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Infanticide in human groups

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The University of Montana

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The focus of this paper is to discern whether cross-cultural data better support the notion that infanticide, direct and indirect (abandonment, abuse, and neglect), and abortion are primarily demographic functions of environmental resource pressures or culturally sanctioned custom requiring parental selection under various social circumstances, or both.

The word "primarily" is used because there are many motives for abortion and infanticide. What I had hoped to find was a leaning toward one cause or the other within the available literature.

Selected data from the Human Resources Area Files (H.R.A.F.) have been placed on maps in an appendix for reference. In addition to the maps, there are two basic groupings of data, a historical and a regional overview, and a brief summation and discussion of some of the popular assessments of human infanticide by various theorists.

Once the historical and theoretical aspects (taken with the H.R.A.F. information) are reviewed, there appears to be a strong bias toward culturally induced and sanctioned custom as a predominant theme rather than acute or chronic environmental resource pressure promulgated by various theorists.

It is possible, however, that in many instances the practices of infanticide, both direct and indirect, as well as abortion, may be cultural vestiges of these pressures. There are, of course, some cases in which group or family survival seem to be paramount. These "survival" cases (in a strict sense) are comparatively few, which came as a surprise.

It seems as if the practice of infanticide and abortion occurred wherever it was socially acceptable, under prescribed circumstances, and did not often occur where it was prohibited or where incentives (emotional or otherwise) were greater for keeping babies alive.
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Descriptive Statement

Infanticide in human groups takes place in several forms: feticide, infanticide at or right after birth, and indirect infanticide which takes place sometime later in the form of gross abuse and/or neglect. As will be seen, opinions vary greatly as to the extent of direct infanticide, both in areas of occurrence and in the actual percentage of infants killed within a given group. Indirect infanticide generally occurs in cultures in which abortions or direct infanticides are not sanctioned, or at times of cultural transition when traditional childbearing and rearing practices are badly shaken. One example might be the intrusion of an external force such as Christian missionaries or a colonial government imposing stiff penalties on the "crimes of abortion and infanticide (especially in conjunction with the lack of a replacement birth control program). Other examples might arise out of culture change associated with alterations in the environment such as emigration or reruralization.

One thing that is certain is that infanticide has occupied a broad band of human time and space.

Historical Overview

Recorded instances of fatal child abuse and neglect, abortion, and direct infanticide (henceforward to be collectively referred to as "infanticide" unless other specified) permeate much of our literate history and, more recently, legal history. It has been said that
Darwin dated the onset of civilization from the onset of infanticide (Durand, 1972:370). However, it seems to occupy a much broader range. This portion of Chapter One will be devoted to insights and opinions offered by various interested historians.

David Bakan, in Slaughter of the Innocents (1975), presented numerous references to infanticide and abuse, in recorded history and in literature, as seen from this excerpt:

When a king died to whom he was grateful, a man buried his two daughters with him, in 587 B.C. in China. As late as 1873, female infanticide was permitted in China. It was, and still may be, the custom for new pottery furnaces in the Kiang-Si province to be consecrated with the secret shedding of children's blood. There is reason to believe that children were immured in the dikes of Oldenburg until the seventeenth century. The practice of sacrificing children at foundations is evidently an ancient practice in India as well. As late as 1843, when a new bridge was to be built in Halle, there was a widespread suspicion that a child was wanted to put into the foundation.

Infanticide has been reported as a regular feature of numerous cultures including the Eskimo, Polynesian, Egyptian, Chinese, Scandinavian, African, American Indian and Australian aborigine. In the Hawaiian Islands, it was customary to kill all children after the third or fourth. Among the Australian aborigines, if a woman had two children and was forced to march because of lack of food or water and if she could not carry two children, the younger one was customarily killed. James Frazer indicated that the Polynesians regularly killed two-thirds of their offspring. During the first half of the nineteen century, Rev. J. M. Orsmond reported on this condition in Tahiti. . . . More than two-thirds of the children were destroyed 'generally before seeing the light of day. Sometimes in drawing their first breath they were throttled to death, being called "tamari'i hia" (children throttled).' The Orsmond manuscripts indicate a dramatic relationship between infanticide and social class, there being a dramatic difference in obligation to commit infanticide depending upon which social class the parents belonged to. The lowest members of the society, who had only small and few tattoos, were obligated to kill their children. 'If any saved their babies, they were dismissed in disgrace from the society.' However, members of higher classes, virtually covered by tattoos, were obligated to refrain from killing their children.
According to one estimate, six-sevenths of the population of India practiced female infanticide prior to the present century. The British government in the early nineteenth century attempted to stop the custom of Hindu women in Bengal casting their children into the Ganges. The British also forced the people to substitute a sheep for the child that was customarily sacrificed on Friday evening at the shrine of Kali at the gate of Saiva Temple at Tanjore.

In classical times Seneca, Plato, and Aristotle maintained that the killing of defective children was a wise custom. The twelve tablets of Romuls of ancient Rome indicate quite clearly that the exposure of newborn infants was a rather common occurrence. Roman law gave the father the power of life and death over his children. This law was invoked against children not only in infancy and childhood, but also later in life (Bakan, 1975:30).

In cases in which a child was chosen to live, Bakan pointed out that many people felt it necessary to commemorate this decision with some sort of rite or ceremony:

In numerous places in history the child was not considered to have a claim on life until certain ceremonies were performed with baptism still remaining with us as an affirmation of the child's right to life.

[In early Scandinavia] the father would expose a child to take revenge for an insult on the part of his wife. Of the child or a concubine might be killed because of the jealousy of the right wife. A brother habitually killed the child of his sister if its birth caused the death of the mother. The old Vikings extended a spear to the newborn boy. If the child seized it, it was allowed to live. . . . More commonly the life of the child was made dependent upon the performance of a fixed ceremony . . . usually called 'Wasserweihе.' Immediately after the birth of a child the father was summoned, and the child was placed either on his knee or on the floor before him. If he decided that the child should live he took it up in his arms. Then water was poured on the child, a name was given, and generally it was presented with a gift. Not until then was nourishment given to the child. If the child was not taken up by the father, it was immediately exposed or killed without baptism and without food. If either of these two conditions had been fulfilled, it became illegal to kill a child. . . . From the time that a child was baptized, it has property rights (Bakan, 1975:30).
It would seem that prior to some ceremony bestowing spiritual and legal presence, it was acceptable to kill a child. This or some similar custom appeared again and again in the literature. Since there are too many examples to recount, but here are a few more selections from Bakan's *Slaughter of the Innocents* (1975):

The Egyptian midwife had to pray for the soul to join the newborn infant, and the Babylonian father had to impart his spirit into the child by blowing into its face and then giving it its name or the name of one of his ancestors, thus bestowing upon it a soul.

The Frisian father could destroy or otherwise dispose of his infant only before it had taken food (Bakan, 1975:32).

If the [Athenian] child was not wanted, the father had to dispose of it before the amphidrama [a recognition rite performed on the fifth day of life]. In general, the longer a child was permitted to live, the more the parents became attached to him, and thus the longer he survived the greater his chances for social recognition and parental care (Helfer and Kempe, 1968; cited in Bakan, 1975:32).

