

anthro notes

National Museum of Natural History Newsletter for Teachers

vol. 9 no. 2 spring 1987

BIOSOCIAL PERSPECTIVES ON SCHOOL-AGE PREGNANCY

To many Americans, anthropology is a discipline with little relevance to modern life. What can the customs and social patterns of technologically simple societies in far-away places, the bones of ancient humans, the artifacts of vanished civilizations, or the biology and ecology of non-human primates have to do with the problems that beset our society today?

In actuality, anthropologists are increasingly involved in studying cultural and historical aspects of modern American society (see "Students Explore Their Community's Past," Anthro.Notes vol. 9 no. 1). One anthropologist, in particular, has brought the broadest perspectives of anthropology to bear on some of the most critical problems of contemporary

American families. Although her early research centered on non-human primate behavior and its relevance to the evolution of human language, culture, and society, Jane Lancaster's recently edited books (School-Age Pregnancy and Parenthood, with Beatrix Hamburg, Parenting Across the Life-Span, and Child Abuse and Neglect) are proof of her ability to focus her own and her colleagues' efforts on understanding and resolving current crises in family life.

Last April, Lancaster conducted her first high school seminar at Dunbar High School in Washington D.C. Her topic, "School-Age Pregnancy and Parenthood," was part of a year-long Anthropological Society of Washington symposium on the origins of human



society, held in conjunction with the school's humanities program. (Lancaster's visit to the school was funded by a small grant from the D.C. Community Humanities Council, an affiliate of the National Endowment for the Humanities.) Several members of the student audience were teen-age mothers with infants in the school nursery two floors below.

The Bio-Social Perspective

As presented by Lancaster in School-Age Pregnancy and Parenthood, the anthropological perspective forces us to consider "normal" family life through evolutionary and historical time, across cultural boundaries, and in other species. While evolutionary and cross-cultural perspectives are familiar to most social scientists, a biosocial perspective reflects a new interdisciplinary focus. As Lancaster and her co-editor, Beatrix Hamburg, write: "The biosocial perspective takes into account the biological and the social environments as determinants of patterns of behavior and pinpoints areas in which contemporary human parental behavior exhibits continuities with, and departures from, patterns evident throughout human history" (p.3). Human biology, in this view, is far from deterministic, but is itself defined as a genetically limited range of possible biological responses to environmental and social variables. "Recognizing the normal, predictable environment from our human heritage and defining the resultant range of reaction, allows us to ask questions as to whether a phenomenon is really new and outside past experience or if it is simply one aspect of the expected variability of expression" (p.5). It is this failure to study the normative aspects of adolescence, pregnancy, and motherhood in the broadest possible biological and social perspective that Lancaster and Hamburg are trying to redress in their book. As one Dunbar student asked: "How can you figure out how to fix society's problems if you

only study the problem cases and don't look at the ones that turn out O.K.?"

Morality vs. Biology

To the high school students in Lancaster's audience, society seems to be placing all the blame for the epidemic of school-age pregnancies on young people's declining moral standards. The message they are getting is that if teenagers today could just say "no" until marriage, the problem would disappear. While this may be true, studies of adolescent biology in historical and cross-cultural perspective reveal that human teenagers as a group have never had to say "no" for quite so long.

For most pre-industrial societies, including those in our own past, the interval between menarche (onset of menstruation) and marriage is less than three to four years, while in industrial countries, the interval has expanded to eight years or more (Whiting, Burbank, and Ratner pp. 273-301). The increasing gap is due as much to a declining age at menarche as to an increasing age at marriage. Furthermore, girls are now fertile throughout the greater part of this expanded "maidenhood," rather than only at the very end.

