Evidence for Stopping Behavior, Not Delayed Reproduction, as the Driving Force of Fertility Transition among Lehrerleut Hutterites of Montana

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Abstract: In this paper we describe research conducted from 2004 - present among a socially and religiously conservative sect of German-speaking Anabaptist Hutterites living in colonies in Montana. While every demographer in the world knows of the Hutterites of North America, the recent dramatic transition to lower fertility in this community is less known, and is poorly understood. Using both retrospective and on-the-ground qualitative ethnographic data, this study breaks new ground both methodologically and theoretically in the study of fertility transition among Hutterites. Our data show that, like other populations in which a high social value is placed on the production of children, the recent remarkable drop in Hutterite fertility is being achieved via stopping behavior, or early attenuation of reproductive period through the use of contraception. We discuss the significance of this finding in light of Hutterite religiosity and communalism, and in the context of recent developments in evolutionary demography.

Biosketches

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Background

Between the mid 1600s and the mid 1800s, Hutterites found their way from Moravia through Russia to the northern plains of North America. The early demographic situation for this community after settlement in North America was remarkable. Hutterites in all new world colonies had extraordinarily high fertility rates and very rapid community growth, to the extent that demographers still use Hutterite completed family sizes from the early 1900s as the demographic standard for maximum fertility for humans[1]. While every demographer in the world knows of the Hutterites of North America, the recent dramatic transition to lower fertility in this community is less known, and is poorly understood. The data presented in this paper come from records of vital statistics from all Lehrerleut Hutterites since they settled in North America in 1872, in combination with ethnographic information from our prospective, longitudinal study of three Hutterite colonies close to The University of Montana, where we have studied the ongoing fertility transition among Lehrerleut Hutterites of Montana since 2003. The Hutterites are still culturally isolated from mainstream North America, distinguished by language, dress, economic organization, strict gender roles, and religion. Our data support the findings of other scholars of Hutterite demographic patterns, and show that fertility rates are dropping significantly in recent decades, and the decreases appears to be continuing.

Recent theorizing from human behavioral ecologists about fertility transitions worldwide centers on the timing and pressures associated with entrance into a competitive labor market (*sensu* Kaplan 2002, Kaplan et al 2001) and the importance of delayed reproduction. In fact the empirical support for this pattern is patchy. In many societies, reductions in fertility are achieved via stopping behavior – the attenuation of the reproductive period *after* a woman has established her fertility and provided her husband and affines with children (see, for example,

Anderton 1989, Greska 2002, Hionidou 1998, Knodel 1987, McDonald and Knodel 1989) . Lehrerleut Hutterites of Montana display the same pattern. A woman cannot allow her loyalty to her husband and affines, or to her religion, to be jeopardized by speculation about why she does not conceive shortly after marriage. Interference with infamous Hutterian 'natural fertility' later in the life course, by contrast, is increasingly acceptable.

Hutterites: Modern Anabaptists and a cultural isolate within North America

The Hutterite faith and founding population originated during the Protestant Reformation in the sixteenth century. They are one of three remaining Anabaptist sects from that period, along with the Mennonites from the Netherlands and the Old Order Amish (formerly Mennonites) from Switzerland. Derived from south Germany and Austria, the speech of the Hutterites, a German dialect resembling that spoken in the province of Carinthia in Austria and influenced by the Slavic languages, reflects a cultural and geographic background different from the Dutch Mennonites and the Swiss Amish (Hostetler, 1997). The Hutterian brethren were vigorously opposed by the Catholic Church in historical times, due in large part to their belief in adult baptism and their rejection of membership in a state or all-inclusive church (Huntington and Hostetler 2002). Communalism and pacifism are two other hallmarks of Hutterite culture and have done little to ingratiate them to their neighbors. To this day, Hutterite identity is powerfully shaped by a history of religious, economic and political persecution, including the memory of their founding fathers burning at the stake and a fairly regular need to flee their lands in search of more tolerant neighbors (Hostetler 1967, 2002).

The Hutterites regard 1528 as their founding date. While fleeing from Nidolsburg to Austerlitz, Moravia "the promised land" they introduced a practice of "community of goods", which marked the first common household and communal sharing was made the norm (Hostetler 1997). The Hutterites remained in Moravia for a short time, and due to their outstanding craftsmanship and farming were tolerated by the local barons. It was then that they experienced their first growth and primitive form of expansion by multiplying to approximately 80 colonies with an estimated population of about 20,000 people (Huntington and Hostetler 2002). During this period they prospered as a group. Literacy rates were high, colony members all pursued a trade, and Hutterite physicians and midwives were in great demand. However, with the outbreak of war between Austria and Turkey in 1593 and the following Thirty Years War, the Hutterites were forced to flee Moravia due to constant raiding, torture and risk of capture. They wandered Slovakia, Hungary, Transylvania and Romania only to find more persecution and state demands to convert to Catholicism.

It was not until 1786 that Catherine II, in need of skilled craftsmen and agriculturalists, invited the Hutterites and other German groups to settle in the Ukraine region (Radtke 1971). Although the Hutterites were granted religious freedom, exemption from military service, vast agricultural lands and free practice of their trades, their position in Russia was never secure. Communalism was abandoned from 1819 to 1859, marking a period of poverty, illiteracy and declining morale, followed by a period of religious renewal (Huntington and Hostetler 2002). Communal life was re-established and conditions for the Hutterites began to improve again, until the Russian government revised its hospitable attitude toward colonists including the Hutterites. Russia's universal military training act of 1872 was the final straw for the pacifist Hutterites, and they left Russia for North America.

Adaptation to North America

In North America, the experience of persecution did not disappear. Hutterite pacificism, communalism and pro-natalism in North America have led to generations of conflict with neighbors on the Northern Plains, who, even contemporarily, find the thought of rapidly growing Hutterite colonies threatening and worrisome (Hartse 1994).