Robert Mulford, writing a section on "Historical Perspective" in the book *Child Abuse and Neglect* (1983), presented a similar historical recapitulation:

History records practices of every form of neglect, abuse and murder imaginable throughout the world as well as in so-called civilized cultures. In China girl babies were drowned; in Egypt children were buried alive to serve deceased persons in the afterlife; in ancient Rome fathers had the right to sell, mutilate, or kill their children; and in the eighth century B.C. Roman citizens were ordered to bring up all healthy males and at least one female child. [In ancient Greece there was a chapter in Soranus' Gynecology on "How to recognize a newborn that is worth rearing" (cited in Cowlinshaw, 1978:262)].

As late as 1204, the Pope, moved by the frequency with which fishermen of the Tiber found children in their nets, dedicated a part of a hospital to the care of abandoned children. . . . In seventeenth century France, despite regulations and decrees of authorities, child murder increased. Some babies were thrown into sewers, others lay deserted on

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the highways, and the more fortunate were left at hospital doors. Vagrant children in sixteenth century England fueled the apprentice system. It was not until 1874 that a significant movement to recognize the rights of children [who worked in factories if they were old enough to stand] in the United States became evident (Mulford, 1983:1).

Children were frequently not killed outright but were exposed in the woods on throughways or on doorsteps. Morton Cogan (1968:133) has pointed out that the word "exposure" fits many recorded instances of infant rejection better than the generally used words "cast" or "fling." Some of his examples include Hagar's son, whom she could not suckle (see Jeremiah, 38:3), and Dargon I, an Akkadian monarch who referred to himself as the unwanted offspring of an apparently illicit relationship. "My mother abandoned me on the river" in a "covered basket of rushes." As also was done with Moses, the primary intent was not to kill the child but to give it a chance to be saved. In Moses' case, an older sister remained hidden near the basket to learn of the infant's fate. Whether the intent was to kill outright or to abandon only, the result was generally very much the same.

Regional Overview

In this section, we move from a broad historical review to more specific instances of literary, cultural or geographical groups for whom a convenient abundance of literature was available. These groups include biblical references, Greco-Roman law and literature, Japan of the eighteenth century, Anglo-American tradition and law, Russian and China.
Biblical References

The Bible is filled with incidents of child-killing and exposure, many of which are familiar to us. Pharaoh's order to kill male infants was directed at a prophesied antagonist, Moses. Similarly, horrible decimations were ordered by Herod in an attempt to destroy Jesus, and by Nimrod upon the birth of Abraham. In the latter instance, midwives delivered their patients under controlled circumstances in a special building for this purpose and they were sworn to put all male children immediately to death. Another type of infanticide is represented by the willingness of Abraham to offer the blood of his soon Isaac on the altar as a sacrifice to God. Isaac was more fortunate than many.

In Slaughter of the Innocents (1975), David Bakan has again insightfully discussed several other biblical references to child-killing:

The prophets often preached against the killing of children and most surely were not addressing themselves idly to the issue.

There is evidence that hell was originally the place where children were burned. The New Testament word for hell is Ge-Hinnom. Hinnom is a valley near Jerusalem which the prophets railed against as the place where children were destroyed. Jeremiah called it the 'Valley of Slaughter' (Jeremiah 7:32). It was in such valleys that children were killed at least in the eras of Solomon, Ahaz and Manasseh, in biblical history. Solomon 'did evil in the sight of the Lord' and 'did build. . . a high place for Chemosh. . . and for Molech' (1 Kings 11:7), gods to whom living children were sacrificed by burning. King Ahaz 'burnt incense in the valley of the son of Hinnom and burnt his children in the fire' (2 Chron. 28:3). King Manasseh 'caused his children to pass through the fire in the valley of the son of Hinnom' (2 Chron. 33:6). This valley took on sinister significance and played a role in the fashioning of virtually all myths of hell since then. It was later turned into a garbage dump that burned continuously, providing an image of the continuous burning of the fires of hell.
The immurement of children in the foundations of erected structures has an ancient history. Joshua's curse against anyone who would rebuild Jericho was 'he shall lay the foundation thereof in his firstborn, and in his youngest son shall he set up the gates of it' (Josh. 6:26). And this curse is fulfilled sometime later, if we take the biblical account as historical. 'In his days did Hiel the Bethelite build Jericho: he laid the foundation thereof in Abiram, his firstborn, and set up the gates thereof in his youngest son Segub, according to the word of the Lord, which he spake by Joshua the son of Nun' (1 Kings 16:34).

Archaeological finds have revealed many jars among the Canaanites with the bones of newborn infants. The jars had been buried under house corners, thresholds, and floors (Bakan, 1975:28-29).

It might be prudent to reserve speculation on the causes of death for the infants in the jars. Infant mortality and birth accidents may have accounted for some; however, immurement references seem to be fairly common and perhaps we therefore should not throw out all of the jars.

Although the Bible filled with references to infanticide, it is by no means alone as a record of this practice in ancient times.

Greco-Roman Law and Literature

One of the first places to look for references to infanticide would be in Greco-Roman law and literature, and commentaries thereon. Abandonment and foundling themes were quite common in myth, tragedy, legend, and legislation. Exposure seems to have been a standard procedure of the day.

It was the opinion of A. Cameron, in his article on "Exposure of Children and Greek Ethics" (1932),

firstly that exposure is a method of limiting the family. . . from the causes which have proved irresistible; secondly that the cruelty involved in infanticide even by exposure is very slight, a fact which is well-recognized in modern legal practice" (Cameron, 1932:105).
He pointed to various references in Greek and Roman law which may indicate that illegitimate babies, and girls in general, were the more frequent targets. He also suspected that infanticide was a factor in the population decline during the Hellenistic period of Greece. The practice may not have been as common in classical Greece; however, the influence on Athens from Sparta cannot be denied. Spartans were known to expose deformed infants and it also seems possible that exposure could be the fate of any child after the first, even in the face of possibly negative public opinion.

Cameron (1932) also speculated that artifacts such as tiny coffins for infants and burial trinkets made it appear likely that the exposed child was outfitted for death. The "crepundia" which accompanied the abandoned infant were the same trinkets worn by living children.

It seems legitimate to conclude from this evidence, though it is admittedly slight, that exposure was familiar even in Athens of the classical period, although the prosperity of Attica in the fifth century may have made it less common than it became later (Cameron, 1932:107).

... It is clear from mythology and legend that the practice was known in the Mediterranean area from the most ancient times, and that it survived continuously and did not merely spring up sporadically in times of stress is proved by the continuity of a recognized technique from the earliest to the latest period. ... It is harder to prove further with archaeology (Cameron, 1932:107).

Several archaeological excavations mentioned by Cameron have produced an almost unbelievable number of newborn skeletons but again, as he pointed out, it would be guesswork to sort out which were neonatal mortalities and which were infanticides.

