The relationship between fertility intentions and actual fertility has certainly been well-researched, but the role that income may or may not play in micro-level fertility intentions and behavior in industrialized countries has not been thoroughly investigated. Most of the attention towards the income-fertility relationship has been directed towards the differences between nations, not families, although the theories might be applicable to both levels. The economist Gary Becker originally argued that children are like "consumer durables"—as people become richer, they should want more of them (and, by implication, have more of them). He and his disciples have tried to see whether or not the evidence supports this theory, and the inconclusive debate continues to rage. Becker (1973)[1] later elaborated on his theory by suggesting that wealthier people come to want higher "quality" children, while for poorer people "quantity" of children can make up for unattainable "quality," and this theoretical contribution has been his most influential one. Blake (1967)[2] (looking only at Whites) observed that there were few differences in the fertility "ambitions" of income groups. She argues that income does not seem to be a major influencing factor on ideal number of children, contrary to the expectations of Becker and other family economists. Blake and Del Pinal (1979)[3] found that between 1945 and 1977, income—whether family's or husband's—was a very insignificant predictor of family size preferences, while the influence of race and education had greatly increased in significance during the same time period. Thornton (1980)[4], looking at the short period between 1972-4, observed that husband's income was significantly associated with actual fertility in 1972, but not 1974. He points out that most economic theories predict a positive relationship between income and childbearing, but a negative relationship between occupation/education and childbearing; the conflicting effects of these two highly correlated variables may ultimately cancel one another out. Freedman and Thornton (1982)[5], controlling for education, found that there was no relationship between fertility and income once they controlled for unwanted pregnancies. Therefore, the research to date indicates that while fertility intentions are good predictors of fertility behavior for all Americans, wealthier Americans are better able to realize their intentions and expectations. Presumably, higher income increases individuals' access to methods of fertility control, thus differentiating their ability to realize their fertility goals, either in terms of "excess" or "deficit" fertility (Neal and Groat 1980[6]). Nevertheless, in more recent years, as many people have delayed parenthood, the problem of deficit fertility in America seems to be greater than that of excess fertility, so closer fertility achievement often may actually mean having more, not fewer, children (Quesnel-Vallee and Morgan 2003[7]).

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[1] Becker, G.S. and Lewis, H.G. (1973). "On the interaction between quantity and quality of children." Journal of Political Economy. 84: 279-88.

[2] Blake, J. (1967). "Income and Reproductive Motivation." *Population Studies*. 21(3): 185-206.

[3] Blake, J. and Del Pinal, J.H. 1979. "Predictors of family-size preferences, 1945-1977: A multivariate analysis." *Social Biology*. 26(4): 302-313.

[4] Thornton, A. (1980). "The influence of first generation fertility and economic status on second generation fertility." *Population and Environment*. 3(1): 51-72.

[5] Freedman, D.S. and Thornton, A. (1982). "Income and fertility: The elusive relationship." *Demography.* 19(1): 65-78.

[6] Neal, A.G. and Groat, H.T. 1980. "Fertility decision making, unintended births, and the social drift hypothesis: A longitudinal study." *Population and Environment*. 3(3-4): 221-236.

[7] Quesnel-Vallee, A. and Morgan, S.P. (2003). "Missing the target? Correspondence of fertility intentions and behavior in the US." *Population Research and PolicyReview*. 22 (5-6): 497-525.

For these purposes, "number of children" and "fertility" refer to the number of children a person has ever had. The "normative-ideal number of children" refers to the number of children people think is ideal for a family to have. Demographers are not certain if people construct this number around a mental conception of an ideal-type family in ideal circumstances, if they are answering the question in terms of how many children they themselves would like to have if they lived in ideal circumstances, or some combination of the two. "Expected number of children" refers to people's own fertility expectations—how many children they personally expect to have. Unfortunately, this information will never reveal negatives (i.e., it will not tell us if respondents already had a child or children that they did not expect), so it most accurately represents the expectations of those who have not yet begun childbearing. For a cross-sectional analysis like this one, the closest measure we have of total fertility desires comes from "ideal number of children." Previous research does not tell us to what extent "ideal number of children" reflects fertility intentions per se; preliminary data analysis revealed that the correlation between total expected family size (number of children plus expected number of children) and ideal number of children was 0.32425 ($p<.0001$)—a sizable relationship, but certainly not large enough for us to consider the two variables highly correlated. Therefore data on "ideal number of children" do not reveal information about people's fertility intentions.

There have been many social changes from 1972-1998 which should radically affect actual fertility. First, extremely reliable contraception became available to virtually all women around 1972 in the form of the birth control pill and the IUD (Goldin and Katz 2000). Married women had had access to the pill since it entered the market in 1963, but unmarried women had had very limited access until mature-minor laws were passed in the early 1970's. Second, abortion became legal throughout the country in 1973. Several states had had legal abortions before that time, but women had had very limited access to them, and the abortion rate steadily climbed until the 1980's. While we generally think of contraception and abortion as aids to fertility limitation, their most important role is really to provide greater fertility *control*. Contraception and abortion not only allow people to manage how *many* children they have, they also permit people to control *when* they have children. The actual fertility rate began to decline long before the advent of these technologies, but women and couples could now make much more secure fertility plans and goals, believing that they had fairly certain control over their fertility.

