

Pre- and Perinatal Anthropology III: Birth Control, Abortion and Infanticide in Cross-Cultural Perspective

Author: Laughlin, Charles D, PhD

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Full Text: Headnote ABSTRACT: Although most societies highly value and nurture children, children in many societies may nonetheless be unwanted under certain conditions. Thus, decisions about parental investment, and social control of reproduction and pre- and perinatal survival are not solely a modern phenomenon. Many societies act to limit the incidence of pregnancy, birth and infant survival, and have done so for centuries. These societies have traditional means for controlling birth and for aborting unwanted pregnancies. Some even go to the extreme of killing newborn infants, which may be considered a type of extended abortion. This paper explores the range of conditions among the world's societies associated with such controls, and surveys some of the methods used to maintain control. Such methods include rituals, physical stress, herbal medicines, prescriptive taboos, and infanticide. Theoretical concerns are surveyed. One of the advantages of pre- and perinatal anthropology is that cross-cultural data may be used to counter stereotypes about nonwestern cultures, thus leaving us in a better position to evaluate our own activities in the greater scheme of things. A common tendency is to think about traditional peoples as "noble savages" who never abort, abuse, or kill their babies, and who are always welcoming, loving and nurturing toward newborns and infants. It is true that there is a cross-cultural trend in favor of warm, loving and nurturing parentage (Rohner 1975, 1980, 1986, Rohner and Rohner 1980, 1981), a commitment to a social relationship that usually spans an entire lifetime (Lancaster et al. 1987). If this were not so, our species would be in very dire straits indeed. But not all children are born wanted or are nurtured. In fact, birth control, abortion, infanticide and fatal child neglect have existed on this planet for hundreds, and perhaps even thousands of years. These negative phenomena did not arise in, nor are they limited to life in modern technological society. There is for example a reluctance on the part of many traditional peoples to acknowledge a newborn as a human being or group member until the child has demonstrated that it can survive (see Oakley 1982:309). I wish to continue my efforts (see Laughlin 1989a, 1989b, 1990, 1991, 1992) toward establishing an anthropological sensitivity among pre- and perinatal psychologists by looking at the unwanted child in cross-cultural perspective. I will survey the literature on birth control, abortion, infanticide and fatal neglect among non-Euroamerican societies (a number of general studies have been published; see Scheper-Hughes 1987, Ginsburg and Rapp 1991, Gelles and Lancaster 1987). I will then note some theoretical considerations that have been raised in the literature, and will discuss some of the social and adaptational factors that place children at risk. BIRTH CONTROL Cultures have exercised control over reproduction in many ways, including the prevention of conception as a consequence of sexual intercourse. There are a number of good reviews of the cross-cultural literature on traditional methods of birth control, including Newman (1972) and Turner (1978:107-118). Numerous methods of birth control have been recorded for traditional peoples, including sexual abstinence and coitus interruptus (Benedict 1970). Serious questions have been raised by some authorities as to the actual effectiveness of many of these methods - other than, of course, total abstinence - for controlling fertility, either in modern times, or during the Pleistocene (Handwerker 1983:16-17). The data are at present incapable of resolving this issue. But it would seem likely that a decrease in child mortality due to better nutrition had something to do with the population explosion that marked the transition from Paleolithic to Neolithic culture, roughly 10,000 years ago (ibid:20). It comes as no surprise that contraception practices are related to a culture's understanding of reproduction. For example, the Tapirape Indians of Brazil once believed that sexual intercourse must continue throughout pregnancy so that enough