Of the various means of infanticide, Cameron (1932) felt that exposure was one of the oldest, more primitive methods:
In contrast to the more sophisticated customs of abortion and simple infanticide, exposure bears the mark of a very primitive origin in the fact that the infant is exposed alive. The parents who are willing to leave their child to perish by cold or hunger or by attack of wild beasts are nevertheless unwilling to stain their hands with kindred blood. . . . The child as a product of the year's increase is dealt with hardly differently from the other young things of the household. The attitude is rooted in the conditions of primitive life. In the most favorable circumstances, it would be impossible for any family to maintain all the children it could bring into the world even if the mother were capable of nursing more than one at a time. Family limitation being a necessity, infanticide is the method for securing it among primitive peoples of modern as well as ancient times. We have, of course, no direct evidence for the practice in primitive Greece, but there is abundant indirect evidence in mythological tales and legends which are too familiar to need recounting. . . . The exposure motif is combined as a rule with the theme of the father's fear of his son or the ruler's fear of a successor (Oedipus, Paris, Jason).

[As civilization advances] we have to reckon on the one hand with the development of more civilized methods of family limitation and on the other hand the growth of a powerful opinion against infanticide in any form. That, in spite of these changes, exposure and infanticide in other forms were not only practiced but also publicly recognized is clear not only from the evidence of Roman law, which has been mentioned, but also from Greek law, religion, and philosophy (Cameron, 1932: 107-108).

Cameron (1932) gave examples of how influential Greek individuals acknowledged the custom of infanticide for "practical" reasons. Plato suggested that in the ideal state infanticide and exposure are clearly envisaged as a means of maintaining the purity of the population and to limit the family to two. . . . Aristotle also called for regulations for limitations of a family" (Cameron, 1932:108). Aristotel felt that abortion was a means available to those who were adverse to exposure. He also felt that no deformed infant should live, nor "excess"
offspring. This reference to abortion could reflect a growing aversion to exposure by the time of Aristotle. According to Cameron,

we know that abortion must have been common much earlier, and we know also that in certain quarters it must have been regarded with displeasure because... participation in operations of this kind was forbidden in the medical writings of Hippocrates (Cameron, 1932:109).

Literary references showing signs of distaste began to increase and periods of purification were required for abortion and exposure.

The acceptability of these customary practices was on the wane. Other negative references were to the appearance of two groups during the Apocalypse: abortions and exposures; the prohibition of infanticide and abortion from the inception of Christian morality; and Philo's description of parents who expose their offspring as behaving like "wild beasts who copulate for pleasure." Cameron (1932) concluded that:

Views of pagan moralists like Musonius coincided with those of the Christians, and from this time onwards there is no rational defense of infanticide except in the special case of deformed children, and even that soon disappears... [However], the practice of exposure persisted into Mediaeval and even, in disguised form, into modern times... Exposure and infanticide were undoubtedly to a large extent the result of economic pressure, and Christianity did nothing to mitigate this beyond inculcating a standard of self-control amounting almost to an expulsion of nature (Cameron, 1932:113).

Donald Engels, on the other hand, writing on "The Problem of Female Infanticide in the Greco-Roman World" (1980), countered: "After careful analysis of the literary evidence, earlier studies concerning the exposure of children (and any resultant infanticide) have established that the practice was of negligible importance in Greek and Roman society" (Engels, 1980:112). He strongly questioned any archaeological
support for a high ratio of newborn skeletons. "Recent attempts to draw conclusions from skeletal remains and other archaeological evidence that suggests male-female sex ratio imbalances and possible high rates of female infanticide are not convincing" (Engels, 1980:112). As other commentators on female infanticide also speculated, Engels felt that

a high rate of female infanticide in antiquity was demographically impossible, and a rate of more than a few percent of live female births per year was highly improbable for more than a short period. Clearly, high rates of female infanticide were impossible for any ancient population. Even low rates, in a stable or nearly stable population, would cause... decline at a geometric rate. For these reasons, a rate of 10 percent of female births killed per year would be highly improbable, and the rate almost certainly never exceeded more than a few percent of female births in any era" (Engels, 1980:120).

Several criticisms might be interjected here. First, it is not unusual for couples lacking modern birth control methods, and who practice infanticide or have a very high infant mortality rate (thus reducing the spacing of births through shorter or nonexistent lactation periods), to produce nine to thirteen babies during their years of fertility together. If between two to four of these children survive to reproduce, the population might be expected to sustain itself. Meanwhile, a fairly high rate of births might be eliminated. In fact, many peoples did try to limit their families to from two to four children. As an example, some villages of the Punjab in India were widely rumored to have few or even no female children due to severe local custom. These practices were carried on for a half dozen or more generations without the annihilation of the populace as a whole.
Culture adapted. Brides were brought in from other villages, and polyandry and bachelorhood were practiced:

There was a community of Rajputs of which it was reported: 'Not only are there no girls to be found in their houses now, but there never have been any, nor has such an event as the marriage of a daughter taken place for more than 200 years' (Punjab Census Report for Indian, 1911: Part 1:216).

Therefore a high sex ratio imbalance does not necessarily mean group extinction, because of high fertility or much overlooked cultural allowances or even culture change, as shown by the Rajputs.

Returning to Donald Engels (1980), we continue with his explanations for skewed osteological evidence in Greek and Roman archaeological sites:

The survival of skeletal material depends to a large extent on the size and thickness of the bones and since infants and women have smaller, thinner bones than men, fewer are likely to survive. Furthermore, excavators are more likely to discard smaller, broken specimens, thus distorting the age of the remains upward and biasing the sex ratio towards males. . . . Few infants, even today, dying within a few days or weeks after birth receive standard burials in cemeteries, and since infant mortality was likely to have been high in antiquity [the correlation between infant bodies and infanticide may be poor]. . . unless the entire skeleton is available for examination, the probability of correct sex classification may fall as low as twenty percent (Engels, 1980:112-113).

Although some of Engel's (1980) points about the unreliability of osteological evidence have merit, the general assumption of high infant mortality in antiquity may be questionable. Engels did not address the literary and legal aspects that were raised by Cameron (1932); these two points are substantiated by Bakan (1975) and Max Radin (1925):

In classical times, Seneca, Plato, and Aristotle maintained that the killing of defective children was a wise custom. The twelve tablets of Romulus of ancient Rome indicate quite
clearly that the exposure of newborn infants was a rather common occurrence. . . . Later on, Constantine abolished the law, but allowed the sale of newborn children into slavery (Bakan, 1975:32).

Deformed children were required to be killed by the Twelve Tablets and this was endorsed by Justinian. The practice was abolished by the constitution of 374 by Valentinian. Abandoned children who were subsequently rescued were frequently enslaved. Justinian abolished such slavery and declared these children to be forever free. By the third century, Paul stated that infanticide at the father's whim was already prohibited. However, until Valentinian's code, infants were abandoned in public places, leaving a possibility of rescue. Valentinian decreed that anyone, be it parent, guardian or stranger, who abandoned an infant would be considered guilty of murder.

Until Hadrian's time, legitimacy could be questioned arbitrarily. Radin (1925) said of the father:

There was a moment at which he made his decision. And if he rejected a child because he professed to believe it illegitimate (he had the right to reject it for any reason or no reason at all if he wished), he refused to pick it up from the floor when it was laid at his feet (Radin, 1925:338).

