Married								
After 10/74	2.12	2.06	2.02	2.01	0.01	0.01	0.01	0.01
11/73-10/74	2.17	2.07	2.02	1.99	0.03	0.02	0.02	0.02
6/72-10/73	2.16	2.09	1.94	1.97	0.03	0.03	0.03	0.03
Before 6/72	2.10	2.32	2.20	2.11	0.16	0.14	0.14	0.15
Parents								
Single	2.15	2.02	1.98	1.93	0.04	0.03	0.03	0.03
Ever Married								
After 10/74	2.12	2.08	2.01	2.00	0.03	0.02	0.03	0.02
11/73-10/74	2.14	2.10	2.06	2.00	0.03	0.02	0.02	0.02
6/72-10/73	2.16	2.05	2.01	2.01	0.02	0.02	0.02	0.02
Before 6/72	2.19	2.08	1.94	1.97	0.05	0.04	0.04	0.04
Timing of First Child								
After 10/74	2.12	2.06	2.02	1.99	0.02	0.02	0.02	0.02
11/73-10/74	2.19	2.07	2.01	1.97	0.03	0.02	0.02	0.02
Before 10/73	2.16	2.07	2.01	2.01	0.03	0.02	0.03	0.03
Prob. 6/72-10/73	2.15	2.07	2.00	1.99	0.03	0.03	0.03	0.03
Prob. bef. 6/72	2.20	2.08	2.05	2.05	0.06	0.05	0.06	0.06

Table 20

INTERGROUP DIFFERENCES IN ADJUSTED MEANS
FOR THE COMMUNITY ORIENTATION MEASURES

Marital and Parenthood Status as of October 1976	Differences from Single Nonparents				Standard Errors			
	1972	1973	1974	1976	1972	1973	1974	1976
FEMALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.02	0.00	-0.02	-0.04	0.02	0.01	0.01	0.01
11/73-10/74	0.03	-0.02	0.01	-0.03	0.02	0.02	0.02	0.02
6/72-10/73	0.02	0.00	0.01	-0.03	0.02	0.02	0.02	0.02
Before 6/72	0.08	0.02	-0.05	-0.07	0.06	0.05	0.05	0.05
Parents								
Single	0.01	0.01	-0.01	0.01	0.03	0.02	0.03	0.03
Ever Married								
After 10/74	0.02	0.03	-0.02	0.01	0.03	0.02	0.03	0.02
11/73-10/74	0.03	0.01	0.00	-0.01	0.02	0.02	0.02	0.02
6/72-10/73	0.01	0.01	0.00	0.00	0.02	0.01	0.01	0.01
Before 6/72	0.01	0.04	0.01	0.07	0.03	0.02	0.03	0.03
Timing of First Child								
After 10/74	0.02	0.02	-0.01	0.00	0.02	0.01	0.02	0.01
11/73-10/74	0.01	0.00	0.01	0.02	0.02	0.02	0.02	0.02
Before 10/73	0.01	0.02	0.00	0.02	0.02	0.02	0.02	0.02
Prob. 6/72-10/73	-0.01	0.03	0.00	0.02	0.02	0.02	0.02	0.02
Prob. bef. 6/72	0.04	0.00	0.00	0.04	0.03	0.03	0.03	0.03
MALES								
Nonparents								
Single	----	----	----	----	----	----	----	----
Ever Married								
After 10/74	0.02	0.04	0.02	0.03	0.02	0.01	0.01	0.01
11/73-10/74	0.07	0.05	0.02	0.01	0.03	0.02	0.02	0.02
6/72-10/73	0.06	0.06	-0.06	0.00	0.03	0.03	0.03	0.03
Before 6/72	0.00	0.30	0.20	0.13	0.16	0.14	0.14	0.15
Parents								
Single	0.05	0.00	-0.02	-0.05	0.04	0.03	0.03	0.03
Ever Married								
After 10/74	0.02	0.06	0.02	0.02	0.03	0.03	0.03	0.02
11/73-10/74	0.04	0.08	0.06	0.02	0.03	0.02	0.02	0.02
6/72-10/73	0.06	0.03	0.01	0.03	0.02	0.02	0.02	0.02
Before 6/72	0.09	0.05	-0.06	-0.01	0.05	0.04	0.04	0.04
Timing of First Child								
After 10/74	0.02	0.04	0.02	0.01	0.02	0.02	0.02	0.02
11/73-10/74	0.09	0.04	0.01	-0.01	0.03	0.02	0.02	0.02
Before 10/73	0.06	0.05	0.01	0.03	0.03	0.03	0.03	0.03
Prob. 6/72-10/73	0.04	0.05	0.00	0.01	0.03	0.03	0.03	0.03
Prob. bef. 6/72	0.10	0.06	0.05	0.07	0.06	0.05	0.06	0.06

The marriage and parenthood effects upon the family orientation measures are more pronounced for females than for males. For both sexes, there is clear evidence of a positive effect associated with marriage. The effects of adolescent parenthood upon these measures are not discernible from the tables.