After migrating to the Northern plains of North America, the Hutterites experienced a period of prosperity and population growth. An estimated 1,200 Hutterites relocated to South Dakota in 1874 (Hostetler 1997). Their need for large isolated blocks of land for colony dwelling rendered them ineligible for homesteading privileges, and about two-thirds of the Hutterites chose to depart from colony life to homestead family farms. This group comprise what the Hutterites now call Prairie-Leut or "prairie people" (Hostetler and Huntington 2002). The remaining 443 Hutterite people founded three colonies in South Dakota and today are acknowledged as three distinct people the Schmiedleut, Dariusleut and Lehrerleut taking their names from the first leaders in the United States (Ingoldsby and Stanton 1988). The three share a common doctrine, language and social system, but each has its own senior elder and sense of orthodoxy, with the Lehrerleuts widely regarded as the most conservative of the three sects (Hostetler and Huntington 2002). From South Dakota the Hutterites spread to Montana, Washington, and parts of Canada, where they are found today.

Unfortunately, the transition to the United States was not a smooth one. Although the colonies were prosperous and the population had risen from 1,200 to 2,000 in 1917 (Hostetler 1997), with the outbreak of World War I they were subjected once again to intense scrutiny. The attitude of the public shifted to hostile intolerance when their pacifism and German dialect were viewed in

light of the war. During the draft, colony leaders instructed young Hutterite men to register and report for their physical examinations, but prohibited further participation (Hostetler 1997). It was during this time that all but one of the eighteen colonies of Hutterites migrated to Canada, returning after their pacifism was no longer an issue and the United States government was encouraging farm populations as a result of the Depression (Radtke 1971).

Fertility History: Pronatalism, low mortality and religious intolerance of contraception

With an average completed family size documented in the 1950s of at least 11 children, Eaton and Mayer established in their landmark study in 1953 that the Hutterites set the demographic standard for maximum fertility (Eaton and Mayer 1953, 1954). The Hutterites were considered a stable population, unaffected by some of the common social factors as migration, birth control practices and changing marriage patterns. Their extremely high rate of fertility can be attributed to multiple factors, many of which are grounded in their history and cultural systems. These include their religious ideology, communal way of life and their motivation for rapid expansion and growth.

Because of the hardships the Hutterites faced throughout their history in Europe, population growth was one of their main goals when they migrated to the United States. In fear of extinction with only 443 members, they were encouraged to reproduce at a very rapid rate. The Hutterite population grew from 443 persons in 1880 to 8,542 persons in 1950 (Ingoldsby and Stanton 1988). This represents an annual increase between 1940 and 1950 of 52.1%; in the same period the United States population increased only 14.5%. Similarly, the average annual Hutterite growth rate has been documented at 4%, while that of the rest of the United States is

.79% (Eaton and Mayer 1953). This growth rate, attributable solely to the excess of births over deaths, was the highest documented for any human community (Eaton and Meyer 1953, Cook 1968), though other high fertility communities have been documented elsewhere, such as cotemporary US immigrant communities (e.g. Weeks et al 1989) or other pre-fertility transition communities (e.g., the Shipibo of Peru, as documented by Herns 1977, 1992). The motivation to reproduce in the early 1900s has helped to maintain the consistently high fertility rate among the Hutterites and has created a population which has remained consistently young in age.

As is true for most American groups in the early 1900s, the early Hutterite population was predominately youthful. In mainstream America, this was the result of a combination of high birth rates, relatively low life expectancy and the influx of young people among immigrants (Eaton and Mayer 1953). During the following 50 years, however, in the mainstream population, the proportion of older people increased steadily. The Hutterites did not follow this trend. In 1950, even more than in 1880, they were still a very youthful group (Eaton and Mayer 1953). Tables 1 and 2 show the distribution of the Hutterite population by age and sex for June 1880 and December 1950 (Eaton and Mayer 1953). The tables show the extreme growth in population in this period, as well as the large number of people under the age of 50, which was sustained through the 1950s. The evidence of a younger population is consistent with a group that has extremely high fertility and sets the Hutterites apart from the rest of American society.

Tables 1 and 2 about here.

Also evident in the tables is the male predominance among the older age groups. Hutterite men who live beyond 40 appear to have a greater life expectancy than women, a trend that is most likely related to the large number of pregnancies experienced by the great majority of Hutterite wives (Eaton and Mayer 1953).

In most cultural settings a rapid population growth like the one experienced by the Hutterites would tend to be controlled by difficulties in providing for offspring with the essentials of food, clothing, shelter and medical care as in many developing countries. However, the Hutterite economy, religious beliefs and value system are uniquely designed to deal with these issues and have traditionally promoted and sustained large families.

The Hutterites regard themselves as Christian believers maintaining the proper social order. In the Hutterite worldview, the continued existence of their society is secondary only to obedience to God. Our informants repeat this belief often and in a variety of forms, all of which underscore the abhorrence of their religion for contraceptive behavior of any kind. Ethnographic evidence from the mid twentieth Century reveals that Hutterites traditionally referred to any form of birth control as murder. Hutterite children are taught that as Christians they are not to interfere with the giving or taking of human life, and this lesson is repeated often in daily life at all age levels. Within marriage, children are regarded to be gifts from God. In many cases Hutterites were unwilling to perform the 'grave sin' of contraception, even upon the advice of a doctor. Traditionally, even natural forms of birth control or fertility limitation such as the rhythm method or *Coitus interruptus* were seen as sinful. The function of the nuclear family is to produce new souls and to care for them until the colony takes over the greater responsibility of providing for its members. If a couple has been married for a year without a

pregnancy people begin to wonder if the husband or wife is healthy and to regard their union with concern (Eaton and Mayer 1953).

Communal Life Supports Large Families

In addition to strict religious affiliation, one attribute of Hutterite life that has contributed to their population growth in the mid 1900s has been their ability to remain highly structured and very stable. Peter (1980) linked the high fertility rate of Hutterites with "the maintenance of the psychologically satisfying opportunity structures in these communities; the ability to accumulate capital within these communities and the environmental conditions which allowed Hutterites to translate their high birth rate and their financial capacities into territorial expansion (1980:99) . Traditionally, there was no economic pressure to limit fertility, because the communally organized colonies provide equally for all families, regardless of size. Until recently, good medical care has been available and affordable, and all costs are paid by the community. These conditions have supported the impetus for large families, at the same time decreasing mortality among the colony members. Hutterite colonies are also unique in that their communal lifestyle provides excellent assistance with childcare. To this day, a Hutterite mother has extensive time away from her chores to breastfeed and care for young children, and unmarried young women in the colony will take over care for her children while she is working.