semen was produced to build the body of the fetus (Wagley 1977:133-134). As a consequence, a child could under some circumstances be considered to have more than one genitor. The idea that conception might occur from, or might be prevented during a single act of intercourse seemed to them ridiculous. As a consequence of these beliefs, traditional contraception was in the form of sexual abstinence until the last child born was at least a year old (ibid:135). Likewise, the Hagen people of New Guinea believe that "several acts of intercourse" are required to conceive and form the fetus (Strathern 1972:42). Repeated intercourse is also considered necessary for conception by the people of West New Britain, Papua New Guinea, but conception also requires an appropriately intense social interaction between man and woman during the course of their daily lives (Scaletta 1986:34-35). Peoples use a variety of methods to avoid conception. Vietnamese believe that rau ram leaves (*Persicaria*), which are also used as a condiment, make a man sterile. Women may also eat the eggs of the silkworm moth in order to avoid pregnancy (Hart et al. 1965:222). Liberian women would traditionally drink infusions of dyes, hot peppers, and lime and soda to either prevent conception or to abort (Handwerker 1986). Warren Hern (1976) found that knowledge of herbal contraceptives was widespread among women in a Shipibo village in Peru. More than 50% of women over the age of 15 knew about such methods, and 43% of women between 20 and 54 years had used them. Yet when Hern examined the fertility of women who had and had not used these herbal contraceptives, he found no actual difference in the birth rates among these women - indicating that such methods are not particularly effective. Indeed 25% of the parous women asked admitted to having used herbal contraceptives just prior to the birth of their last child (ibid:18).

ABORTION Another means of controlling reproduction and limiting population is to kill the child after it is conceived, but before it is born. Induced abortion is a politically and religiously sensitive topic these days with contentious groups on either of the "right-to-life" and "free choice" movements in the United States and Canada vying to gain control of everyone's attitudes and activities. Moreover, developments in modern prenatal medicine present new and challenging questions regarding the conflicting rights to health of the fetus and to privacy of the pregnant woman (Landwirth 1987). This paper does not engage in this debate, but rather surveys the various practices carried-out among the world's cultures. There are some excellent reviews of the literature that the reader may find interesting. Although somewhat out of date, the most complete discussion of abortion in the anthropological literature is still that of George Devereux (1967, 1976). Other studies include Benedict (1970); the edited volume by David (1974; see also David et al. 1988) with articles covering Latin America, Korea, Turkey, Tunisia, Great Britain, the Soviet Union, China, the Middle East and Africa; Nurge (1975) on abortion in human and non-human primates. There are also some research reports from Euroamerican subjects indicating that there are significant psychological sequelae in women who have either undergone abortions, or who have been denied the abortions they desired, and among children whose mothers had desired, but were denied abortions (see Jenkins 1967, David et al. 1988, Speckhard and Rue 1993, Erikson 1993, Ney, Fung and Wickett 1993, Findeisen 1993, Kesselman 1990). George Devereux (1976:165-358) offers the most complete compendium of abortion beliefs and practices in the ethnological literature. He found that abortion is quite common among human societies - indeed, he claimed that it was virtually universal. The literature on 60% of the 200 societies then covered by the Human Relations Area Files (HRAF) included information on abortion. Data on these societies are summarized alphabetically, with the addition of information either previously unpublished, or published elsewhere than in the HRAF. The data are also summarized in tabular form (ibid:361-371). The motivations for abortion given in the literature include adultery, to maintain female beauty (the husband's love is to be preserved), to avoid the taboo against coitus during pregnancy and lactation, indicated by dreams or omens, required by the group's economic system, fear of some kind of penalty, political considerations (drastic matters, class, slavery, wife of a prisoner of war, etc.), health (strength, prophylaxis, fear of pain, eugenics, etc.), illegitimate or posthumous child, poverty, cannibalism due to poverty, quarrels (out of anger, spite, desertion by husband or lover), religion and magic, too much trouble to raise the child, or quest for wealth (ibid:361-362). Several motivations may be present in any one society. For instance, among the Hagen of New