Changes in the community orientation measures over time do not appear to be closely linked to either marriage or parenthood. Differences in the adjusted group means are small, and there is no readily discernible pattern to indicate even modest-sized effects due to marriage or parenthood.

SATISFACTION WITH CAREER PROGRESS

Tables 21 to 23 refer to the index of satisfaction with career progress as of late 1976. The married respondents were more satisfied than the single respondents, but the differences across the adjusted group means are small relative to the standard deviations of these measures (0.81 for females, 0.80 for males). The adjusted means are calculated using the same list of independent variables that was used in analyzing the self-esteem and locus of control measures.

There is some evidence in these tables to suggest that, among married women, the mothers are slightly less satisfied with their career progress than the nonmothers, and the extent of dissatisfaction among mothers appears to be linked with the timing of parenthood. The pattern is similar among married men except that there is no apparent association linking this measure of satisfaction with the timing of parenthood.

Table 21

MEAN VALUES OF THE 1976 CAREER PROGRESS SATISFACTION INDEX BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Mean	Sample Size
	FEMALES	
Nonparents		
Single	3.03	4212
Ever Married		
After 10/74	3.19	1371
11/73-10/74	3.19	600
6/72-10/73	3.12	663
Before 6/72	3.01	91
Parents		
Single	2.73	401
Ever Married		
After 10/74	3.03	342
11/73-10/74	3.05	506
6/72-10/73	3.03	1278
Before 6/72	2.99	342
Timing of First Child		
After 10/74	3.05	1233
11/73-10/74	2.96	739
Before 10/73	2.92	801
Prob. 6/72-10/73	2.95	555
Prob. bef. 6/72	2.85	246
	MALES	
Nonparents		
Single	2.99	5563
Ever Married		
After 10/74	3.16	1267
11/73-10/74	3.17	418
6/72-10/73	3.17	278
Before 6/72	3.11	9
Parents		
Single	2.85	230
Ever Married		
After 10/74	3.05	376
11/73-10/74	3.06	417
6/72-10/73	3.04	624
Before 6/72	3.05	124
Timing of First Child		
After 10/74	3.05	956
11/73-10/74	2.96	419
Before 10/73	3.02	318
Prob. 6/72-10/73	3.04	249
Prob. bef. 6/72	2.94	69

Table 22

ADJUSTED MEAN VALUES OF THE 1976 CAREER PROGRESS SATISFACTION INDEX BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Adjusted Mean	Standard Error
	FEMALES	
Nonparents		
Single	3.03	0.01
Ever Married		
After 10/74	3.17	0.02
11/73-10/74	3.19	0.03
6/72-10/73	3.13	0.03
Before 6/72	3.02	0.09
Parents		
Single	2.93	0.05
Ever Married		
After 10/74	3.10	0.04
11/73-10/74	3.12	0.04
6/72-10/73	3.08	0.03
Before 6/72	3.05	0.05
Timing of First Child		
After 10/74	3.10	0.02
11/73-10/74	3.05	0.03
Before 10/73	3.03	0.03
Prob. 6/72-10/73	3.05	0.04
Prob. bef. 6/72	2.98	0.05
	MALES	
Nonparents		
Single	2.99	0.01
Ever Married		
After 10/74	3.15	0.02
11/73-10/74	3.16	0.04
6/72-10/73	3.18	0.05
Before 6/72	3.16	0.27
Parents		
Single	2.98	0.06
Ever Married		
After 10/74	3.11	0.04
11/73-10/74	3.13	0.04
6/72-10/73	3.09	0.03
Before 6/72	3.10	0.07
Timing of First Child		
After 10/74	3.10	0.03
11/73-10/74	3.05	0.04
Before 10/73	3.09	0.05
Prob. 6/72-10/73	3.11	0.05
Prob. bef. 6/72	3.01	0.10

Table 23

INTERGROUP DIFFERENCES IN ADJUSTED MEANS
FOR THE 1976 CAREER PROGRESS SATISFACTION INDEX

Marital and Parenthood Status as of October 1976	Differences from Single Nonparents	Standard Errors
FEMALES		
Nonparents		
Single	----	----
Ever Married		
After 10/74	0.14	0.03
11/73-10/74	0.16	0.04
6/72-10/73	0.10	0.04
Before 6/72	0.00	0.09
Parents		
Single	-0.10	0.05
Ever Married		
After 10/74	0.07	0.05
11/73-10/74	0.09	0.04
6/72-10/73	0.05	0.03
Before 6/72	0.02	0.05
Timing of First Child		
After 10/74	0.07	0.03
11/73-10/74	0.02	0.03
Before 10/73	0.00	0.03
Prob. 6/72-10/73	0.02	0.04
Prob. bef. 6/72	-0.05	0.05
MALES		
Nonparents		
Single	----	----
Ever Married		
After 10/74	0.17	0.03
11/73-10/74	0.17	0.04
6/72-10/73	0.19	0.05
Before 6/72	0.18	0.27
Parents		
Single	0.00	0.06
Ever Married		
After 10/74	0.12	0.04
11/73-10/74	0.14	0.04
6/72-10/73	0.10	0.03
Before 6/72	0.11	0.07
Timing of First Child		
After 10/74	0.11	0.03
11/73-10/74	0.07	0.04
Before 10/73	0.10	0.05
Prob. 6/72-10/73	0.13	0.05
Prob. bef. 6/72	0.03	0.10

EFFECTS ON EXPECTED FAMILY SIZE

Tables 24 to 26 give the summary statistics on the expected number of children as of the 1973 and 1976 follow-up surveys. In this case, two additional independent variables were incorporated into the analysis, namely, number of siblings and an indicator variable for Catholics.