"In Republican Rome, Tacitus speaks of the fact that Germans and Jews reared all of their children. Although this was not accurate, it undoubtedly sounds as though he thought the fact exceptional. . . ." (Radin, 1925:342). Thus, it seems more plausible that infanticide was widespread and was practiced for reasons which included family size limitation, perceived birth deformities, and rejection because of illegitimacy or sex—or whimsy.
Japan of the Eighteenth Century

In order to probe the slow population growth of a financially burgeoning Japan from 1721 to 1846, we will use for discussion an article by Robert Eng and Thomas Smith: "Peasant Families and Population Control in Eighteenth Century Japan" (1976). Factors which could have made minor contributions to this condition were couvade, length of suckling, slow reappearance of ovulation, and (rarely) contraception and sterility. Eng and Smith (1976) attributed a good part of the low number of registered births to abortion, which was not sex selective, and to infanticide, which definitely was. There was a strong tendency for families to approach a boy, girl, boy, girl continuum. A Japanese term for such selectivity is "mabiki," the thinning of rice seedlings (human as well).

Infanticide, common in the past in both East and West, has been seen by historians mainly as a product of social demoralization and the struggle of parents to keep themselves and favored progeny alive. . . . But it fits the Nakahara case badly. Infanticide seems to have been widely practiced there by the most respectable and stable part of the population. . . . Also infanticide seems to have been practiced by large holders, as well as, though somewhat less frequently than, small, and by all holders as often in good as in bad growing years. At any rate, we find no difference in registered births per thousand of population in years when rice was dear and when it was cheap, though the marriage rate differs significantly for these groups of years.

Among the apparent objectives of infanticide in Nakahara were: overall family limitation; an equilibrium of some sort between family size and farm size; an advantageous distribution of the sexes in children; spacing of children in a way convenient to the mother; and the avoidance of an unlucky sex in the next child [after an infant death]. These goals required foresight and the ability to carry out long-range plans, qualities not usually associated with demoralized or desperate people (Eng and Smith, 1976:443-444).
This last statement deserves special consideration. When one looks at any group practicing infanticide, it should be noted whether or not the custom is sustained methodically through time or if it is a desperate measure of a temporary or sporadic nature. A sustained tradition is usually suggestive of custom and convenience (an exception would be the chronic poverty of peasant China which is exacerbated by the land tenure structure). Other adaptations of economy and culture generally are available to those who for one reason or another do not block the desire to raise a newborn. The 329 Human Resources Area Files (HRAF) entries selected, examples of groups which cherished twins, raised deformed infants, and/or mothers who were able to care for two nursing infants, were noted. Ironically, several of these were on China's border in Tibet and Indochina and, what is more, people of mixed marriages, Chinese-Tibetan for instance, practiced some infanticide while Tibetan-Tibetan couples would not except in the case of illegitimacy) (Rockhill, 1895: 676; HRAF). Similar records exist for Mongour and Manchu (Schram, 1932:118; HRAF) and Lodak (Peter, 1963:430; HRAF) and Lepcha (Gorer, 1938:173; HRAF), as well as some southeast Asian groups.

The fact that family and friends are available resources is frequently overlooked. Some grieving fathers even try to secure wet nurses for infants who survived the birth experience alone. Culture can adapt if there are not more demanding social or psychological factors such as prestige or convenience blocking the way. Where there is enough will there is usually a way, or on a personal level if there is enough will to override other traditional and cultural requirements.
In cultures with strict child-rearing taboos, there were often devices such as smuggling routes for parents and child or, lacking these, desperate dashes or banishment from the society for those who would try to refuse their obligation to kill their infants.

Therefore, Nakahara infanticide is typical of a sustained, traditional practice which for various reasons was accepted as appropriate by the population.

**Anglo-American Tradition and Law**

Anglo-American heritage is not without a major share of infanticide, abortion, abandonment, and general abuse. At the end of this section is a supplement on child abuse, since idiosyncratic abuse is often attributed to Western culture and the subject has been more thoroughly covered for England and the United States than for most other Western countries. Much infanticide in these two regions has been the result of gross abuse and neglect.

Most of us are well acquainted with gruesome nursery rhymes and childhood tales which deal with less than adequate child care (Brothers Grimm; Rock-a-bye Baby, etc.) and David Bakan, in *Slaughter of the Innocents* (1975), presents us with a number of ghoulish examples (you may find many others come to mind). "Jack's alive and likely to live,/If he dies in your hand, you've a forfeit to give." This is a morbid rhyme about which Bakan said:

This game and its verse are believed to have been connected with a medieval heretical sect called Boni Homines. This group was accused by the orthodox and the clergy of engaging in a rite in which a deliberately injured child was passed around from hand to hand, with the idea that the spirit of the child would descend on the person in whose arms he died (Bakan, 1975:34).
The theme of overly harsh treatment and child murder by religious and fanatical groups crops up again and gain. A case within the last few years comes to mind: that of a child's death due to excessive beating by adults in a group known as the Rainbow Family, which was living in Montana. Children might be zealously punished "to set them straight," "beat the Hell out of them," "don't spare the rod," etc. In addition to these cruelties are the ritualized murders that are often associated with religious cults (and not just those in the Old Testament), of which the Jonestown massacre is just one example. Bakan presents us with additional lore:

The suspicion exists that the popular Scottish song of John Barleycorn, written down and adumbrated by Robert Burns, is based on a ritual in which a human representative of John Barleycorn was ground with the grain (Bakan, 1975:34).

In England, the frequent relationship between illegitimacy and infanticide was the topic of the very popular ballad of "The Cruel Mother":

Verse 10: "You took your topknot from your head
And tied us babies hands and legs."
Verse 11: "Then you took your penknife (long)(keen) and sharp,
And pierced us babies tender hearts" (Bakan, 1975:34).

As if this were not enough, Bakan (1975) quoted from Jonathan Swift's "A modest Proposal for Preventing the Children of Ireland from Being a Burden to Their Parents or Country" (from W. A. Eddy, ed., 1965, Satires and Personal Writings: 21-31; originally published in 1729):

'It costs about two shillings to rear an infant for the first year,' he said, and 'no gentleman would repine to give ten shillings for the carcass of a good fat child, which... will make four dishes of nutritive meat, when he hath only

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some particular friend or his own family to dine with him.' Thus, 'the mother will have eight shillings neat profit and be fit for work till she produces another child.' He urges, 'the mother[s] to let them suck plentifully in the last month, so as to render them plump and fat for a good table.' One of the advantages of his scheme is that it would prevent 'that horrible practice of women murdering their bastard children, alas! too frequently among us, sacrificing the poor innocent babes... more to avoid the expense than the shame' (Bakan, 1975:39-40).

Bakan (1975) had this to say on the subject of the efforts of Charles Dickens:

The hard lot of children in the growing industrial society is indicative of the conditions in which he lived. 'The Dickens' remains as a euphemism in our language for the beating of children. The beating scene depicted in his David Copperfield is only a pale literary reflection of the abuse of children that arose as their existence became increasingly a threat and a burden (Bakan, 1975:40-41).

These stories were by no means restricted to the United Kingdom but were characteristic of all Europe. There was a growing need for child's rights.