Each of these factors facilitates high fertility rates among the Hutterites. However, subtle changes in economic conditions, attitudes about the family and the individual, and shifts in values surrounding contraception have caused major changes in Hutterite fertility.

Traditional approaches to theorizing fertility transitions

Questions about why humans shift from large to small completed family sizes have motivated generations of scholars interested in population patterns, resource use and human evolution. Many attempts have been made to identify the mechanisms driving fertility transitions, yet precise identification of these mechanisms remains an elusive goal. Understanding the causes of the European fertility transition of the late 19th century, for example, has proven to be a major challenge to historical demographers, and no single explanation, applicable across countries (or groups within countries) is unproblematic. Notestein's early conceptualization of the demographic transition held that the positive changes brought about by modernization (especially in medical technology and its effect upon survival, occupational opportunities for men and women, and the value of children) inevitably drives fertility down (Notestein 1953). Since then a number of related positions have been developed by theorists attempting to further define Notesteins' original argument. These can be separated into demand and ideational theories, and we highlight the primary positions influencing this project below.

On the demand side of the debate over fertility transition are positions such as Easterlin's new home economics model (1975), and Becker's human capital models (1975, 1991). These models of fertility change emphasize the value of children within households, the costs of raising children, and the costs of limiting fertility. Such models carefully identify the economic evaluations that individuals can make in fertility decisions, and assume that the resulting calculus is within the purview of each decision-maker. In contrast, ideational theories like those developed by Freedman (1979), Lesthaeghe (1982), Lesthaeghe and Wilson (1986), Mason (1986),

and Bongaarts and Watkins (1996) move away from the importance of material considerations and emphasize the effects that social and attitudinal forces have on fertility, in particular the importance of the powerful association drawn between modernity, affluence, and small family sizes. Bongaarts and Watkins' identification of the conditions in which early innovators in fertility regulation can have a domino effect throughout a region is one of the strongest positions in the literature to date in favor of ideational processes in demographic patterns. Their position is presaged in Caldwell's (1982) wealth flow models, which bridge demand and ideational approaches. Caldwell's argument started with the straightforward assertion that decisions about the production of children are contingent upon their value to parents. When children are perceived to be costly and to provide few benefits to their parents, fertility will be modified so that parents produce few children. This argument was later broadened with the suggestion that the perceived costs and benefits of children may be material, or they may be social (see for example Caldwell and Caldwell 1998).

In other words, collectively adopted *perceptions* of the costs and benefits of children sometimes determine reproductive behavior, irrespective of actual material conditions. Bongaarts and Watkins illustrate the mechanisms through which changing perceptions can be shaped and shared among members of a social community in their analysis of Watkin's social networks data from Luos in Kenya (Bongaarts and Watkins 1996). The assertion that social factors, in particular those influencing the perceived rather than actual costs of children, influence the total fertility rate, was an important departure from the basic assumptions of the then-influential demand theories of the fertility transition, since those theories are predicated upon the idea that fertility behavior, though shaped by social norms, is ultimately contingent upon the actual, material costs and benefits of children to their parents.

Human behavioral ecologists distinguish between proximate and ultimate levels of explanation of the fertility transition

Until recently, explanations for the demographic transition have been posited and investigated at the proximate level, and relatively little effort has been made to identify and model the ultimate determinants of fertility decline. A unifying theoretical approach to understanding fertility transition data (at an ultimate rather than proximate level) is lacking in many analyses. This is not surprising, because while identifying ultimate causes is important for evolutionary thinkers, this level of explanation is not always necessary for the development and application of population policy and family planning programs. The field of anthropological demography as a whole, however, stands to benefit from an understanding of ultimate causes of fertility patterns. Recently, human behavioral ecologists have made some advances toward developing a unified theory of human fertility patterns, with ultimate-level explanations for the trends we observe. Because the basic suppositions of human behavioral ecologists are drawn from evolutionary theory and long-term studies of reproduction and demographic patterns in shorter-lived species, one of the primary strengths of their work lies in the predictive power of their models, and their ability to generate testable hypotheses.

Human behavioral ecologists highlight a dimension of fertility transitions that has not preoccupied analysts interested in the applied dimensions of demographic analysis. This is that fertility transitions are never uniform, and their rates vary within populations--often in a fairly regular pattern. The most important of these variations relates to wealth; wealthy people usually reduce family sizes before poor people do.

Table 3 about here.

This pattern can be seen in many populations, usually in the form shown in historical data from England and Wales (See Table 3, from Vining 1986). Borgerhoff Mulder recently examined the two most important puzzles about this aspect of fertility transitions: reduced levels of fertility despite relative material plenty and the erosion of a link between resources and fertility. The latter runs contrary to the positive correlation between resources and fertility that characterizes most pre-demographic transition societies (Borgerhofff Mulder 1998).

Building on micro-economic theory and human capital models developed by Becker (1975), human behavioral ecologists have made some theoretical headway on explaining and predicting the conditions favoring fertility transitions, including the evolutionarily puzzling inverse relationship between wealth and number of children in post-fertility transition societies (Harpending and Rogers 1990, Kaplan 1995, Rogers 1990, 1995). Harpending and Rogers' mathematical models strongly support the connection between wealth (or resources) and reproductive success in future generations. They show that wealth in the present is strongly related with successful reproduction in the future; so strongly that wealth is a good proxy for fitness. It thus follows that human strategies that maximize wealth (and one's children's access to wealth) are a good measure of Darwinian fitness. Accordingly, strategizing to maximize one's children's access to wealth is an adaptive strategy that the authors assert is favored by natural selection. It is important to note that under some conditions, parents can maximize their children's access to wealth even when they have many children, as in subsistence systems in which having many children enriches a household. Under other conditions, as Rogers (1990, 1995) points out, the most reliable way to enrich one's children (and insure that they and their

own children will successfully reproduce) is to have few of them, and invest heavily in each one. Either way, Rogers' work shows that natural selection can, in some circumstances, favor smaller family sizes. This was an important advance in evolutionary studies of human fertility patterns, and helped generate a new set of predictions about the circumstances under which parents should, from an evolutionary point of view, reduce family sizes.