On average, the early parents expect to have larger families than the nonparents (before or after controlling for intergroup differences on background characteristics). The differences are surprisingly small, however, especially when one considers that the parents have a head start of at least one child over the nonparents.

EFFECTS ON HOMEMAKER ASPIRATIONS

Table 27 shows the percentages of women who plan to become homemakers, by marital and parenthood status as of October 1976. For 1973, 1974, and 1976, these percentages were determined from the respondents' answers to the question, "What kind of work will you be doing when you are 30 years old?" The 1972 percentages result from tabulating responses to an item that asks the respondents to "circle the one number that goes with the best description of the kind of work you would like to do." Since this item does not include the phrase "when you are 30 years old," changes in the tabulated percentages between 1972 and 1973 should be viewed with skepticism.

Not surprisingly, the proportion of married women who expect to be homemakers at age 30 is significantly higher than the corresponding

Table 24

MEAN VALUES OF EXPECTED NUMBER OF CHILDREN
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means		Sample Sizes	
	1973	1976	1973	1976
FEMALES				
Nonparents				
Single	2.22	2.21	3914	4165
Ever Married				
After 10/74	2.35	2.31	1289	1384
11/73-10/74	2.28	2.04	584	609
6/72-10/73	2.14	1.98	617	673
Before 6/72	2.08	1.87	89	93
Parents				
Single	2.09	2.31	382	412
Ever Married				
After 10/74	2.36	2.54	318	340
11/73-10/74	2.43	2.38	485	507
6/72-10/73	2.35	2.37	1276	1301
Before 6/72	2.22	2.41	345	345
Timing of First Child				
After 10/74	2.41	2.41	1177	1249
11/73-10/74	2.24	2.30	782	749
Before 10/73	2.24	2.42	871	810
Prob. 6/72-10/73	2.23	2.34	600	559
Prob. bef. 6/72	2.26	2.61	271	251
MALES				
Nonparents				
Single	2.01	2.18	4812	5456
Ever Married				
After 10/74	2.16	2.30	1092	1271
11/73-10/74	2.20	2.11	363	415
6/72-10/73	2.11	1.88	238	282
Before 6/72	1.70	2.10	10	10
Parents				
Single	2.04	2.71	188	224
Ever Married				
After 10/74	2.12	2.55	313	381
11/73-10/74	2.31	2.45	362	422
6/72-10/73	2.34	2.30	622	628
Before 6/72	2.27	2.46	119	122
Timing of First Child				
After 10/74	2.22	2.44	835	959
11/73-10/74	2.21	2.43	433	424
Before 10/73	2.34	2.48	347	321
Prob. 6/72-10/73	2.32	2.50	275	252
Prob. bef. 6/72	2.39	2.39	72	69

Table 25

ADJUSTED MEAN VALUES OF EXPECTED NUMBER OF CHILDREN
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Adjusted Means		Standard Errors	
	1973	1976	1973	1976
FEMALES				
Nonparents				
Single	2.22	2.21	0.02	0.02
Ever Married				
After 10/74	2.36	2.34	0.03	0.04
11/73-10/74	2.31	2.08	0.05	0.05
6/72-10/73	2.21	2.05	0.05	0.05
Before 6/72	2.20	1.97	0.12	0.14
Parents				
Single	2.11	2.24	0.07	0.07
Ever Married				
After 10/74	2.38	2.53	0.06	0.07
11/73-10/74	2.45	2.38	0.05	0.06
6/72-10/73	2.39	2.39	0.04	0.04
Before 6/72	2.31	2.47	0.06	0.08
Timing of First Child				
After 10/74	2.45	2.42	0.04	0.04
11/73-10/74	2.27	2.29	0.04	0.05
Before 10/73	2.28	2.42	0.04	0.05
Prob. 6/72-10/73	2.27	2.34	0.05	0.06
Prob. bef. 6/72	2.31	2.60	0.07	0.09
MALES				
Nonparents				
Single	2.01	2.18	0.02	0.02
Ever Married				
After 10/74	2.20	2.33	0.03	0.04
11/73-10/74	2.27	2.17	0.06	0.07
6/72-10/73	2.23	1.95	0.07	0.08
Before 6/72	1.84	2.23	0.35	0.42
Parents				
Single	2.03	2.47	0.09	0.10
Ever Married				
After 10/74	2.15	2.45	0.06	0.07
11/73-10/74	2.38	2.42	0.06	0.07
6/72-10/73	2.44	2.31	0.05	0.06
Before 6/72	2.37	2.42	0.10	0.12
Timing of First Child				
After 10/74	2.29	2.41	0.04	0.05
11/73-10/74	2.27	2.33	0.06	0.07
Before 10/73	2.42	2.41	0.06	0.08
Prob. 6/72-10/73	2.40	2.43	0.07	0.09
Prob. bef. 6/72	2.47	2.30	0.13	0.16