Guinea, abortion (as well as infanticide) is women's business to which the husband has no access (Strathern 1972:43-44). Motivations for abortion (or infanticide) include anger at the husband, fear of the pain of birthing, and desire to avoid post partum sexual abstinence. Women who carry out abortion often disguise it as miscarriage or still-birth to avoid any social consequences. The most common methods of performing abortion listed for the various societies are the administration of drugs internally as abortifacients and the use of mechanical means by which the fetus is damaged. Many of the drugs listed are known to contain active ingredients, while many others appear to have no basis in modern pharmacology. Mechanical means include using the woman's own weight, or the weight of others on the uterus, some contrivance (heavy basket, constriction belt) to constrict the abdomen, manual squeezing of the waist, massage techniques, pressure from a pointed object (thumb, stick, etc.), grasping the uterus through the abdominal wall, and gross traumatization of the abdomen. It is usually the woman that performs her own abortion, although she may be assisted by another old woman (ibid:47). More complex societies often have midwives or medicine men performing the abortion (see e.g., Strathern 1972:44 on the Hagen of New Guinea). The Akan of Ghana abort quite commonly, according to Wolf Bleek (1990). In a sample of women who had ever been pregnant, Bleek found that 10 out of 19 had induced abortion at least once. Akan knowledge of abortifacients is extensive. Bleek counted no less than 79 methods of abortion, including those mentioned by his informants, and those noted by other Akan researchers. Of course, many of these methods are of questionable efficacy - such as spells cast by witches - but others like decoctions of roots and herbs may well be effective. Goodale (1971) notes that all Tiwi (Melville Island, North Australia) women know methods for abortion, and many practice it. Young women would induce abortion if they became pregnant before marriage. Patterns of abortion have been shown to change with increased access to modern methods of contraception (e.g., Donaldson, Nichols and Choe 1982 for Korea). Also, access to prenatal care and birthing methods that lower pregnancy related mortality - which is still remarkably high in developing countries (Rosenfield 1989) - may remove some of the anxiety attendant upon reproduction among traditional peoples. This factor has been carried to the level of theory in the so-called "demographic transition" from high fertility-high mortality to low fertility-low mortality cultures (Brittain 1992). It has been assumed by many researchers that mortality reduction occurs first, followed by a reduction of fertility to control population size. INFANTICIDE AND FATAL NEGLECT A common method of population control is, or has been, infanticide - the willful killing of babies (Dickeman 1975:107). Indeed, some authorities interpret infanticide as a form of abortion (Minturn and Stashak 1982, Hrdy 1987:97). In some respects, our species holds much in common with non-human primates (see Sommer 1987 on langurs, Tarara 1987 on baboons, Dunbar 1988:257-261 on primates generally) and other social animals among whom infanticide is also practiced (Hausfater and Hrdy 1984). We will never know exactly how many societies have practiced systematic infanticide, but the practice has been, and still may be widespread. There are a number of fairly good surveys and studies of the cross-cultural literature (Williamson 1978, Dickeman 1975, Hausfater and Hrdy 1984). And there are a number of interesting and penetrating studies of infanticide among individual non-Euroamerican cultures (see Bugos and McCarthy 1984 on the Ayoreo of Bolivia and Paraguay, Mull and Mull 1987 on the Tarahumara of Mexico, Cowlshaw 1978 on Australian Aborigines, Gilandi 1990 on Muslim societies, and Dickeman 1975 on Australian Aborigines, Bushmen, Pomo Indians, Tikopia and Japan). Indeed, some European societies have also practiced infanticide at various points in their history (Piers 1978, Dickeman 1979). Holocultural studies¹ are able to shed some light on the motivations for infanticide. Whiting et al. (1977) examined the phenomenon among the 84 societies of the HRAF for which there was sufficient evidence of the practice of infanticide. Of the 84 societies, 72 (or 86%) provided enough evidence to reach conclusions about motivation, and of these 36% kill an infant born too close to the birth of an older sibling. The rate was found to be higher in hunter-gatherer and fishing peoples than among horticultural and pastoral peoples. Hunting and gathering peoples cannot control the abundance of food resources available on the land. They can and do, however, exercise control over the size of their population relative to food resources, and abortion, infanticide