Building on Becker's theory of human capital, and extending human capital models to explain parental investment strategies (particularly in children's education), Kaplan (1995, 1996) argued that conditions in which education is both critical and expensive will affect parental behavior, especially with respect to ideal and achieved completed family sizes. He suggested that the existence of competitive labor markets necessarily changes the value of human capital and drives fertility down, because parents adjust fertility behavior in response to anticipated investments and returns to those investments. Generally speaking, the timing and patterning of labor market competition should predict who reduces fertility (and when) in developing economies. Specifically, where economic success and human capital acquired through education are not linked, and where education is not available and high fertility does not lessen economic outcomes for children, fertility should remain high. By contrast, fertility reduction *will* occur when competitive labor markets exist, parents have access to facilities to educate their children, and where increased fertility of parents reduces the achieved income of children (1995:133).

Kaplan (1995, 1996) and Kaplan et al (2001, 2002) greatly extended our understanding of the evolutionary forces favoring small family sizes in a competitive labor market in the developed world, based in part upon their excellent analysis of the fertility and parental investment

patterns of a contemporary population in the American Southwest. Kaplan et al (2002) highlight the importance of women entering into the labor force in a competitive labor market as central to what they regard as the primary mechanism driving lowered fertility in humans: delayed reproduction. However, we would argue that this is not a likely explanation for fertility transition in many societies, and is thusly a poor candidate for explaining fertility transitions across human communities.

In fact, a debate has raged in demography over the relative importance of "starting" vs. "stopping" behavior in fertility transition -- delaying reproduction in the beginning of the reproductive period vs. curtailing or attenuating reproduction at the end of the reproductive period, in addition to the role of spacing births (see for example one discussion of these mechanisms in Knodel 1987, Anderton 1989, McDonald and Knodel 1989). Many analyses of historical and contemporary data exist, demonstrating the relative importance of these mechanisms in varying socio-ecological contexts (see McDonald 1984 for a review; Mason 1997 also discusses why single factor explanations of fertility transition are inevitably problematic). While delayed reproduction among the educated may in fact be the most important mechanism driving fertility lower in a modern industrial context such as was studied by Kaplan et al (2002), Lehrerleut Hutterites of Montana demonstrate some of the reasons why this mechanism is not a factor in their fertility transition, mirroring, in our view, the experience of many other groups undergoing fertility transition in a context of a pro-natal, religious worldview (see Lesthaeghe et al 1981 for a discussion of similar dynamics in populations in sub-Saharan Africa).

Data and Methods

Qualitative and attitudinal data for these analyses were collected from three Lehrerleut colony of roughly 150 individuals. The sample for interview and ethnographic data included all willing participants, male and female, over the age of 15. Data are also drawn from a record of vital statistics for all Lehrerleut Hutterites from 1874 through 1995, which we used for the cohort analyses of marital fertility presented below. In this sample, 28 colonies and 606 women between the ages of 15 and 84 were included. The fertility patterns of 273 women with completed fertility were also analyzed. The median age for the analyses of marital fertility was 50, and the sample was divided into three cohorts to show changes in fertility over time. Cohort 1 included women born before 1930 (n=79), Cohort 2 included women born 1930-1945 (n=110) and Cohort 3 included women born 1946-19600 (n=84). University of Montana Institutional Review Board approval for the project was obtained prior to the initiation of the project, and we instituted a confidentiality plan to protect the identity of study participants. Selection bias may skew the sample slightly for the attitudinal information reported below as those more conservative or shy individuals were less likely to volunteer to participate in our discussions of optimal family size.

The construction of surveys and interview instruments was informed in part by Handwerker's fieldwork, who pointed out (1989:210) how changes in patterns of family relations will determine shifts in fertility—for instance, changes in the power relations between husbands and wives, or elasticity in family systems or marital strategies, or changes in earning power can all be extremely important in shaping fertility decisions. Thus, we investigated fertility from a variety of angles in our interviews and surveys—in its relation to marriage patterns, family systems and changing economic conditions. Our work also relies upon innovations in the construction of fertility and marital histories such as the use of life history calendars, as

described by Axinn and others, which can improve interview quality, stimulate memory and help informants connect certain events or trends in their lives, between, for instance, childcare and income-earning opportunities that co-occurred at some point in the past (e.g., Axinn et al 1999). Group interviews were also conducted when possible, to better understand the juxtapositions of attitudes as they vary across individuals of different genders or ages, as described by Haddix (Haddix 1998).

Decline in Hutterite Fertility

Eaton and Mayer speculated in 1953 that the pressures of the American environment would have an effect on Hutterite birth rates. They stated that "new values which might affect fertility are competing with old standards. Hutterite women talk on occasion about the advantages of 'worldly' mothers, who can enjoy life and not be burdened by too many children and that the limitation of family size is increasingly urged by some doctors for reasons of health (1953:57). " Their predictions were correct. Based on our research with Montana Lehrerleut birth records we can see that fertility has been steadily declining since 1950.

Figure 1 about here.

Figure 1 shows that the average completed family size has steadily declined with Cohort 1 at 8 children, Cohort 2 at 4.9 children and Cohort 3 at and 4.5 children [ANOVA p= <.001 for differences between groups]. This decline is indicative of fertility decline of 61% between the eldest and youngest cohorts. Fertility decline can also be seen in our analysis of the Montana

Lehrerleut total fertility rate (TFR) for the period 1950 through 1990. Table 4 shows the declining total fertility rate for each of 5 decades.

Table 4 about here.

Figure 2 depicts the age specific fertility rates upon which the TFRs reported above are based, and shows the declining trend in fertility. The slight increase in fertility between 1980 and 1990 may be due to the relatively small size of the sample (n=606 women), or it could be an unanticipated reversal in the general pattern of fertility decline. This perturbation is the subject of current research.

Figure 2 about here

Our data not the only substantial evidence of fertility decline among the Hutterites. Laing's work with the Hutterite population in Canada from 1950 to 1971 also shows fertility decline. Although she observed an increase in fertility rates in the 15-19 age group, for all other age groups Hutterite fertility rates have declined (Laing 1988). White (2002) documented fertility decline among a colony of Dariusleut Hutterites, as did Peter (1980a,b), Sato, Nonaka and Peter (1994) in their study of cohort fertility of the Dariusleut Hutterite population.