Table 26

INTERGROUP DIFFERENCES IN ADJUSTED MEANS
FOR EXPECTED NUMBER OF CHILDREN

Marital and Parenthood Status as of October 1976	Differences from Single Nonparents		Standard Errors	
	1973	1976	1973	1976
FEMALES				
Nonparents				
Single	----	----	----	----
Ever Married				
After 10/74	0.15	0.13	0.04	0.04
11/73-10/74	0.09	-0.14	0.05	0.06
6/72-10/73	0.00	-0.16	0.05	0.06
Before 6/72	-0.01	-0.24	0.12	0.14
Parents				
Single	-0.10	0.03	0.07	0.08
Ever Married				
After 10/74	0.16	0.32	0.07	0.08
11/73-10/74	0.23	0.16	0.06	0.06
6/72-10/73	0.18	0.18	0.04	0.05
Before 6/72	0.10	0.26	0.07	0.08
Timing of First Child				
After 10/74	0.23	0.21	0.04	0.05
11/73-10/74	0.06	0.07	0.05	0.06
Before 10/73	0.07	0.21	0.05	0.06
Prob. 6/72-10/73	0.05	0.13	0.05	0.06
Prob. bef. 6/72	0.09	0.38	0.07	0.09
MALES				
Nonparents				
Single	----	----	----	----
Ever Married				
After 10/74	0.19	0.14	0.04	0.04
11/73-10/74	0.26	-0.01	0.06	0.07
6/72-10/73	0.22	-0.23	0.08	0.08
Before 6/72	-0.17	0.05	0.36	0.42
Parents				
Single	0.02	0.29	0.09	0.10
Ever Married				
After 10/74	0.14	0.27	0.07	0.07
11/73-10/74	0.37	0.24	0.06	0.07
6/72-10/73	0.43	0.12	0.05	0.06
Before 6/72	0.36	0.24	0.11	0.12
Timing of First Child				
After 10/74	0.28	0.23	0.04	0.05
11/73-10/74	0.26	0.15	0.06	0.07
Before 10/73	0.41	0.22	0.06	0.08
Prob. 6/72-10/73	0.39	0.25	0.07	0.09
Prob. bef. 6/72	0.46	0.12	0.13	0.16

Table 27

PERCENTAGES OF WOMEN WHO PLAN TO BE HOMEMAKERS AT AGE 30
BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means				Sample Sizes			
	1972	1973	1974	1976	1972	1973	1974	1976
Nonparents								
Single	2.3	13.4	12.7	10.9	2714	3959	4032	4195
Ever Married								
After 10/74	3.7	21.2	24.1	32.0	910	1290	1331	1376
11/73-10/74	4.7	30.8	36.0	31.8	363	568	566	600
6/72-10/73	9.4	37.5	38.3	31.3	414	608	616	664
Before 6/72	15.4	31.4	30.6	29.3	52	86	85	92
Parents								
Single	4.6	18.6	15.6	17.3	151	377	391	404
Ever Married								
After 10/74	5.1	27.8	35.1	36.6	178	320	325	339
11/73-10/74	7.1	41.6	47.3	38.4	297	471	482	502
6/72-10/73	13.0	43.7	43.4	38.3	741	1247	1255	1283
Before 6/72	29.4	37.3	37.4	33.6	170	330	337	339
Timing of First Child								
After 10/74	7.4	38.9	42.3	38.2	680	1148	1169	1235
11/73-10/74	9.4	38.0	36.1	32.5	392	773	762	739
Before 10/73	19.6	32.7	33.3	30.0	434	846	818	797
Prob. 6/72-10/73	19.1	36.0	37.0	32.7	282	584	562	551
Prob. bef. 6/72	20.4	25.6	25.0	24.0	152	262	256	246

proportion for single women. Within marital status categories, the proportion of mothers who expect to be homemakers is higher than that for women who do not have children. Homemaker aspirations seem to be linked to the timing of parenthood, in that the women who became mothers before June 1972 aspire to homemaking careers in considerably lower percentages than those who became mothers later.

WELFARE DEPENDENCY

Table 28 shows that almost half of the NLS mothers who were still single in 1976 received welfare benefits of some kind, whereas only seven percent of the ever married mothers received public assistance. There is also evidence in the table indicating that the earlier the women become mothers, the more likely they are to be on welfare.

A further analysis of this table (as well as the corresponding table on homemaker aspirations) to adjust these percentages for differences across groups on background characteristics is still under way.