and geronticide (killing old people) are three of the means of population control available to them (see Harris 1972). Daly and Wilson (1984:489) reported on their examination of the records of a subsample of 60 HRAF societies in which they found that infanticide was practiced by 39 societies (or 65% of the sample). They broke the data down according to the rationale for killing infants given by each of the 35 societies for which there was sufficient information (ibid:490-491). The most common reasons cited were that the newborn was deformed or ill (21 societies), the child was the issue of an adulterous affair (15 societies), the birth of twins (14 societies), unwed mother (14 societies), birth too soon after previous sibling, or too many progeny (11 societies). The cross-cultural evidence suggests that among societies that practice infanticide, it is the parents or close relatives that kill the baby (Scrimshaw 1984, Bugos and McCarthy 1984:510, Dickeman 1975). Moreover, there exists a bias in favor of killing female babies in some societies (Dickeman 1979 on India, traditional China and western Europe, Minturn and Stashak 1982, Miller 1981, 1987 on Northern India, Adams 1972 on the Carib of Guyana, Bernstein and Kidd 1982 on Japan). In the eighteenth century the British found the people in northern India much preferred sons to daughters, and killed female infants in order to increase the proportion of sons in the family. The British outlawed this practice in 1870 (Miller 1981:49-50) and took strict measures to enforce the ban. It is curious that the Indians of the time were quite open about the practice, whereas other societies have tried to hide their infanticide - perhaps, as Barbara Miller (ibid:49) suggests, because of contact with Euroamerican cultures who negatively sanction it. Because of the reticence to discuss the topic, it is often difficult to acquire evidence of infanticide, even when it is strongly suspected to be practiced (see Aginsky 1939 on the Pomo tribe of California). But material presented by Jeffery, Jeffery and Lyon (1984) suggests that not only does sex-selective abortion, infanticide and infant neglect still exist in Northern India, reproductive technologies like amniocentesis are used to further such ends. In some areas of Northern India, the ratio of male to female births has already been skewed due to the use of amniocentesis. In some societies, infanticide has been practiced to eliminate babies who are considered to be an unproductive economic drain (Smith 1977 on 18th & 19th century Japan). In others, severe limitations are placed upon family size. Among the Tapirape Indians (until 1954), a woman could not have more than three living children, nor could more than two be of the same sex. This limitation was based upon native understanding of the availability of food resources for their population. Additional babies were put to death by burying them alive, with their umbilicus uncut, immediately after birth (Wagley 1977:135, 137). But economic strain is not the only condition that may determine whether a newborn lives or dies. Among the Bariba of Benin in West Africa, particular features of the infant or of the birth may indicate the influence of witchcraft and result in the death of the child. Such indicators include a breech birth, a premature birth at eight months, a baby who slides on its stomach at birth, a baby born with teeth or a baby whose teeth first erupt in its upper gums (Sargent 1988:80). If the baby is judged to be dangerous, it may be beaten to death by an elder (ibid:82). Gillian Cowlshaw (1978:281) has argued that among some Australian Aboriginal groups, women may kill their babies to spite male authority figures. Aboriginal women are considered low on the power structure and must spend their days feeding their families. This is arduous work and leaves them little time to follow their own desires. The association of infanticide with the birth of twins is of particular interest because of the association of twins with either evil or good fortune across the globe (e.g., see Jeffrey 1963 on the twin cult in Africa). Gary Granzberg (1973) has done some holocultural research which associates the killing of one of the newborn twins with conditions causing material and social disruption for a mother attempting to raise two infants. Of the 70 societies listed in the HRAF for which presence or absence of twin infanticide could be ascertained, 18 societies practice twin infanticide. Of these 18 societies, 16 societies confront conditions in which a mother attempting to raise twins would have to endure significant material and social hardship. Among some traditional Netsilik Eskimo groups, a variety of methods of female infanticide were used to limit population under conditions of severe food scarcity, to eliminate children of another father, because women are considered an economic drain (Balicki 1967:618-622), or to exert male dominance over the household (Freeman 1971). In winter, the newborn might have been placed in a pocket of snow and allowed to