Some public awareness of the existence of the problem of child abuse accompanied the growth of the large urban-industrial centers of the late nineteenth and early twentieth centuries. The situation with respect to infanticide is manifested in the following summary from an 1890 edition of the Encyclopaedia Brittanica: 'The modern crime of infanticide shows no symptom of diminution in the leading nations of Europe. In all of them it is closely connected with illegitimacy in the classes of farm and domestic servants. The crime is generally committed by the mother for the purpose of completing the concealment of her shame and, in other cases, where shame has not survived, in order to escape the burden of her child's support. The paramour sometimes aids in the crime, which is not confined to unmarried mothers.... It is difficult to say to what extent infanticide prevails in the United Kingdom. At one time a large number of children were murdered in England for the mere purpose of obtaining the burial money from a benefit club. In 1871, the House of Commons found it necessary to appoint a select committee to enquire as to the best means of preventing the destruction of the lives of infants put out to hire by their parents. The trials of Margaret

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Walters and Mary Hill called attention to the infamous relations between the lying-in houses and the baby-farming houses of London. The form was gone through of paying a ridiculously insufficient sum for the maintenance of the child. "Improper and insufficient food," said the committee, "opiates, drugs, crowded rooms, bad air, want of cleanliness, and willful neglect are sure to be followed in a few months by diarrhea, convulsions, and wasting away." These unfortunate children were nearly all illegitimate and the mere fact of their being hand nursed and not breast, goes some way (according to the experience of the Foundling Hospital and the Magdalene Home) to explain the great mortality among them. Such children, when nursed by their mothers in the workhouse, generally live. The practical result of the Committee of 1871 was the Act of 1872 . . . which provides for the compulsory registration of all houses in which more than one child under the age of one year are received for a longer period than twenty-four hours' (Bakan, 1975:42-44).

Statistics on the number of bastard children in turn-of-the-century England were listed by Sigmund Engel in The Elements of Child Protection (1912):

The annual number of illegitimate births in England exceeds 600,000. In most European countries the illegitimate births constitute from 8 to 9 percent of total births. For every large country in Europe the illegitimate number several millions, primarily in the working class and domestic servants. Perhaps 80 percent [of all such births] belong to these two groups (Engel, 1912:17).

Besides the tragedy often associated with illegitimacy, exploitation of offspring in the eighteenth century included the deliberate maiming by parents of their children, who might then be sent out as beggars or be sold to circuses and sideshows, and others who might be killed for their inheritance or, as already mentioned, for "burial club" benefits. However, things were beginning to change.

John Spargo's The Bitter Cry of the Children (1906) was instrumental in focusing public attention on the abuse of children and their
mothers in industrial settings. Thus, eventually came the passage of child labor laws.

Spargo (1906) commented

Thus the employment of the mother is responsible for numerous evils of underfeeding, improper feeding, and neglect. She works from early morn till night, pausing only twice or thrice a day, to snatch a hasty meal of bread and coffee with the children (Spargo, 1906:35).

He also pointed a chastising finger at other threats to newborns such as poverty, poor midwifery, and maternal ignorance and neglect. He exclaimed that an infant is "no more responsible for its poverty than its birth" (Spargo, 1906:1) and that "The cry of a child for food which its mother is powerless to give it is the most awful cry the ages have known" (Spargo, 1906:3).

It is surely better that a babe be strangled in the process of delivery from its mother's womb, never to utter a cry, than that it should live to cry of hunger which its mother cannot appease, or from the torture of food unsuited to its little stomach! (Spargo, 1906:51).

As to the role of midwives: "Last year there were more than 6,000 such tragedies [stillbirths] in the city of New York alone, and the number in the whole country was probably not less than 80,000. . . . Another 45,000 [were suspected] to be infanticide immediately after birth" (Spargo, 1906:51), which is done by the aid of midwives.

A chilling example of the rampant ignorance and neglect of the times is that

one poor woman, whose little child was ailing, became very irate when a lady visitor ventured to offer her some advice concerning the child's clothing and food, and soundly berated her would-be advisor. 'You talk to me about how to look after my baby! she cried. 'Why I guess I know more about it than you do. I've buried nine [out of eleven] already!' (Spargo, 1906:51).
Concerning the actual development of policy in Great Britain, Brian Frazer provided a concise historical description of children's work laws in England in his essay "The Family and the Law" (1976):

The sixteenth century, a period of economic transition for Great Britain, saw a dramatic increase in the numbers of poor children produced by poor families. Many turned to begging for survival. The private English charities, which had previously cared for unwanted poor children, buckled under the increase. Beginning in 1535, the English Parliament attempted to deal with starving parents and starving children by putting them to work. The Elizabethan poor laws, enacted in 1601, provided England with its first comprehensive program for poor relief. Children whose parents could no longer provide for them were put directly to work or were apprenticed (Frazer, 1976:323).

Although at the time this program was thought to be helpful and economically feasible, it was a disaster. Therefore, by the middle of the sixteenth century the poor laws were replaced by workhouses for children. Any child five years of age and up was eligible to work 14-hour days seven days a week. "With the advent of the Industrial Revolution in England (1760), children of the poor became an increasingly important element in private industry with an easily trainable, extremely cheap, and quite durable work force" (Frazer, 1976:323). It was nearly 200 years before another substantial change as made:

The 'Pauper Apprentice System' was so badly abused, and children so cruelly and inhumanely treated that the English Parliament outlawed it with the passage of the 'Factory Acts' in the early 1800s.

The Factory Acts applied only to children who had been separated from their parents; they did not apply to young children who were still living with their own parents. Since a parent was entitled to his child's earnings, it became increasingly popular for the parents to put their children to work in factories. Parents simply exercised their proprietary rights, contracted out their children to
industry, and collected their wages. The Babylonian, Greek and Roman concept that children were economic units to be manipulated by their owners flourished again in nineteenth century England.

Infanticide was specifically prohibited in England. Nevertheless, it retained a certain amount of viability. As late as the nineteenth century, 80 percent of the illegitimate children put out to nurse in London died, for many years nurses took the children, killed them, and continued to collect the nursing fees. In England a newborn child could be insured for about one pound sterling. If the child was killed by his parents, or given to a third party and killed, the insurance policy netted a profit of between three and five pounds sterling, the insurance scheme was referred to as the 'Burial Club.' Earlier societies had predicated the practice of infanticide on the basis that a child was unwanted, was deformed or had wronged his parents. In England, the practice was predicated on the basis of profit.

Like earlier socioeconomic systems, the English practiced infanticide and defined the parent-child relationship in terms of proprietary interests (Frazer, 1976:324-325).

Leo Abse, in "Infanticide and the Law" (1966), told of a legal system which advocated mercy for the perpetrators of a crime, for which it was difficult to prove intent in the first place:

No one knows how many mothers in Britain kill their newborn babies. The dust bins throw up some 200 such corpses annually. One London pathology department sees 50 every year, and the stillborn figures conceal many a little one who for a short time breathed before being strangled or smothered. The Home Office does not even know how many mothers have been charged with infanticide in recent years. . . . Less than 100 years ago, the terrifying figure of 5,000 inquests a year on children under five was commonplace, . . . among these cases of child murder there were two groups: those who deliberately murdered unwanted children and those who were ill through childbirth. Despite intemperate abuse from some judges, juries refused to send the sick mothers to the gallows. They knew that it was not uncommon for dogs, cats, sows, white mice and rabbits to kill their young at or about the time of birth, and they stubbornly refused to heed reactionary lawyers who wanted to extend less mercy to a woman than to an excitable bitch.
The woman who in madness has extinguished the life she has created needs pity and help, and her family need privacy in their sorrow. It is now time the law desisted from its hunger for punishment and proffered compassion to the distraught mother (Abse, 1966:256).