Table 28

PERCENTAGES OF WELFARE RECIPIENTS BY MARITAL AND PARENTHOOD STATUS

Marital and Parenthood Status as of October 1976	Sample Means 1975	Sample Means 1976	Sample Sizes 1975	Sample Sizes 1976
FEMALES				
Nonparents				
Single	1.7	1.9	3544	3440
Ever Married				
After 10/74	0.5	0.9	1117	1083
11/73-10/74	1.2	1.1	481	468
6/72-10/73	0.4	0.8	522	519
Before 6/72	0.0	0.0	77	77
Parents				
Single	39.6	45.6	351	349
Ever Married				
After 10/74	7.9	7.9	278	267
11/73-10/74	5.2	5.5	405	403
6/72-10/73	5.0	6.9	1009	993
Before 6/72	7.2	8.9	279	271
Timing of First Child				
After 10/74	7.1	8.9	1004	988
11/73-10/74	13.5	15.4	602	586
Before 10/73	14.6	17.1	639	636
Prob. 6/72-10/73	13.8	16.6	442	441
Prob. bef. 6/72	16.2	18.5	197	195
MALES				
Nonparents				
Single	1.5	1.6	4583	4457
Ever Married				
After 10/74	0.8	0.8	1054	1012
11/73-10/74	0.9	0.9	320	316
6/72-10/73	1.5	1.0	206	201
Before 6/72	0.0	0.0	7	7
Parents				
Single	2.5	4.6	198	197
Ever Married				
After 10/74	4.2	7.0	311	302
11/73-10/74	2.3	2.4	342	337
6/72-10/73	2.2	1.9	498	486
Before 6/72	0.0	1.1	94	92
Timing of First Child				
After 10/74	3.0	4.2	775	758
11/73-10/74	2.3	2.6	354	346
Before 10/73	2.0	2.8	251	246
Prob. 6/72-10/73	2.5	2.6	197	195
Prob. bef. 6/72	0.0	3.9	54	51

V. DISCUSSION

This study was undertaken primarily to study the effects of adolescent parenthood upon certain outcome measures that reflect changes in the aspirations, attitudes, and well-being of the NLS respondents over time. Our analysis indicates that the young parents differ considerably from the nonparents on many of these outcome measures. These differences shrink, however, when one allows for differences in background characteristics that are related with the outcome measures; and they shrink even further when one compares the outcome measures for married parents with those for married nonparents who were married at about the same time.

This is not to say that we found no apparent effects of parenthood. To the contrary, we found that, among married women, there is a clear shift in career aspirations associated with early parenthood. This shift was marked both by lower work orientation measures and a higher tendency to select homemaking as the most likely career at age 30. Among the married women, the mothers indicated less satisfaction with their career progress than the women without children, and the extent of dissatisfaction is related to timing of first birth. On average, adolescent parents expect to have slightly larger families than the nonparents, and there is an association between timing of childbirth and welfare dependency that merits further investigation.

For some outcome measures (e.g., educational aspirations) there is a measurable effect associated with early marriage, but the married parents do not seem to differ appreciably from the married nonparents.

It is not clear that this reflects an absence of parenthood effects. What we may be detecting is an effect due to economic exigencies and other circumstances associated with early family formation, whether or not the young couple have children. Since many adolescent marriages are instigated by premarital pregnancy, the effects of early family formation among these adolescents may reflect the consequences of adolescent parenthood.

This brings us back to the unresolved questions raised in Section II concerning the choice of comparison groups for estimating the parenthood effects. Our analysis has skirted the issue by presenting summary statistics that permit contrasting outcome measures across marital/parenthood status groups and over time. However, these statistics implicitly involve using the single nonparents as a control group for analyzing the consequences of parenthood. Also, we are interested in studying the extent to which young married couples with children differ from those without children. Accordingly, we intend to replicate our methodology using the large group of married nonparents as of October 1976 as our comparison group and incorporating duration of marriage as an additional independent variable. Since the married nonparents differ less markedly from the married parents in background characteristics, we should be able to place more credence in our procedures for adjusting intergroup differences and provide more precise estimates of the consequences of early parenthood.

APPENDIX A. A MODEL FOR ESTIMATING PARENTHOOD EFFECTS

Consider a sequence of observations over time on some outcome measure for an adolescent parent. Let Y_t denote the value of the measure at time t. Given perfect information about what would have happened if the adolescent had not become a parent, one could define the "effect of parenthood" on the measure Y_t as the difference Δ_t between Y_t and the value U_t that would have occurred if the adolescent had not become a parent, i.e.,

$$\Delta_t = Y_t - U_t \quad . \tag{1}$$

The methodology for this study is based upon the premise that, although the value U_t is not observable, it can be estimated indirectly using observations on other individuals with similar backgrounds and personal characteristics.