As recently as 125 years ago, the average age at menarche in Scandinavia, the U.K., and the U.S. was between 16 and 17 years. At the time of World War I, the average age for menarche was 14.5 to 15 years. In pre-industrial societies such as the Masai and the Mbuti of Africa and the Bundi of New Guinea, the average menarcheal age is still between 15 and 18 years. In the modern U.S., on the other hand, mean menarcheal age is about 12.5 years. The combination of decreasing age of sexual maturity in developed countries and more rapid growth and increasing adult size are part of a long-term or "secular" trend. These shifts, which can be observed today in developing

countries, are thought to be largely due to improvements in nutrition, health, and other socioeconomic factors, since the trend occurs first among wealthier and better nourished groups in any society. For girls, the ratio of body fat to lean body mass and the degree of daily energy expenditure have both been used to explain why better nourished girls mature earlier, and anorexics and athletes mature later. However, genetic differences between populations also play a role.

In pre-industrial populations, as well as in the great apes, menarche is followed by a period of one or more years during which the complex feedback cycle of hormonal shifts leading to regular ovulation becomes established. This process may take as many as five years for completion. During this interval of adolescent sub-fertility, when more than half the cycles are anovulatory, a girl's chances of becoming pregnant are considerably reduced. But recent studies summarized by Reiter (pp.53-76) suggest that the period of adolescent subfertility has been declining even more rapidly than age at menarche. Early maturing girls are now essentially fertile within one year of menarche rather than the 4.5 years measured for late maturing girls.

Is Adolescent Pregnancy New?

While improved socio-economic conditions have drastically lowered the age of reproductive maturity, other biological, psychological, and cognitive systems, such as dental maturation or analog reasoning skills, are less accelerated by changing conditions. Cognitive systems, in particular, may take as long to mature as before. Probably for the first time in human history, most girls are capable of becoming mothers before they are able to function as adults. Clearly, school-age pregnancies in large numbers are a relatively recent phenomenon, although later teenage or out-of-wedlock pregnancies are not.

Indeed one of Lancaster's colleagues (Vinovskis, pp. 303-322) suggests that around the time of the American Revolution the percentage of first children conceived out-of-wedlock and born within 8.5 months of marriage may have been as high as 30%! The fact that the rate was considerably lower (10% or less) in Puritan New England and Victorian America indicates that the trend towards increasing numbers of extramarital pregnancies has been reversed in the past and could possibly be reversed again through social pressures. Even if we wanted to return women to the Victorian era, however, the increasing gap between sexual and social maturity would demand greater repression over a longer period than either the Victorians or the Puritans were able to manage.

Adolescent Pregnancy in Other Animals

Among non-human primates, reproductive maturation accelerates in captive and provisioned animals, compared to their wild counterparts. As in humans, sexual maturity is more responsive to environment than other growth and development systems such as dental maturation. Under these conditions of developmental dyssynchrony, females will experience a type of "adolescent pregnancy" at an earlier stage of dental and skeletal development than in the wild. This situation results in smaller infants and greater risk to both mother and infant (Altmann, pp. 247-271).

Adolescent Fathers

One little-studied aspect of the present crisis is the role of the adolescent father. Since reproductive maturity has always been at least two years later for males than for females, the fathers of infants conceived by older teenagers in the past were unlikely to be teenagers themselves. In most pre-industrial societies, moreover, only adult males were allowed to marry, or in the case of infant

betrotal, to take up the full responsibilities of family life. In these societies marriage was a more likely and a more successful outcome when teenage girls conceived out of wedlock. Also newly-wed couples nearly always lived in close proximity to at least one set of parents who provided important support for first-time mothers and fathers. "From the perspective of a Kwoma or !Kung, the problem of school-age pregnancy is not why are these young women getting pregnant, but why is the society so resentful and unsupportive of them" (Whiting et. al. p. 295). If more efforts could be focused on the problems of teenage fathers, it might be possible to develop ways to help them develop a greater sense of responsibility for their actions.

Adolescent Pregnancy and Infant Mortality

Other concerns center around poor outcomes of adolescent pregnancy for both mother and infant. The greater likelihood of complication and death in an adolescent pregnancy is closely tied to a high incidence of low birth-weight babies, particularly for mothers younger than 16 (Garn, Pesick and Petzold, pp. 77-93). Why are so many of these babies so small? The biosocial perspective suggests that this may be due in part to the relatively small size of young adolescent mothers. Early maturers tend to be small since early sexual maturation shortens the growth period.