quickly freeze to death. Or the infant might have been laid on its back and smothered with an animal skin. Decision to kill a female newborn was often made by the mother's husband or older male or female relative. Proper development is greatly desired by the Uduk of Sudan in East Africa (James 1988:108-117). Distorted development is considered dangerous to the matriline, and often stringent measures are taken to avoid such danger. Abnormal births, which includes the birth of twins, are considered a sign that some external influence has tainted the blood of the matriline and the offending infant (one or both twins) is killed (both mother and child were once at risk of being killed). Yanomamo Indians of Venezuela and Brazil may kill or fatally neglect a child of either sex who is physically deformed (with polydactyly, dwarfism, hydrocephaly, etc.), whose paternity is uncertain, or if the birth is too close to a previous birth (Chagnon et al. 1979:303320). The Yanomamo are not sympathetic to physical handicaps of any kind, and if a child should survive its puerperium, it may look forward to very harsh treatment later on (ibid:304). The decision to kill a baby is usually a woman's to make. A husband's influence over his wife's decision seems to be limited to situations where the paternity of the child is in serious question (ibid: 304). A woman may decide to raise both twins, or may kill one of them if she feels she will not be able to raise them both. Infanticide among the Mardudjara Aborigines of Australia is infrequent and occurs only under conditions of extreme necessity. They will kill a newborn by smothering it in the sand if it is deformed, if it is born too soon after the last child's birth, or if the mother is too weak to care for it (Tonkinson 1978:63-64). The child is killed immediately after its birth and before the mother has a chance to see its face or hear its cry. Fatal Neglect Outright infanticide is not required to eliminate unwanted or undervalued babies. Neglect of their basic needs may also serve the purpose (Cassidy 1980, Scrimshaw 1978, Gelles and Lancaster 1987, Korbin 1977, 1987; see also Scheper-Hughes 1985, but also Nations and Rebhun 1988 for a rebuttal). Edwin Prothro (1967:76) found that male babies are breastfed longer than female babies in Lebanon where there is a preference for sons factor that may contribute to differential survival. Miller has extensively analyzed population statistics for contemporary India and concludes that there remains a higher mortality rate among females in northern India, probably partially caused by relatively poorer nurture of daughters (1981:82). Minturn (1984) has discussed medical and nutritional neglect of girls, as well as murder of women whose families have failed to pay all of their dowry in Khalapur. Sheila Ryan Johansson (1984) has documented the fatal neglect of female infants and children in European and European-settled countries (see also Scrimshaw 1978:387).

THEORETICAL CONSIDERATIONS We in the west tend to acknowledge the positive, life-giving, nurturing aspect of motherhood, and to decry or repress the negative, neglectful and fatal aspect. Yet, as cross-cultural work on mythology has shown (Sautman 1986), both aspects are acknowledged among many traditional peoples, in part because the material consequences of having too many children are immediate and threatening to them. Managing the material conditions of life for these peoples also includes the management of fertility (Douglas 1966, Scrimshaw 1978). And this management may manifest as various forms of contraception, abortion, and even infanticide (Cowlshaw 1978). Moreover, as ethological studies with some primates and long-term fieldwork among humans have shown, parenting is a lifelong investment of time, resources, affect, caregiving, rights and responsibilities (Lancaster and Celles 1987). Sociobiologists explain the relationship between resource availability and parental investment in terms of increased parental fitness. "Parental investment theory claims that fertility decisions are made in such a way that parents successfully pass on their genes to future generations. From this view, parental investment is one of our species' more important adaptive strategies. By implication, parents may "cut their losses" with children that are not likely to increase their fitness; i.e., babies under some of the conditions we have reviewed above. The increased fitness argument is also found in the "Trivers-Willard hypothesis" which argues that under certain conditions, fitness of one sex may be greater than the other sex, and thus lead to social adjustment of the normal 50-50 sex ratio through abortion and infanticide (Hrdy 1987). Holocultural studies carried out by the Rohners (Rohner 1975, Rohner and Rohner 1980, 1981) to test their "acceptance-rejection theory" tend to support a similar, but less biologically deterministic view of parental investment. Faye Ginsburg and Rayna Rapp (1991) have put a political spin on