Mechanisms lowering Hutterite fertility

Fertility changes are typically analyzed with respect to four contributing factors: age at marriage, age at first reproduction, inter-birth interval and the age at last reproduction. Several people have looked at age at marriage as the main drive for fertility decline. Laing's work with

Canadian Hutterites showed that Albertan Hutterites have diverged from Cook's early (1968) description of age at first marriage (22.2 years for women) to an age of 24.9 years for women in 1971. Because non-marital fertility among Hutterites is close to zero, increasing the average age at marriage for females by almost three years could prevent a significant number of births. Peter also sees the importance of a later age at marriage and believes that with the slowing population growth there are less marriages occurring. He writes, "Many young adults who normally would want to get married are unable to find suitable partners because the marriage pool available to them is too small. All Hutterites are descendents of 16 families, of whom 2 families have died out (1980:99)." Laing's work supports this finding; her data reveal that the percentage of Hutterite women over the age of 30 who remained unmarried rose from 5.4% in 1950 to 15% in 1971. Based on her research, Laing argues that although some of these women may have married eventually, a significant proportion would not (Laing 1980). She explained that some Hutterite women are reluctant to marry into a poorer colony, preferring to remain unmarried and childless (Laing 1980). Our data do not support this suggestion; a random selection of 10 Montana Lehrerleut colonies shows that only 6% (16 of 266) of women over the age of 30 remained unmarried. Boldt and Roberts (1980) were also not convinced by Peter's argument about the importance of delayed marriage in the fertility decline. They stated that "to suggest…that age at marriage has increased sufficiently during the 1964-1977 period to account for 33% reduction in growth rate (from 4.32 to 2.91) strains credulity" (1980:113).

Our research has not supported Peter's hypothesis either, though our data do show a measurable change in nuptiality between 1950 and 1990. During this period, the average age at marriage rose from 23 to 24 [ANOVA p= <.001]. The importance of this finding is misleading

however, because in fact there has been no discernable change in the age at first reproduction during the period; the age at first reproduction has stayed stable at 24 years.

These findings are consistent in fact with patterns of fertility decline in other pro-natal, highly religious groups; it is absolutely essential for Hutterite women to bear children shortly after marriage; this establishes a link to their affinal family, unmistakably positions them as mature women in the group, and unquestionably demonstrates their piety and their deference to cultural and religious norms. Delineating these loyalties is of paramount importance to Hutterite people, and women spoke of the importance of these factors to us very clearly and often.

Figure 3 about here.

Rather than lowering fertility through delayed reproduction, Lehrerleut women are doing so by spacing their births further apart, and by stopping. Our data show that between 1950 and 1990, the average inter-birth interval has risen from 1.8 to 2.6 years. More important as a mechanism of fertility decline, however, is that the age at last reproduction has dropped very substantially; from 38 years to 33 years. Figure 3 clearly shows dropping age at last reproduction among the three cohorts. Spacing and stopping evidence in these forms are strongly indicative that couples are contracepting. This is a substantial change in fertility dynamics in this community, and it will have a dramatic effect on Hutterite population patterns in time.

Why is Hutterite Fertility Declining?

Speculations about a coming fertility decline among the famous Hutterites began in Eaton and Mayer's seminal study of this population in 1953. Although there was no evidence of decline at the time, Eaton and Mayer suggested that the pressures to 'modernize' social values and family planning practices from within the community and from local physicians would eventually prevail. Eaton's later work on 'controlled acculturation' emphasized the pressures on Hutterites to assimilate into the dominant culture. In his view, there were two interrelated sources of this pressure; the pressure from the outside by daily visits from salesman, government officials, teachers and doctors, and the perennial pressures internal to the community, deriving from the desires of younger colony members who are more likely than their elders to both admire mainstream norms and question colony norms (Eaton 1952). Although Eaton recognizes the fact that the Hutterites have managed to "integrate [new practices] into [the] existing value system", because they have not rapidly assimilated like other migrants, they tend to make changes in a fashion that will preserve their communal integrity (Eaton 1952). Peter elaborated on these ideas by observing that the Hutterites have indeed modified their values with respect to fertility decline, and that they have done so with foresight. He observed that "[Hutterite] readiness to change their value system in order to ensure their survival under given external circumstances is one of the important features of their survival strategy (1980:119)."

Economic and Technological Impact on Fertility

Peter theorized that individuals living on colonies in decline, plagued by economic difficulties posed by ranching and farming in the modern industrialized age, may be using birth control

methods to deal with their growth rate problem, but that the majority of colonies are simply delaying the age of marriage (Peter 1980a). Based on our evidence, we do not believe this to be the factor driving fertility transition in this population. However, we do find evidence to support Peter's suggestion that the decline in fertility rates is attributable in part to the fact that modern farming methods require fewer workers. "It seems that under the impact of modern technology Hutterite society has entered a phase where a major revamping of its social structure is under way; this is causing unemployment, particularly among its young males, due to a shrinking of the division of labor" (1980:104). Male colony members of our sample were particularly aware of this dynamic, complaining to us that "there wasn't enough work to go around any more" and that "having unoccupied young men hanging around was only going to lead to trouble".

In the 1930s, the Hutterites made the important decision to incorporate modern technologies into their modes of production, and, along with other students of Hutterite culture, we believe that the transformation from a socially oriented division of labor to a technologically oriented one has produced an excess of relatively unoccupied youngsters. According to Peter, the irritating and dysfunctional presence of too many young men in the colonies he studied ultimately motivated people to value smaller family sizes, as they became increasingly aware of the social costs of continuing to have large families (Peter 1980). Boldt and Roberts (1980) were not convinced by Peter's suggestion that delayed marriage was driving the Hutterite fertility transition. They observed that large delays in age at first marriage would threaten the expectation of pre-marital chastity, and that this situation would be unsustainable in Hutterite society. Rather, they are supportive of Eaton and Mayer's original suspicion that birth control was playing some role and that its role in Hutterite fertility limitation would increase. This is

important because the use of birth control would represent a real weakening of church authority and a threat to core values. It would mark a fundamental change in philosophical orientation, and, as Ingoldsby (2001) observed, this would have serious implications for future conversions to modern society.