Meanwhile, in America child management and parent-child relationships "closely paralleled that in England [with] involuntary separation of children from parents who could not support them, and apprenticeship" (Frazer, 1976:325). Another sign of the times was the fact that in 1628 the colony of Massachusetts enacted the "Stubborn Child Act":

A stubborn or rebellious son of sufficient years of understanding; viz 16, who will not obey the voice of his mother or his father, and that when they have chastened him will not hearken unto them. . . such a person shall be put to death (Cited in Frazer, 1976:325).

Frazer (1976) continued

There were some reported cases where American courts took active measures to protect a child's safety, but these were the exception. . . . Finally, in 1874 the state, its citizens and the court seemed to take active cognizance of the fact that a child did have the right of not being severely beaten and cruelly and inhumanely treated (Frazer, 1976:323).

This Act was initiated by the Mary Ellen Wilson case, which had been described by Robert Mulford (1983) in his "Historical Perspective":

It was not until 1874 that a significant movement to recognize the rights of children [who worked in factories from the time they were old enough to stand] in the United States became evident. Mrs. Charles C. Wheeler, fulfilling the last request of a dying woman, tried to aid an 8-year-old girl, Mary Ellen Wilson, a neighbor. She had been brutally beaten by her guardian to whom she had been indentured at the age of 18 months. Mrs. Wheeler was advised by the charitable agency not to interfere and when she went to the police was told that since no law had been broken, there was nothing they could do. Her pastor and her attorney advised her to drop the matter lest she be involved in a civil suit. Finally, she went to Henry Bergh, president of the New York Society for the Prevention of Cruelty
to Animals, . . . Mr. Bergh decided, 'If that child has no rights as a human being, she shall at least have the justice of a cur on the street.' After conferring with the S.P.C.A. counsel Elbridge Gerry, Mary Ellen was brought into court, placed with Mrs. Wheeler, and the guardian was sentenced to one year in prison. This was the first step in establishing the rights of children in the United States. . . . So many cases [then] were brought to Bergh's attention that he and Mr. Gerry formed the New York Society for the Prevention of Cruelty to Children in 1875.

The early reports of these privately supported societies detailed gruesome stories of children who were savagely beaten or sold to so-called 'baby farms' where they were neglected or beaten and allowed to die. Parents brought the children to the 'baby farms,' paid the proprietors to keep them, and abandoned them. It is reported that within a radius of one and a quarter miles of one such home bodies of 25 infants were found within a four month period. Other children were intentionally maimed by abuse parents and sent out on the street to beg. . . . Their [S.P.C.C.] response was to rescue the child and prosecute the parents (Mulford, 1983:21-24).

In summation, Mulford (1983) felt that throughout history, attitudes toward children have reflected the value society has put on them at a given time [and] we have moved from a time when children were murdered with no penalty to the perpetrators to a time when laws for the protection of children provided help for those who neglected or abuse children" (Mulford, 1983:24).

Abuse, and the neglect which is frequently associated with it, is said to be found in Western cultures or other cultures which have sustained gross changes in environment or structure (Field, 1983). But how shall we define this vice and what conclusions can we reach on how to help with preventive measures?

C. J. Flammang, in The Police and the Underprotected Child (1970), and Leslie A. Fiedler, in "On Infanticide" (1981), have attempted to put the plight of abused children into perspective:
Many of the children will never be identified as battered children but will continue to suffer trauma until they are old enough to protect themselves, or until their lives are snuffed out in one moment of anger or uncontrolled emotion. . . . The infant child. . . cannot walk. This child is confined not only to the home environment, but more specifically to the very place he is put, be that a bed, a freezer, or a bathtub full of water (Flammang, 1970:90).

Babies are, with disconcerting frequency, victims of maternal abuse of which being truly defenseless and vulnerable they are likely to perish. And the cause of such sub-intended infanticide is most often perhaps the kind of rage and frustration prevalent among mothers with only the haziest romantic notion of the realities of life with a new, unremittingly demanding child. Released by drink or dope, or exacerbated by neglect and abuse from husbands, themselves driven out of control by similar pressures, such rage eventuates in death. . . . In such households, in fact, it constitutes a kind of belated birth control; the birth control of the careless, the ill-informed or of those whose religion forbids (and in this country, Roman Catholicism is largely a working class religion) artificial contraception, sterilization or abortion. [And as a substitute] it is the modern equivalent to the quasi-accepted 'rolling over' in bed or farming out to 'angel-makers,' used for similar purposes by poor families of earlier times (Fiedler, 1981:678).

Infants may be a stressful burden and, as a result, infanticide may rise out of postpartum psychosis or as a result of punishment delivered in anger, as described by Brandt Steele in "Violence within the Family" (1976):

Infanticide is much more commonly accomplished by mothers than fathers. In some instances the act may be closely related to emotional disturbances in the mother associated with pregnancy or a postpartum psychosis. In most illness, however, mothers kill babies for reasons not sex-linked but which are quite similar to fathers and which can be correlated with serious mental disease, cultural beliefs, or social stress. Children may die as a result of repeated or severe abuse, but in most cases death is an 'accidental,' unplanned result of punishment. The parents have a desire for a living child who will behave better. . . death is not intended.

In our Judeo-Christian culture, [there is a belief] that infants are easily spoiled, and may have an innate tendency
to be stubborn and willful, or even be born with 'original sin.' Accompanying this is the belief in physical punishment as the most appropriate means of counteracting such nefarious tendencies. Many abusive parents quote passages from the Bible to justify their punitive actions (Steele, 1976:3).

Also included among the immediate causes of maltreatment of children are prematurity, weakness, or illness. Sickly children are more of a burden. Compromising parental factors which figure in maltreatment are nervousness, illness, exhaustion, or marital difficulties. The adult is, for whatever reasons, unable to cope with that tiny life. Because of greater exposure to the infants "a mother is more likely to ill-treat children than a father. The father cannot love children so well as a mother, nor can he hate them to the same extent" (Engel, 1912:10). Abuse and neglect occur in varying degrees in families in which one or both parents are crushed beneath the burdens of life:

The overwhelmed parent is that person no longer capable of coping with a situation in which he finds himself. This parent is suffering neurotic reactions to the pressures of life. . . . [These] may be the manifestations of poor emotional development or be merely adjustment failures. . . . They no longer face themselves or their environment (Flammang, 1970:18).

Again, as with abuse, neglect "may be symptomatic of incompetence or family disorientation. It may also be the result of poverty, illness, or family crisis. . . . Much of the neglect. . . . results from the unconcerned parent. . . . the parent who does not respond to the need or demands of the child. . . . [and who] can leave their children unattended for long periods of time. . . . without worry (Flammang, 1970:14).