their account of reproduction. They indicate that all societies exercise control over certain facets of reproduction, including comprehension of fertility, how menstruation is conceived and treated, when in the life-cycle reproduction is considered legitimate, how pregnancy and birth are structured, etc. Many cultural practices are determined by mode of subsistence. For instance, hunter-gatherers tend to impose constraints on fertility by, among other things, practicing such things as "contraception, abortion, infanticide, acceptable pregnancies, and child spacing" (ibid:327). Some theoretical work has attempted, with some success, to link infanticide - especially female infanticide - with warfare. William Divale (1971a, Divale and Harris 1976) has argued persuasively that preferential female infanticide is part of a package of traits that is characteristic of societies carrying-out chronic blood-revenge warfare, a type of warfare that was extremely common in intercultural relations among precontact traditional peoples. The primary function of this package was, Devale argues, a form of population control, and it works like this: Killing female babies eliminates women before they have a chance to reproduce, but also creates a demand among men for a scarce resource, especially in polygynous societies where one man may have two or more wives. The shortage of women creates a tension in the society that erupts into violence and blood-feuds. Warfare in turn eliminates males, thus relieving the competition for women. This model seems to cover such infanticide-practicing societies as the Yanomamo of Amazonia (Chagnon 1968; but also see Chagnon, Flinn and Melancon 1979), the Netsilik Eskimo (Balikci 1964:40-41, 62; 1967) and the Ibo of Nigeria (Divale 1971a:12-20). In holocultural surveys, Divale (1971b, 1971c) also showed a strong correlation between primitive warfare and infanticide among 112 and 139 different populations respectively. Hrdy and Hausfater (1984:xviii) make a distinction between human and non-human animal forms of infanticide. They feel that human infanticide is principally a kind of "parental manipulation" of investment expended on offspring. Humans seem to kill their babies (when it is a systematic procedure in a society) to protect older children who represent a longer investment, to deal with illegitimacy, disease, deformity, limited basic resources or an imbalance in the value of one sex over the other. They emphasize that many sociocultural and environmental factors can combine to influence the infant's chance of survival (ibid:xix). A number of authorities have offered sociobiological (or "adaptationist") theories of infanticide (see Alexander 1974, 1979, Daly and Wilson 1984). Martin Daly and Margo Wilson (1984) have argued on the basis of holocultural research into the rationale given by societies for killing infants (reported above) that infanticide tends to occur in situations where it is biologically adaptive to one or both parents for example, where another child would be an overwhelming drain on the available resources, where the paternity of the child is uncertain, or where the child is sick or deformed. Some authorities have held that the incidence of infanticide is associated with the type of marriage practiced in societies. Societies in which the preferred form of marriage is polygynous (two or more wives simultaneously sharing one husband) would use infanticide as a method for balancing the proportion of the sexes. But Barbara Charthier Ayres (1954:75) tested this hypothesis in a cross-cultural sample of societies and found no significant association between polygyny-monogamy and infanticide. Ayres (ibid:78) was able to show a low, but statistically insignificant, relationship between anticipated frustration of the mothers with respect to rearing infants and decisions to kill babies.

CONCLUSIONS While women everywhere are faced with hard decisions pertaining to fertility control, it would be an error of the first order to equate traditional forms of birth control, abortion, and especially infanticide, with modern forms of child abuse (see Ney, Fung and Wickett 1993). The withholding of affection and the rejection of the infant among traditional peoples is usually not motivated by the same emotions, nor the psychopathological conditions, that produce modern child neglect, abuse and murder. While the behavior in the case of infanticide may seem superficially the same - for example, the strangulation or suffocation of a newborn - there exists a subtle, but nonetheless significant difference with respect to the absence of negative affect and neurotic-psychotic cognition. Infanticide in traditional societies usually is not associated with anger or hatred of children, nor with the acting-out of psychotic projections. For example, the Tapirape Indians love and value children, but they face extreme limits on economic resources and population growth is viewed as general threat, and they do not wish to see their children starve. So they kill

some of their children at birth so that others may survive. The closest conditions among traditional peoples to those found in modern urban society would be an angry husband killing a newborn sired by his wife's lover. But the cross-cultural literature suggests that this kind of emotion-driven infanticide is rare. Among other things, it is usually considered critical that the killing of the newborn be carried out quickly and before maternal-infant bonding can occur - often before the mother can see the baby or hear it cry. When infanticide occurs in this manner, it appears in at least some cases that the parents do not experience grief (Wagley 1977:139). The reasons that we have encountered in the cross-cultural literature for why babies are not wanted are quite varied. The most common reasons seem to involve the practical options available to control of investment relative to: (1) resource availability, (2) the likelihood of the investment eventually producing a healthy, productive adult, (3) child-spacing where there are insufficient resources to raise more than one child at a time, and (4) increasing the proportion of male over female children for social and economic reasons. Contraception, abortion and infanticide can best be conceived as different phases of a continuum of methods of withholding investment in order to control population, lifestyle, and resource allocation. It is important to understand that traditional peoples are acutely aware of the fact that parental investment is a life-long commitment (Lancaster et al. 1987), and they consider the consequences of this commitment very seriously indeed. In this respect, they are faced with making much the same decision about parental investment that many women and couples do in our own society.