Suppose the adolescent with outcome measure Y_t was known to have a $1 \times p$ vector of characteristics X measured before his or her involvement in parenthood. Moreover, suppose that the components of X include measures of ability, socioeconomic status, aspirations, and other attributes that would constitute a basis for predicting the adolescent's future outcomes with some certainty, provided that the adolescent did not become a parent. Given a sufficiently rich data base on individuals with similar characteristics, one could estimate U_t using the conditional expectation of U_t given X, and thereby estimate Δ_t in (1) using

(2) $$D_t = Y_t - E(U_t|X) \quad .$$

Thus, the effect of parenthood could be estimated using the difference between the observed outcome measure Y_t and the predicted value of U_t based upon observations on other individuals having similar characteristics who did not become parents.

To incorporate possible measurement errors into the above formulation, suppose that Y_t contains an error of measurement e_t and let $\eta_t = Y_t - e_t$ denote the "true" outcome measure corresponding to Y_t. Then the effect of parenthood at time t is defined to be

(3) $$\delta_t = \eta_t - E(U_t|X) \quad .$$

It follows from (1) and (3) that

(4) $$Y_t = \delta_t + E(U_t|X) + e_t \quad .$$

Given a sequence of observations $Y = (Y_{t_1}, Y_{t_2}, \ldots, Y_{t_k})$ on the adolescent parent at k points in time, one can apply (4) to each component of Y to get

(5) $$Y = \delta + E(U|X) + e$$

where δ, U, and e are all $1xk$ vectors, and the components of δ represent the effects of parenthood at different points in time. The methodology below implicitly assumes that, for a suitable choice of the components of X, the term $E(U|X)$ is a linear function of X, say $\alpha + X\beta$, where the components of α and β are parameters that can be estimated from a sample of nonparents. For the sake of simplicity below, we will restrict our discussion to the case $k = 1$.

Deferring for the moment the problems associated with estimating the parenthood effects δ for adolescent parents, note that the above formulation implicitly assumes that the effects of parenthood are individual in nature and can be estimated as deviations from patterns observed among nonparents. Given estimates of the individual effects for a large sample of parents, one can still estimate the average parenthood effect by simply averaging the individual effects for a representative sample of parents. Moreover, one can categorize the parents (e.g., by parity, timing of first child, marital status, or educational attainment) to determine how the average parenthood effects vary across categories of parents.

The above formulation can be used to conceptualize deviations of outcome measures for individuals in any subpopulation relative to a suitably chosen "control group." In this study, we hoped to distinguish the effects of early marriage from those associated with parenthood, and we wanted to explore the effects of the timing of family formulation. Therefore, the subpopulations of interest were defined in terms of marital status and parenthood status at various points in time. A convenient control group for our purposes was the large sample of NLS respondents who remained single and did not become parents until after the Third Follow-up Survey.

The problem of estimating the individual parenthood and marital effects can be viewed as a problem of estimating individual treatment effects based upon observations of outcome measures Y from several groups of individuals:

Control group: $Y_{11}, Y_{12}, \ldots, Y_{1n_1}$

Treatment groups: $Y_{21}, Y_{22}, \ldots, Y_{2n_2}$

. . .

$Y_{I1}, Y_{I2}, \ldots, Y_{In_I}$

Associated with each of the observations Y_{ij} is a $1xp$ vector of characteristics X_{ij} having components that are deemed suitable for predicting the outcome measures Y_{ij} in the absence of the treatments.

Adopting the individual effects formulation (5) and the assumption that $E(U|X)$ is linear in X, we hypothesize the following model:

$$(6) \qquad Y_{1j} = \alpha + X_{1j}\beta + e_{1j}$$

$$Y_{ij} = \eta_{ij} + e_{ij} \qquad \text{for } i = 2, 3, \ldots, I.$$

The treatment effect for the jth individual in the ith treatment group is defined by

$$(7) \qquad \delta_{ij} = \eta_{ij} - (\alpha + X_{ij}\beta) \quad .$$

Alternatively, the model (6) can be written in the form

$$(8) \qquad Y_{ij} = \delta_{ij} + \alpha + X_{ij}\beta + e_{ij}$$

where $\delta_{1j} = 0$ for all j.

This model makes no assumptions whatsoever about the pattern of the treatment effects δ_{ij}. By contrast, the usual analysis of covariance model for comparing treatments can be parameterized in the form

(9) $$Y_{ij} = \delta_i + \alpha + X_{ij}\beta + e_{ij}$$

where $\delta_1 = 0$. This amounts to assuming that the treatment effect is the same for all individuals in the same treatment group. Estimation procedures for models (8) and (9) will be compared below.