Fertility control technologies have given people the ability to make reasonably confident plans about the number of children they want. With greater fertility control, the concept of "expected fertility" is much more meaningful. Having the capability to reliably plan births allows women and couples to make more secure life plans. Having secure life plans allows people to invest in their education and realistically anticipate returns. We should not be surprised, then, that during this same time period women greatly increased their labor force participation. The relationship between women's labor force participation and contraception was likely cyclical: women had been increasing their labor force participation since the Depression, creating a need for more reliable contraception, and more reliable contraception permitted women to invest more heavily in careers outside the home. Many (if not most) younger women no longer give absolute priority to their role as nurturers; simultaneously, children have become more expensive—as college attendance has increased, and children rarely provide economic

returns for their parents. As both women's and men's time and attention were diverted outside of the family sphere, and children increasingly became an economic liability, smaller family sizes became more advantageous. We should expect to see a decrease in expected and normative-ideal fertility as a result. People's "ideal number of children" could still be their "ideal" family size under ideal family living conditions (which might include having perfect childcare arrangements, a stable partner, and/or a stay-at-home parent) and would thus remain basically the same over time. However, I suspect that necessity has slightly altered, though not radically re-formed, these "ideals." If ideals for marriage, and men's and women's roles have changed, we should expect fertility ideals to change accordingly. Therefore the combined impact of available contraception and abortion and women's increasing participation outside of the domestic sphere should mean that,

> **H_1:** *Controlling for other factors, the actual and expected number of children for a family has fallen between 1972 and1998, but the normative-ideal number of children has fallen less.*

The impact of contraception and abortion availability and female labor force participation should not have affected all groups equally. Since access to technology is now an important tool for realizing fertility ideals, higher income should permit the relatively greater achievement of fertility ideals and goals. Wealthier people should be able to buy the contraceptives, abortions, and sterilizations needed to maximize fertility control. Thus,

> **H_2:** *Income should reduce the gap between actual and ideal fertility, and the gap between ideal and expected fertility, net of other effects.*

The General Social Survey (GSS) provides relevant data to answer these hypotheses from 1972-1998. The National Opinion Research Center conducts the GSS "nearly" annually, and obtains responses from the U.S. population ages eighteen and older. Because this analysis employs data from multiple years, approximately 24,000 cases were used, with an average of 1,090 cases per year. The primary dependent variable comes from CHILDS ("How many children have you ever had? Please count all that were born alive at any time (including any you had from a previous marriage)"). The primary independent predictor variables come from CHLDIDEL ("What do you think is the ideal number of children for a family to have?"), INCOME ("In which of these groups did your total family income, from all sources, fall last year before taxes, that is?"). I constructed another independent variable called EXPFAM to give information about expected completed fertility from CHILDS, CHLDMORE ("Do you expect to have any (more) children?"), and CHLDNUM ("If yes, how many (more)?"). Then I created two more dependent variables to look at the gaps between actual and desired fertility: GAPIDEAL, which only applies to people 43 or over who have presumably completed their fertility, is CHLDIDEL minus CHILDS; GAPIDEAL applies to all ages and consists of EXPFAM minus CHLDIDEL.

The GSS presents income as a categorical variable (e.g. $3000 to $3999), but using income as a categorical variable is impractical, so this analysis required more precise data. Consequently, this analysis used rounded midpoints of each data segment (e.g. $3500 for "$3000 to $3999"). However, the final income category in each year is

some threshold "plus"; clearly, no midpoint exists for such a figure, but a commonly accepted formula to fit the Pareto distribution to this upper income distribution does exist. I employed this formula and adapted my data accordingly. Yet this analysis still needed some measure of income which could be used for cross-year analysis. Using Consumer Price Index (CPI) adjustments, I adjusted each year's income to 1998 dollars to enable cross-year comparisons, resulting in a variable called REAL98INC.

Control variables were extremely important for this analysis, due to the many biological and social influences on fertility behavior. Reason suggests that age is an especially important control, because older people have had longer to accumulate both children and economic resources. Similarly, controlling for education is essential when looking at the effect of income since education tends to lead to higher income; yet theoretically, education should decrease fertility and fertility expectations, while income should increase them. Despite their links, the Pearson correlation coefficient for education and income across all years for this data is .37 ($p<.0001$). Though the normative power of marriage as a condition for fertility has been declining in recent years, it still exerts considerable influence on fertility and certainly should have done so in 1972, so marital status should be another important control[8]. Independent of other effects—including female labor force participation, beliefs about gender norms were still significant predictors of fertility in the 1980's[9]. The effects of early socialization should be present from parents' number of children (respondent's number of siblings)[10], and respondent's religion, which previous research indicates should attenuate across time[11].

This analysis uses Ordinary Least-Squares regression to assess the effects of income, normative-ideal, and individual-ideals on actual number of children, by year groups and age, net of other effects. Preliminary analysis suggested that three age groupings would most accurately represent fertility trends: a low-fertility group (age≤35), a mid-range fertility group (36≤age≤47), and a completed fertility group (age≥48). I produced multiple models, beginning with income only, and then accumulated control variables. Final models collapse all years together, employing YEAR as a variable, and an interaction effect between year and income. Finally, I used OLS regression to analyze the effect of income and class on EXPFAMILY and GAPIDEAL across all years.

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[8] *Ibid*.

[9] Rindfuss, R.R.; Guzzo, K.B.; Morgan, S.P. (2003). "The changing institutional context of low fertility." *Population Research and Policy Review*. 22 (5-6): 411-438.

[10] Clay, D.C. and Zuiches J.J. (1980). "Reference Groups and Family Size Norms." *Population and Environment*. 3: 262-79.

[11] Goldscheider, C.G. and Mosher, W.D. (1991). "Patterns of Contraceptive Use in the United States: The Importance of Religious Factors." *Studies in Family Planning*. 22: 102-115.