Footnote NOTES A holocultural study consists of a statistical summary of the presence, absence and correlation between traits in a sample of the world's cultures. References REFERENCES Adams, K. J. (1972). The Barama Caribs of Guyana restudied: Forty years of cultural adaptation and population change. Unpublished doctoral dissertation, Case Western Reserve University. Aginsky, B. W. (1939). Population control in the Shanel (Porno) tribe. *American Sociological Review* 4(2), 209-216. Alexander, R. D. (1974). The evolution of social behavior. *Annual review of ecology and systematics*, 5, 325-383. Alexander, R. D. (1979). *Darwinism and human affairs*. Seattle: University of Washington Press. Ayres, B. C. (1954). A cross-cultural study of factors relating to pregnancy taboos. Unpublished Ph.D. dissertation, Harvard University. Balikci, A. (1964). Development of basic socio-economic units in two Eskimo communities. *National Museum of Canada, Bulletin* No. 202. Balikci, A. (1967). Female infanticide on the Arctic coast. *Man (N.S.)* 2, 615-625. Benedict, B. (1970). Population regulation in primitive societies. In A. Allison (Ed.). *Population control*. Middlesex, England: Penguin. Bernstein, G. L. and Kidd, Y. A. (1982). Childbearing in Japan. In M. A. Kay (Ed.). *Anthropology of human birth*. Philadelphia: F. A. Davis. Bleek, W. (1990). Did the Akan Resort to Abortion in Pre-Colonial Ghana? Some Conjectures. *Africa* 60(1), 121-131. Brittain, A. W. (1992). Birth spacing and child mortality in a Caribbean population. *Human biology* 64(2), 223-241. Bugos, P. E. and McCarthy, L. M. (1984). Ayoreo infanticide: A case study. In G. Hausfater and S. B. Hrdy (Eds.). *Infanticide: Comparative and evolutionary perspectives*. New York: Aldine. Cassidy, J. D. (1980). Benign neglect and toddler malnutrition. In L. Greene and F. Johnson (Eds.). *Social and biological predictors of nutritional status, physical growth, and neurological development*. New York: Academic. Chagnon, N. (1968). Yanomamo social organization and warfare. In M. Fried, M. Harris and R. Murphy (Eds.). *War: The anthropology of armed conflict and aggression*. New York: Natural History Press. Chagnon, N. A., Flinn, M. Y. and Melancon, T. F. (1979). Sex-ratio variation among the Yanomamo Indians. In N. A. Chagnon and W. Irons (Eds.). *Evolutionary biology and human social behavior: An anthropological perspective*. North Scituate, MA: Duxbury Press. Cowlshaw, G. (1978). Infanticide in aboriginal Australia. *Oceania* 68(4), 262-283. Daly, M. and Wilson, M. (1984). A sociobiological analysis of human infanticide. In G. Hausfater and S. B. Hrdy (Eds.). *Infanticide: Comparative and evolutionary Perspectives*. New York: Aldine. David, H. P. (Ed.). (1974). *Abortion research: International experience*. Lexington, MA: Lexington Books. David, H. P., et al. (Eds.). (1988). *Born unwanted: Developmental effects of denied abortion*. New York: Springer Publishing Co. Devereux, G. (1967). A typological study of abortion in 350 primitive, ancient, and pre-industrial societies. In H. Rosen (Ed.). *Abortion in America*. Boston: Beacon Press. Devereux, G. (1976). *A study of abortion in Primitive societies (revised edition)*. New York: The Sulian Press, Inc. Dickeman, M. (1975).

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