The Use of Family Planning

In our interviews with colony members, general practitioners who have served the Hutterites for decades, midwives and others, it became abundantly evident that the usage of contraception by Hutterite women, though, secretive, is widespread. One general practitioner in rural Montana who has been providing medical care to various colonies in that region for twenty years stated that Hutterite couples approach him regularly about limiting fertility, but that they very carefully phrase their requests for information about contraception. He stated "family planning does not seem to be against their religion if they have a medical reason. They use a mixture of methods, some permanent and others temporary but no one has ever requested an abortion." Ingoldsby and Stanton (1988) conducted a study of birth control records of all Hutterite women treated at a clinic in a small southern Alberta town, and found that 12.5% of the women have used oral contraceptives and/or IUDs. An additional 25% had had a tubal ligation and/or hysterectomy. In fact, over one third of their sample had used some form of modern birth control (Ingoldsby and Stanton 1988). A generational trend in the preference for type of method used was also noted in the Ingoldsby and Stanton data. Women born in or before 1951 preferred surgical means to limiting fertility, compared with women born after 1951 who preferred the pill or the IUD. The physicians interviewed by Ingoldsby and Stanton also confirmed their suspicion that Hutterites were now commonly using birth control, noting that the pill, IUDs, condoms, tubal ligations and hysterectomies were all used by Hutterite women

they treated as a means to controlling fertility. Only abortions and vasectomies were unheard of (Ingoldsby and Stanton 2001). The physicians they interviewed, along with the Canadian Hutterite colony leaders themselves, agreed that the period of rapid expansion for the Hutterites was over. Now, they felt it appropriate that they follow "medical counsel" regarding advice on family planning. Ingoldsby and Stanton concluded by stating that they suspect the reasons for fertility control are to be found at a personal level. They suggest, and our data support this as well, that Hutterite women are using medical counsel to gain more control of their lives in a patriarchal society. "Perhaps this demonstrates the desire of women in the colony to follow the lead of women in the greater society-at-large to assert their own individuality and to reduce the demands of child-rearing (1988: 139)." Currently, working with a large sample of women, we are investigating the reasons women use to themselves, with their husbands, and with colony elders to rationalize contraceptive behavior. Regardless of the reasons, a major tenet of Hutterite theology and traditional worldview is apparently being left behind by many of colony members.

Conclusion

Fundamental change is occurring in Hutterite society today. Superficially, the Hutterites may appear to be unchanging, since, as noted by other scholars of Hutterite culture, many colonies hold firmly to traditional rules governing dress, food, recreation, and religion (e.g., Ingoldsby 2001). But it appears to us that women in Hutterite society are speaking up for themselves in group discussions more than historically noted, that women are experiencing more equality within the marriage than tradition would hold, that Hutterite dating has become romantic, and that women, in concert with their husbands, are taking the initiative to curtail their fertility. But

they are doing so carefully, deliberately, and in keeping with traditional expectations of them from the pro-natal, religious society. Using spacing and stopping behavior as a means to limit fertility allows women to control their family size in accordance with traditional norms, and conforms to the pattern that has been observed in many other pro-natal, religious societies undergoing the fertility transition. This compels us to question the primacy assigned by Kaplan et al (2002) to the role of delayed reproduction in order to compete in the labor market as a mechanism of fertility transition and reminds us of the words of Karen Oppenheim Mason, who observed that "…the expectation that all fertility transitions have a common cause seems unreasonable in light of enormous demographic and social variation across pretransitional populations (1998:445)."

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References

Anderton, D.L.
1989 Comment on Knodel's "Starting, Stopping and Spacing during the Early Stages of Fertility Transition." *Demography* 26(3):467-470.

Axinn, W., L. Pearce, and D. Ghimere
1999 Innovations in Life History Calendar Applications. *Social Science Research* 28: 243-264.

Becker, G.
1975 *Human Capital*. NY: Columbia University Press.

Becker, G.
1991 *A Treatise on the Family* (2nd edition). Cambridge: Harvard University Press.

Boldt, E.D., and L.W. Roberts
1980 The Decline of Hutterite Population Growth: Causes and Consequences-A Comment. *Canadian Ethnic Studies* 12: 111-117.

Bongaarts, J. and S. Watkins
1996 Social Interactions and Contemporary Fertility Transitions. *Population and Development Review* 22(4):639-682.

Borgerhoff Mulder, M.
1998 The Demographic Transition: Are we any Closer to an Evolutionary Explanation? *Trends in Ecology and Evolution* 13(7):266-270.

Caldwell, J.
1982 *Theory of Fertility Decline*. London: Academic Press.

Caldwell, J. and Caldwell, P.
1998 *Regional Paths to Fertility Transition*. Conference on Global Fertility Transition.

Chamie, J.
1977 Religious Differentials in Fertility: Lebanon 1971. *Population Studies* 31(2):365-382.

Cohen, Roberta, K. Haddix, E. Hurtado, and K. Dewey
1995 Maternal Activity Budgets: Feasibility of Exclusive Breast Feeding for Six Months among Urban Women in Honduras. *Social Science and Medicine* 41(4):527-36.

Cook, R.C. ed.
1954 The North American Hutterites: A Study in Human Multiplication. *Population Bulletin*. Population Reference Bureau Inc. 10(8): 96-107.

Cook, R.C. ed.
1968 Pockets of High Fertility in the United States. *Population Bulletin*. Population Reference Bureau Inc. 24(2): 25-55.

Easterlin, R.
1975 An Economic Framework for Fertility Analysis. *Studies in Family Planning* 6(3):54-63.

Eaton, J.W.
1952 Controlled Acculturation: A Survival Technique of the Hutterites. *American Sociological Review* 17(3): 331-340.

Eaton, J. and A. Mayer
1953 The Social Biology of Very High Fertility among the Hutterites: The demography of a Unique Population. *Human Biology* 25(4):206-264.

1954 *Man's Capacity to Reproduce*. Glencoe: Free Press.

Freedman, R.
1979 Theory of Fertility Decline: A Reappraisal. *Social Forces* 58:1-17.

Garcia, P., K. Haddix, and M. Maxwell
1994 Linking Human and Non-Human Mating Systems. *Trends in Ecology and Evolution* 9(9):314-315.

Greksa, L.P.
2002 Population Growth and Fertility Patterns in an Old Order Amish Settlement. *Annals of Human Biology* 29(2):192-201.

Haddix, K.
1998 *Marriage and Reproduction in a Polyandrous Family System of NW Nepal*. Unpublished PhD Dissertation, Department of Anthropology, University of California, Davis.