Now that we have explored various aspects of the description of and causal factors associated with abuse and neglect, we will look at
an opinion about the underlying purpose:

The essential functions of child abuse are in the area of adaptation to population-resource balance. The abuse child may die. If he lives he tends to make reduced claims on the available resources. If he grows up he becomes an adult less likely to reproduce. If he reproduces, he is likely to abuse his children in turn. . . . As child abuse served its harsh function in history, it had to stay hidden under the cloak of silence. The community, in its way, assented to the phenomenon simply because it could not afford to do otherwise (Bakan, 1975:25).

Bakan (1975) felt that the practice of abuse continues to exist because people do not want to get involved. "Child abuse thrives in the shadows of privacy and secrecy. It lives by inattention. Those who have protected themselves from being witness to it have at the same time protected the practice and have thus been a party to it" (Bakan, 1975:23).

A fresh and insightful addition to the study of child abuse was an article by Tiffany Field, "Child Abuse in Monkeys and Humans: A Comparative Perspective" (1983). This article incorporated theses by J. E. Korbin (1981) which were described by Field as follows:

Eastern groups have a more highly structured and consistent disciplinary system, a traditional institution. Child rearing is not an ambiguous sporadic practice. Everyone knows what is proper and what is not. . . . Where child rearing practices are not ritualized and in fact are in transition they are thus ambiguous and open for idiosyncratic abuse (Field, 1983:151).

Some parents may be reluctant to discipline their children, so punishment "comes erratically as does the control it produces, so punishment is stepped up in severity" (Field, 1983:151). The key seems to be consistency in discipline by parents:

Young (1964) has reported that almost all abusive families [91 to 100 percent] were inconsistent in disciplining their
Thus idiosyncratic abuse may occur more frequently among dyads in which the child is less socialized partly because of inconsistent discipline by parents who together live in cultures where child rearing practices are not ritualized, in fact are in transition, and thus ambiguous and idiosyncratic (Field, 1983:151).

It would be important to develop ways in which this information might be put to practical use, not only for the ambiguous cultures of the West but also for the rest of the world struggling with the pain of change:

Prevention of child abuse and neglect cannot be realized without simultaneously addressing, in some measure, more general social conditions affecting modern families. These conditions include poverty, unemployment, and poor health, and they also encompass a variety of new problems affecting contemporary families arising out of changed values and altered family forms. [Prevention in] child welfare must involve both a reasonable material environment and the elaboration of a system of services that responds to the new problems that changed family styles create for family life. These services which are commonly available in other advanced societies, include options for child care for working and single parents, educational and counseling services, as well as outreach programs that assist families in finding their way through the maze of public and private social programs (Antler, 1983: 276).

In 1975, the National Center on Child Abuse and Neglect gave figures of 1,600,000 for abuse and 2,000 to 4,000 child deaths per year as a result of abuse. By 1982, there were 2,000,000 cases of child abuse: three percent of the children in the United States (Rogers, 1983:1). Figures given for 1985 are 2,000 deaths out of a million reported cases. Actual numbers are suspected to be far greater (National Hotline for Child Abuse, 1985).

Some of the dramatic increase in the child abuse statistics is due to more cases actually being reported, but it is quite probable that the cultural diversity of the United States, with its myriad of child-
rearing techniques and punishment systems is a fertile ground for idiosyncratic abuse.

As shown by Korbin (1981) in Child Abuse and Neglect, the western cultures as a whole do not reflect the established, methodical, child-rearing practices that many Eastern cultures exhibit. Generally, the more rural, established traditions do not focus on individual corporal punishments. Instead, they tend to have ceremonies or rites of passage for children or adolescents which may appear cruel and abusive to Western observers. The difference being that generally everyone suffers equally, no child is singled out for the excessive punishment as with idiosyncratic abuse.

In an established order, every adult and every child knows what is acceptable behavior. Punishment for disobedience is general knowledge as well.

Deruralization, economic upheaval and other cultural disturbances forced on or accepted by a highly socialized group tend to bring new opinions, dissension, and confusion where once there was great stability. We can only hope that children of the Third World will not have to suffer the terrible abuse and exploitation that industrialization has brought to the children of more developed countries.

Russia

Bernice Madison, in an excellent accounting of "Russia's illegitimate Children Before and After the Revolution" (1963), has depicted the long struggle for recognition of these children (and also of other children of Europe). It seems that Russia has made more than one brave attempt to save her lost millions:
The number of illegitimate children born annually in the fifty provinces of European Russia ranged from a low of 107,154 in 1885 to a high of 117,799 in 1892, averaging 111,414 per year for these nine years and yielding a ratio of 268 illegitimate children per 10,000 births. Yet, in comparison with the ratios of other countries of Western Europe, the Russian ratio was low. For the period 1890-93, inclusive, when Russia's ratio was 203... ratios in these other countries ranged from 264 in Ireland to 1,438 in Austria. Serbia alone had a ratio lower than Russia's. As in other countries, relatively more illegitimate children were born in provinces with large cities, whose better welfare and medical facilities attracted women from outlying and rural districts.

In Tsarist Russia, unmarried mothers came from all social classes, but most of them were peasant girls, mainly those who came into the cities to work in the factories and as domestic servants. The serving girls became an easy prey of the male members of the families that employed them, or of transient visitors. 'Very little is thought of it and nothing else is expected of these servant girls from the villages. [After giving birth to "veritable swarms" of children the girls go back to work] and the same thing happens again the following year.'

In the factories young men and women peasants found themselves living in close proximity, in crowded and dismal barracks, and surrounded by wild amusements. Many illegitimate infants came of this situation. Compulsory military service led many young men to postpone marriages... illegitimate children have always been sired by soldiers and officers... they are either [thrown away] into the garbage hole, or into the water with a stone around their necks, or into the childrens' home... When it was advantageous for the landlord to have many serfs, it did not matter to him whether the 'souls' he owned were legitimate or illegitimate and many bastards were bred. The earliest provision for 'shameful' children in Russia dates back to 1706 when the famous Novgorod Metropolitan, Iov, converted the Kohmov monastery into an 'orphan nourisher,' thus imitating the work of Bishop Datheus in Milan begun in 787.

Impressed by Iov's work, Peter the Great decreed in 1712-20 that similar 'orphan nourishers' be opened at other monasteries; that each be run by a paid woman skilled in the care of children; that the costs be covered by government subsidies and private donations; and that unwed mothers deposit their infants in these asylums through specially built windows which shielded them from the gaze of the...
receiver, instead of sweeping [them] into unsuitable places. Peter's regulations demanded that mothers who killed their illegitimate offspring should be executed. Children were to remain in these asylums until the boys were ready to be apprenticed and the girls to be married or sent out as domestics. By 1724 there were 895 children in the 'orphan nourishers,' but many died in infancy because their nurses lived outside the asylum and could not give them uninterrupted care; soon live legitimate children were being substituted for dead illegitimate ones.

After Peter's death, his successors allowed most of the asylums to close. It was not until 1763, in the reign of Catherine the Great, that the plight of the 'shameful' children was again considered. At this time, various highly placed persons close to the court became aware of the existence of large numbers of these children, and were concerned because many were killed or left to die in gardens, woods, and swamps. In June 1763, Ivan Ivanovich Betsky, a celebrated public servant of his day, petitioned the Empress with a plan to combat these evils. He had made an exhaustive study of the manner in which illegitimate children were being cared for in Western Europe, and was especially influenced by the practice in Italy, the most active exponent among Catholic countries of homes for such children since the beginning of the fourteenth century. The Moscow home he proposed was to form the nucleus of the 'third estate,' a social class midway between the ruling group and the masses of people reduced to serfdom, which would enrich the arts, the sciences, and the professions.