A third alternative that will be considered stems from the assumption that the means η_{ij} are linear functions of the X_{ij}'s within each group, but the regression coefficients differ from group to group as follows:

(10) $$Y_{ij} = \alpha_i + X_{ij}\beta_i + e_{ij} \quad .$$

In this case, the treatment effect for the jth individual in the ith treatment group relative to the control group would be defined by

(11) $$\delta_{ij} = \eta_{ij} - (\alpha_1 + X_{ij}\beta_1) = (\alpha_i + X_{ij}\beta_i) - (\alpha_1 + X_{ij}\beta_i) \quad .$$

In either of the cases (7) and (11), the average treatment effect for individuals in the ith group is defined by

(12) $$\delta_{i.} = \Sigma_{j=1}^{n_i} \delta_{ij} / n_i \quad .$$

Under the assumptions that the errors e_{ij} are independent random variables with mean zero and variance σ^2, the best linear unbiased estimators (BLUEs) of the parameters are the least-squares estimators.*

*This is an implication of the Gauss-Markov Theorem; see Henry Scheffé, The Analysis of Variance, Wiley, New York, 1959, p. 14. For the multivariate analogue of the Gauss-Markov Theorem in the case that Y_{ij} is a $1 \times k$ vector and the error terms e_{ij} are random vectors with zero means and a common covariance matrix, see Neil H. Timm, Multivariate Analysis with Applications in Education and Psychology, Brooks/Cole Publishing, Monterey, California, 1975, p. 187.

Thus, under the individual effects model (8), the BLUEs of the parameters δ_{ij}, α, and β are the values that minimize

$$\Sigma \Sigma (Y_{ij} - \delta_{ij} - \alpha - X_{ij}\beta)^2 \quad .$$

Here, we are implicitly assuming that there are no missing values, a ubiquitous problem throughout this study that will be discussed later. In the case that the data are complete, it follows readily from a consideration of the least-squares criterion that the BLUEs can be obtained using the following three-stage procedure:

(a) Estimate the parameters α and β using the least-squares estimators $\hat{\alpha}$ and $\hat{\beta}$ based upon the control group observations only.

(b) Predict the responses Y_{ij} for the treated individuals ignoring the possible treatment effects using

$$\tilde{Y}_{ij} = \hat{\alpha} + X_{ij}\hat{\beta} \quad . \tag{13}$$

(c) Estimate the individual treatment effects using

$$\hat{\delta}_{ij} = Y_{ij} - \tilde{Y}_{ij} \quad . \tag{14}$$

It then follows from the Gauss-Markov Theorem that the BLUEs of the average treatment effects are

$$\hat{\delta}_{i.} = \Sigma_{j=1}^{n_i} \hat{\delta}_{ij} / n_i \quad . \tag{15}$$

In large data sets or in the case of missing values, it is not feasible to evaluate these estimators using the three-stage procedure outlined above. To obtain simpler formulas comparable to those used

in analysis of covariance, let $\bar{Y}_i$ denote the mean of the outcome measures in the ith group and let $\bar{X}_i$ denote the corresponding mean vector of the X_{ij}'s. Since

$$(16) \qquad \hat{\delta}_{ij} = Y_{ij} - \hat{\alpha} - X_{ij}\hat{\beta} = (Y_{ij} - \bar{Y}_1) - (X_{ij} - \bar{X}_1)\hat{\beta} \ ,$$

it follows that

$$(17) \qquad \hat{\delta}_{i.} = (\bar{Y}_i - \bar{Y}_1) - (\bar{X}_i - \bar{X}_1)\hat{\beta} \ .$$

This is the formula that was actually used in the calculations, where the means and regression coefficients were estimated from the incomplete data.*

It is interesting to compare the estimators in (17) with the estimators derived under alternative assumptions. The corresponding analysis of covariance formula for the model specified by (9) is like (17) except that the vector of regression coefficients $\hat{\beta}$ computed from the control group observations is replaced by the pooled estimator of β across the control and treatment groups. In cases where the mean vectors $\bar{X}_i$ differ considerably and the within groups regression coefficients also differ, the analysis of covariance formula can lead to considerable bias in estimating the average treatment effects.

*The means, variances, and correlations needed to compute the regression coefficients were estimated separately by sex from the observations on the single nonparents using the CORRAI method described in BMDP Biomedical Computer Programs, P-series, University of California Press, 1979, Chapter 12.

Instead of assuming that the individual treatment effects are completely unstructured as in (8), one may want to make the assumptions implicit in (10). In this case, it can be shown that the BLUEs of the average treatment effects defined in (11) and (12) are exactly the same as in (17). However, the estimates of σ^2 are different in the two models, leading to different t-statistics and standard errors for the regression coefficients.

The residual sum of squares SS_e for the individual effects model (8) is the residual sum of squares for the control group only. In the case of missing data, SS_e can be estimated using the formula

$$SS_e = n_1(1 - R^2)s_y^2 \quad , \tag{18}$$

where s_y^2 is the sample variance of Y in the control group, and R is the multiple correlation coefficient of Y with the components of X. Except for the calculation of the means $\bar{Y}_i$ and $\bar{X}_i$, all calculations are performed on the control group observations only; this leads to substantial computational savings in analyzing large data sets, especially when missing-values techniques are required. By contrast, the residual sum of squares for the model (10) is the pooled residual sum of squares over all treatment groups, which requires separate regression calculations for each group. Thus, although the models (8) and (10) yield the same estimates of the average treatment effects, the less restrictive model (8) leads to simpler calculations.