Haddix, K.
2000a *Report on Baseline Primary Health Survey, Humla District, Nepal*. ISIS Foundation, unpublished manuscript.

Haddix, K.
2000b *Factors Maintaining High Fertility among Mukogodo Maasai, and the Incipient Fertility Transition*.
November 15 – 19, San Francisco, CA: Paper presented at the American Anthropological Association annual meeting

Haddix, K.
2001 Leaving your Wife and your Brothers: When Polyandrous Marriages Fall Apart. *Evolution and Human Behavior* 22(1):47-61.

Haddix, K. and J. Gurung
1999 “Excess Women": Non-marriage and Reproduction in Two Ethnic Tibetan Communities of Humla, Nepal. *Himalayan Research Bulletin* 19(1):56-65.

Haddix McKay, K. and A. Pickering.
2005 *Changing Fertility Strategies among Hutterites of Montana*. November 30 - December 4, Washington, D.C.: Paper presented at the annual meetings of the American Anthropological Association.

Handwerker, P.
1989 *Women's Power and Social Revolution. Fertility Transition in the West Indies*. Sage Publications.

Harpending, H. and A. Rogers
1990 Fitness in Stratified Societies. *Ethology and Sociobiology* 11:497-509.

Hartse, C.
1994 The Emotional Acculturation of Hutterite Defectors. *Journal of Anthropological Research* 50(1):69-85.

Hern, W.
1977 High Fertility in a Peruvian Amazon Indian village. *Human Ecology* 5:355-367.

1992 Polygyny and Fertility Among the Shipibo of the Peruvian Amazon. *Population Studies* 46:53-64.

Hionidou, V.
1998 The Adoption of Fertility Control on Mykonos, 1879-1959: Stopping, Spacing or Both? *Population Studies* 52(1):67-83.

Hostetler, J.
1997 *Hutterite Society*. Baltimore: Johns Hopkins University Press.

Hostetler, J. and G. Huntington.
1967 *The Hutterites in North America*. NY: Holt, Rinehart and Winston.

Hostetler, J. and G. Huntington.
2002 *The Hutterites in North America*.Belmont, CA: Wadsworth.

Ingoldsby, B.
2001 The Hutterite Family in Transition. *Journal of Comparative Family Studies* 33(3): 377- 391.

Ingoldsby, B. and M. Stanton
1988 The Hutterites and Fertility Control. *Journal of Comparative Family Studies* 19(1):137-142.

Janssen, S.G. and R. Hauser
1981 Religion, Socialization and Fertility. *Demography* 18(4): 511-528.

Kaplan, H.
1995 Fertility and Fitness among Albuquerque Men. In *Human Reproductive Decisions*. R. Dunbar, ed. NY: St. Martin's Press.

Kaplan, H.
1996 Theory of Fertility and Parental Investment in Traditional and Modern Societies. *Yearbook of Physical Anthropology* 39:91-135.

Kaplan, H., Hill, K, Hurtado A., and Lancaster J.
2001 The Embodied Capital Theory of Human Evolution. In *Reproductive ecology and human evolution*. P. Ellison, ed. Hawthorne, NY: Aldine de Gruyter.

Kaplan, H., Lancaster, J. Tucker, W, and Anderson K.
2002 Evolutionary Approach to Below Replacement Fertility. *American Journal of Human Biology* 14:233-256.

Knodel, J.
1987 Starting, Stopping, and Spacing during the Early Stages of Fertility Transition: The Experience of German Village Populations in the 18th and 19th Centuries. *Demography* 24(2):143-162.

Laing, L.
1980 Declining Fertility in a Religious Isolate: the Hutterite Population of Alberta, Canada, 1951-1971. *Human Biology* 52(2):288-310.

Lang, H. and R. Göhlen
1985 Completed Fertility of the Hutterites: A Revision, *Current Anthropology* 26(4):395.

Lesthaeghe, R.
1989 Production and Reproduction in Sub-Saharan Africa: an Overview of Organizing Principles. In *Reproduction and Social Organization in sub-Saharan Africa*. R. Lesthaeghe, ed. Berkeley, CA: University of California Press.

Lesthaeghe, R. and C. Wilson.
1986 Modes of Production, Secularization and the Pace of the Fertility Decline in Western Europe, 1870-1930. In *The Decline of Fertility in Europe*. A. Coale and S. Watkins, eds. Princeton, NJ: Princeton University Press.

Mason, K.
1986 Culture and the Fertility Transition: Thoughts on Theories of Fertility Decline. *Genus* XLVIII(3-4):1-13.

1997 Explaining Fertility Transitions. *Demography* 34(4):443-454.

McDonald, P. and J. Knodel
1989 The Impact of Changes in Birth Spacing on Age at Last Birth: A Response to Anderton. *Demography* 26(3):471-472.

McDonald, P.
1984 Nuptiality and completed fertility: A study of starting stopping and spacing behavior. *World Fertility Survey: Comparative Studies*, No 35.

Nonaka, K., Miura, T., and Peter, K.
1994 Recent Fertility Decline in Dariusleut Hutterites: an Extension of Eaton and Mayer's Hutterite Fertility Study. *Human Biology* 66(3):411-420.

Notestein, F.
1953 Economic Problems of Population Change. in *Proceedings of the Eighth International conference of Agricultural Economists*. London: Oxford University Press.

Olsen, C.
1987 The Demography of Colony Fission from 1878-1970 among the Hutterites of North America. *American Anthropologist* 89(4):823-837.

Peter, K.
1980a The Decline of Hutterite Population Growth. *Canadian Ethnic Studies* 12(3): 97-110.

Peter, K.
1980b Rejoinder to The Decline of Hutterite Population Growth; Census and Consequences. *Canadian Ethnic Studies* 12: 118-123.

Peterson, H.
1970 Hilldale: a Montana Hutterite Colony in Transition. *Rocky Mountain Social Science Journal* 7(1):1-7.

Radtke, H.
1971 The Hutterites in Montana: An Economic Description. *Bulletin 641, Montana Agricultural Experiment Station*. Montana State University, Bozeman.

Rogers, A.
1990 Evolutionary Economics of Human Reproduction. *Ethology and Sociobiology* 11:479-495.