Another factor is a tendency for younger mothers to produce smaller infants than older mothers even though they have the same initial weight and weight gain. Where is the extra weight going if not into the fetus? In humans maternal fat stores are critical to the successful raising of a child. Since, as Lancaster points out, human brains are only 23% of adult size at birth, (chimpanzee infant brains are 45% of adult size), the prolonged period of

lactation is essential to achieving proper brain growth. Human hunter-gatherers who do not have access to processed substitute foods, nurse their infants for 3.5 years on average, by which time the immune system has largely matured and the brain has reached 90% of adult weight although overall body size is only 50% of adult. Fat stores to sustain the greater energy costs of lactation without additional food supplies are laid down in puberty and during early pregnancy at the expense of fetal weight gain, if necessary. Inadequate weight gain or nutritional deficiency during pregnancy results in a lower birth weight infant with higher risks of complications and death.

Low birth weights are thus correlated with both pre-pregnancy weight and with weight gain during pregnancy. Young teenage mothers (13-15) tend to be smaller than average, since their early maturation has led to early cessation of growth. Additionally, more of their weight gain during pregnancy goes to other functions such as maternal fat stores than to the developing baby. Infants of young teenagers, therefore, are at greater risk. This situation can only be partially mediated through improved prenatal care and nutritional counseling.

New Directions and Solutions

Lancaster reports that the discussion that followed her Dunbar talk "was exciting and very gratifying....The students asked questions for well over an hour and only the lunch bell stopped them." Towards the end, attention turned to the question of solutions to the current crisis. These adolescents claimed to know all about contraception but often did not use it. As one of Lancaster's colleagues demonstrated, improved communication and information

(continued on p. 14)

(continued from p. 4)

sharing between mothers and daughters on this subject has little effect on the daughter's subsequent behavior (Furstenberg et. al., pp. 219-243). Knowledge of contraception was not an issue here, but the determination to use contraceptive methods was. How can these adolescents be motivated to say "no" to pregnancy until they are socially mature?

Adolescence is now a stage of life equal in length to childhood, but with few defined responsibilities for inner-city youth, other than waiting to grow up. Some students cited Harlem counterparts who were in a program that guaranteed a college education if they finished high school. This program was seen as one example of how new demands and expectations and community support can make a difference in adolescent behavior. In other cultures, adolescence is seen as a time of exploration of both geographical and social frontiers, when peer groups are often separated from the rest of society and given unusual freedom and resources. Even in the industrialized countries of western Europe, where adolescent pregnancy is far less of a problem than in the U.S., adolescence is a more clearly defined stage of life, a time to explore and enjoy oneself free of the heavy responsibilities of adulthood. European families at all economic levels make major sacrifices to provide adolescents with opportunities to travel, to serve their communities and nations, to socialize among themselves, and to have fun. Access to appropriate education, whether academic or job-centered, is also guaranteed by many European countries.

Present "solutions" to the crisis of adolescent pregnancy emphasize the negative rather than the positive. We tend to focus on the problem rather than the solution. In 1985, while officials argued over providing counseling and information on



contraception to school children, 52% of the ca. 12,000 teen-age pregnancies in the Washington area ended in abortion (Washington Post, 4/21/87), and more than half of the new babies in the District of Columbia were born to single mothers. Although a return to a Victorian moral climate would certainly make a difference, we simply cannot expect our children to behave as we supposedly did, when they are biologically different from us in their pattern of maturation.

Jane Lancaster's work suggests that the increasing gap between biological and social maturation, together with a dramatic increase in the number of single-parent families, has created an entirely new ball game for today's adolescents, whom we are trying unsuccessfully to coach by the old rules. These studies and the Dunbar students are both telling us, that if adolescents are to win at this game, they need a new definition of adolescence, with new kinds of societal and familial incentives and support aimed at peer groups of both sexes. If both boys and girls could see clear alternatives to their current lifestyles, perhaps they might be more likely to say "no" to adolescent pregnancy.

Alison S. Brooks