The adjusted means reported in several tables in this study are analogous to the adjusted means often reported in conjunction with analysis of covariance. They are defined by

$$\tilde{\bar{Y}}_i = \bar{Y}_i + (\bar{X}_1 - \bar{X}_i)\hat{\beta} \quad . \tag{19}$$

The variances of these adjusted means are given by

$$\mathrm{Var}(\tilde{\bar{Y}}_i) = (\sigma^2/n_i) + (\bar{X}_1 - \bar{X}_i)\,\hat{\Sigma}_{\hat{\beta}}\,(\bar{X}_i - \bar{X}_i)' \quad , \tag{20}$$

so that the standard errors of the adjusted means can be calculated from

$$\mathrm{s.e.}(\tilde{\bar{Y}}_i) = [(S^2/n_i) + (\bar{X}_1 - \bar{X}_i)\,\hat{\Sigma}_{\hat{\beta}}\,(\bar{X}_i - \bar{X}_i)']^{1/2} \quad , \tag{21}$$

where S^2 and $\hat{\Sigma}_{\hat{\beta}}$ are the usual unbiased estimators of σ^2 and $\Sigma_{\hat{\beta}}$. Note that formulas (19)-(21) also apply when $i = 1$.

To obtain formulas for the standard errors of the estimated average treatment effects, we note that $\hat{\delta}_{i.} = \tilde{\bar{Y}}_i - \tilde{\bar{Y}}_1$ and use the fact that $\tilde{\bar{Y}}_1$ and $\tilde{\bar{Y}}_i$ are uncorrelated to obtain that

$$\mathrm{Var}(\hat{\delta}_{i.}) = \mathrm{Var}(\tilde{\bar{Y}}_i) + \mathrm{Var}(\tilde{\bar{Y}}_1) \quad \text{for } i > 1 \quad , \tag{22}$$

implying that

$$[\mathrm{s.e.}(\hat{\delta}_{i.})]^2 = [\mathrm{s.e.}(\tilde{\bar{Y}}_i)]^2 + [\mathrm{s.e.}(\tilde{\bar{Y}}_1)]^2 \quad . \tag{23}$$

Thus, given the adjusted means and their standard errors, one can immediately derive the $\hat{\delta}_{i.}$'s and their standard errors.

To draw comparisons between any two treatment groups, one can use

$$\hat{\delta}_{i.} - \hat{\delta}_{j.} = \tilde{\bar{Y}}_i - \tilde{\bar{Y}}_j = \bar{Y}_i - \bar{Y}_j - (\bar{X}_i - \bar{X}_j)\hat{\beta} \tag{24}$$

and deduce that

$$(25) \qquad \mathrm{Var}(\hat{\delta}_{i.} - \hat{\delta}_{j.}) = \sigma^2(n_i^{-1} + n_j^{-1}) + (\bar{\bar{X}}_i - \bar{\bar{X}}_j)\,\Sigma_{\hat{\beta}}(\bar{\bar{X}}_i - \bar{\bar{X}}_j)' \ .$$

Since the last term is positive and small (β is estimated from over 4000 cases for females and 6000 cases for males), a useful approximation and lower bound for the standard error is given by

$$(26) \qquad \mathrm{s.e.}(\hat{\delta}_{i.} - \hat{\delta}_{j.}) \doteq S(n_i^{-1} + n_j^{-1})^{1/2} \ .$$

However, it is more important to have an <u>upper</u> bound for the standard error. It follows from (24) and (19) that

$$(27) \qquad \begin{aligned} \mathrm{Var}(\hat{\delta}_{i.} - \hat{\delta}_{j.}) &= \mathrm{Var}(\tilde{\bar{Y}}_i - \tilde{\bar{Y}}_j) \\ &= \mathrm{Var}(\tilde{\bar{Y}}_i) + \mathrm{Var}(\tilde{\bar{Y}}_j) - 2\mathrm{Cov}[(\bar{\bar{X}}_1 - \bar{\bar{X}}_i)\hat{\beta},\ (\bar{\bar{X}}_1 - \bar{\bar{X}}_j)\hat{\beta}] \\ &= \mathrm{Var}(\tilde{\bar{Y}}_i) + \mathrm{Var}(\tilde{\bar{Y}}_j) - 2(\bar{\bar{X}}_i - \bar{\bar{X}}_i)\,\Sigma_{\hat{\beta}}\,(\bar{\bar{X}}_i - \bar{\bar{X}}_j)' \ . \end{aligned}$$

The last term will tend to be small and negative, because the vectors $\bar{\bar{X}}_i$ and $\bar{\bar{X}}_j$ tend to deviate from $\bar{\bar{X}}_1$ in the same direction. Ignoring the last term leads to the approximation formula

$$(28) \qquad [\mathrm{s.e.}(\hat{\delta}_{i.} - \hat{\delta}_{j.})]^2 \doteq [\mathrm{s.e.}(\tilde{\bar{Y}}_i)]^2 + [\mathrm{s.e.}(\tilde{\bar{Y}}_j)]^2 \ ,$$

which will ordinarily provide an upper bound for the standard error. Thus, the tables of adjusted means and standard errors can be used to approximate (and provide bounds for) the standard errors of the differences between groups.

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