Rogers, A.
1995 For Love or Money. *Human Reproductive Decisions* R. Dunbar, ed. NY: St. Martin's Press.

Sato, T. with K. Nonaka, T. Miura and K. Peter
1994 Trends in Cohort Fertility of the Dariusleut Hutterite Population. *Human Biology* 66(3): 421-432.

Stevenson, J., Everson, P., & Crawford, M.
1989 Changes in Completed Family Size and Reproductive Span in Anabaptist Populations. *Human Biology* 61(1):99-115.

Vining, D.
1986 Social Versus Reproductive Success: the Central Theoretical Problem of Human Sociobiology. *Behavioral and Brain Sciences* 9:167-87.

Weeks, J., Rumbaut, R., Brindis, C., Korenbrot, C., and D. Minkler.
1989 High Fertility among Indochinese Refugees. *Public Health Reports* 104:143-50.

White, K.
2002 Declining Fertility among North American Hutterites: The use of Birth Control within a Dariusleut Colony. *Social Biology* 49(1-2):58-73.

Table 1. Distribution of the Hutterite Population by Age and Sex June 1880

Age	Male	Female	Total
Under 16	109	103	212
15-19	23	21	44
20-24	15	24	39
25-29	15	15	30
30-34	13	15	28
35-39	6	16	22
40-44	10	7	17
45-49	11	4	15
50-54	2	3	5
55-59	3	7	10
60-64	6	3	9
65-69	5	4	9
70-74	1	0	1
75-79	1	0	1
80-84	1	0	1
Total	221	222	443

Table 2. Distribution of the Hutterite Population by Age and Sex December 1950

Age	**Male**	**Female**	**Total**
Under 1	175	179	354
1-4	698	680	1378
5-9	722	646	1368
10-14	595	629	1224
15-19	434	474	908
20-24	330	337	667
25-29	298	304	602
30-34	231	231	462
35-39	189	213	402
40-44	165	120	285
45-49	125	111	236
50-54	91	91	182
55-59	74	69	143
60-64	46	40	86
65-69	39	25	64
70-74	22	29	51
75-79	5	6	11
80-84	5	3	8
85-89	3	1	4
90 and over	0	2	2
Unknown	34	72	106
Total	4281	4261	8542

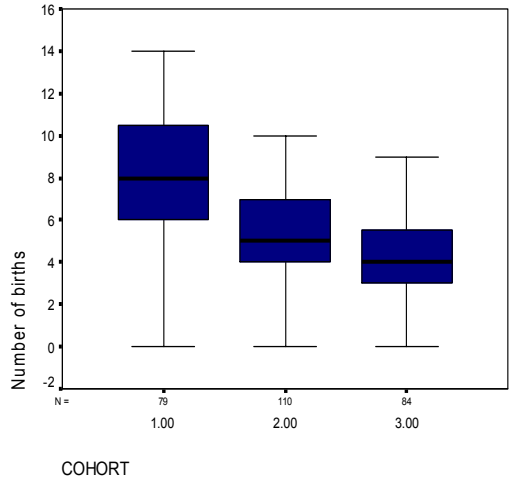
Table 3. Surviving children per married couple (where wife's age exceeds 45 years) classified by social status, 1911, England and Wales (modified from Vining 1986)

Social class	**Surviving children per married couple**
Professional	2.94
Lower white collar	3.38
Skilled manual	3.82
Unskilled	3.79
Textiles	3.31
Coal mining	4.45
Agricultural laborers	4.57

Table 4. Total Fertility Rates Dropping among Lehrerleuts of Montana

Year	**1950**	**1960**	**1970**	**1980**	**1990**
TFR	7.9	9.1	5.4	4.3	4.9

Figure 1. Cohort Analysis Showing Decreasing Fertility Across 3 cohorts of Montana Lehrerleut women



Cohort 1: women born before 1930, n=79
Cohort 2: women born 1930-1945, n=110
Cohort 3: women born 1946-1960 n=84

Figure 2. Age specific fertility rates (ASFR) show drop from 1960 levels to 1990 levels among Lehrerleuts of Montana.

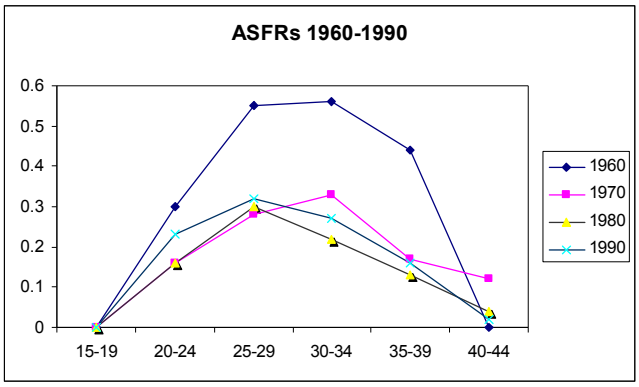
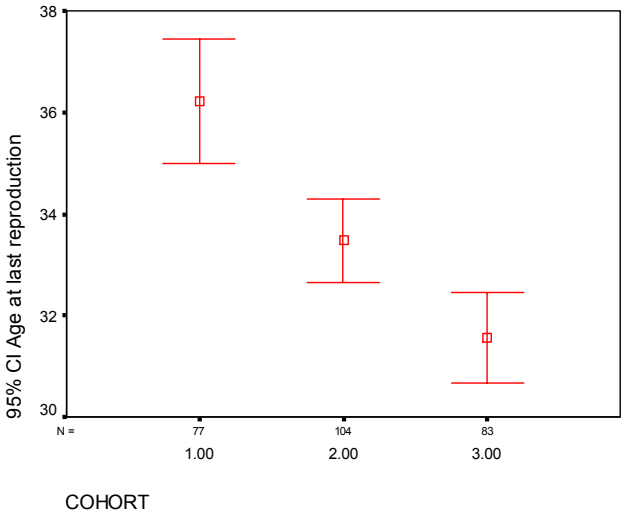


Figure 3. Age at last reproduction drops steadily among 3 cohorts of Lehrerleut Hutterites in Montana.



Cohort 1: women born before 1930, n=79
Cohort 2: women born 1930-1945, n=110
Cohort 3: women born 1946-1960 n=84

Endnotes

[1] Completed family size of 12-14 children