On September 1, 1763, Catherine issued her famous manifesto, announcing her intention to open such a home and appealing for 'general donations'... her motto 'And thou too shalt live' [expressed her high aspirations]. A similar home was opened in St. Petersburg in 1771 and these two homes operated as a unit, which remained the major agency for illegitimate children—renamed by Catherine 'unfortunately born' children—for the next 153 years.

That Catherine intended them to handle the country's entire illegitimacy problem seems indicated by the fact that she did not include the care of foundlings among the duties of the Public Assistance Committees which she created in 1775 to administer welfare work in the provinces. Such care was not entrusted to these committees until 1810, only to be forbidden eighteen years later because of the frightening mortality in the homes. In 1852, at the peak of their activity, the committees had only 3,309 illegitimate children under care in all Russia. Nor was much attention paid to
'illegal' children by the rural self-governing bodies created by Alexander II in 1864 or by municipalities which were given a more democratic administration in 1870. This situation continued even after 1899 when admission to the homes founded by Catherine was limited to the Moscow and Petrograd provinces, rather than remaining open to illegitimate children from all provinces. According to Betsky's plan, the homes were to accept children from anyone at any time, day or night, and only one question was to be asked: Has the child been baptized and, if so, what is his name? For each child the deliverer was paid two rubles, this sum being attractive enough to induce people to make the trip. In Moscow, district intake sections were opened; in the provinces, announcements were made to encourage the opening of 'orphan nourishers,' from which children could be transferred to the capital in whole contingents.

In the homes, children were divided into five age groups, each housed on a separate floor: infants up to age two lived with their nurses. . . . As Betsky put it, the Empress wished 'that in these children there be beautiful mind and heart'. . . 'All the children and their issue [were] to be free for eternity.' Huge sums were necessary to carry out this grandiose scheme. By her own generosity, Catherine forced the nobility to be generous as well. Gifts also came from the merchants, bourgeois, and peasants, foreigners, [as well as] fines. One patron, the millionaire Demidov, gave many thousands of rubles. In spite of this auspicious beginning, Betsky's plan became a fiasco almost at once. In the first four years, 82 percent of the children admitted died (in 1767, mortality reached 98 percent). The situation in the outlying 'orphan nourishers' was equally disastrous. These macabre results stemmed from two major causes.

First was the insufficient number of nurses. In 1764, for example, there were 35 such nurses for 523 children. The homes' strenuous attempt to attract the needed number of nurses remained a discouraging failure. As late as 1901, there was only one nurse for five infants in spite of generous pay and all sorts of rewards and prizes. Artificial feeding had to be relied on. When the goat milk purchased for this purpose proved unsatisfactory, a dairy farm was established, but cow's milk proved equally deadly. The formulas, made in mass quantities, were not adapted to individual needs and because of unsanitary conditions surrounding their preparation were germ carriers par excellence. The homes never achieved success with artificial feeding, although some improvement occurred in the twentieth century.
The second major killer was the terrible overcrowding. Built for 500 infants, the Moscow home customarily housed 1,200 to 1,400. The flood of babies pouring in from all sides persisted unabated until almost the end of the nineteenth century. There came into being the special occupation of 'foundling deliverers'--women in distant provinces who extorted several rubles each from unwed mothers in return for promising to take their children to the home. These 'foundling deliverers' waited till they had gathered a large batch of babies--basketfuls of them--then brought those who were alive to the homes, getting rid of the dead ones on the way. When unwrapped, many of the infants could hardly breathe, having been smothered by their own excrement for days, and they were often in the last stages of starvation. Overcrowding led to infection and the rapid spread of disease.

The fearful mortality forced Betsky to abandon his original idea of raising all the children in the homes--under his carefully worked out system--and to foster care in rural homes with nursing mothers. At first, placement was for nine months only, but under pressure of unrelenting overcrowding, the time was periodically lengthened until in 1797, it was decided to raise only 500 children at one time in the homes; the rest were to remain in foster homes until their majority.

The foster care program proved equally fatal. During its first thirty-two years, three quarters of the children died, and another twelve percent were stolen and made serfs by local landlords. Usually, it was the poorest peasant households that were willing to take in children for the three rubles; foster mothers gave little mothering to the 'strangers.' This made more dangerous the wretched environment in which these babies found themselves. 'Who has not seen the peasant hut, bursting with men, women, and children of all ages, sleeping on the floor; who has not smelled the traditional cradle tied to the grandmother's foot; who has not become indignant to the sight of the filth-encrusted pacifier stuck into the mouth of the unhappy infant?'

The lack of medical care and extreme poverty, filth, ignorance and superstition in most of these households were not remedied by the 'traveling supervisors' whom the home eventually employed to keep an eye on the children. The first such supervisors were petty civil servants, themselves ignorant, venal, and indifferent, who were forced to take on this work to keep their regular jobs. Later, 'medical assistants' were used, but there were never enough of them to make frequent visits. They eliminated the worst abuses.
and cruelties, but could not alter the situation in a fundamental manner. The death rate in infancy was twice as great among the 'strangers' as among the 'own' children. Even those lucky enough to be educated in the government homes did not grow into physically strong children, full of life and fun, as Betsky had planned. Catherine found them 'awkward, slow, silent and morose!'

With time, instead of gaining 'the goodwill and praise of society,' the homes and their foster care programs fell into disrepute. It can be estimated with considerably certainty that in 153 years of existence, approximately 1,500,000 children were admitted into the homes. Of these, more than 76 percent died before reaching majority, usually in the first and second years of life. This record was indeed a far cry from the motto proclaimed by Catherine: 'And thou too shalt live,' and justified the derisive label 'angel factories' given to the homes by the populace. How many of the children who survived entered the 'third estate' is not known, but the number was probably relatively small, perhaps about 25,000. The rest became peasants.

A radical change of the legal status of illegitimate children occurred immediately after the November Revolution. The law of December 18, 1917, abolished the concept of illegitimacy, erasing all distinctions between legitimate and illegitimate and proclaiming that blood and not marriage determined who was responsible to support and rear the child.

The unmarried mother was given the right to present to the Department of Registering Acts of Civil Status in her place of residence a declaration showing the time of conception, and the name and the place of residence of the putative father. Such action had to be taken not later than three months before delivery so that the matter might be settled before the birth of the child. . . . The law of July 8, 1944, . . . abolished the unmarried mother's right to appeal to the court for the purpose of establishing paternity and to obtain support. No longer could the father's surname be given to an illegitimate child. . . . No longer could her child inherit on equal terms with the children of a registered marriage.

Thus, while the concept of illegitimacy had not been reintroduced in so many words, the policy of equal treatment of legitimate and illegitimate children had been reversed. . . . The 1944 edict was apparently aimed at strengthening the recorded marriage and producing a strong and lawful family unit. In contrast to the early post-revolutionary policy
which sought to do away with the family and transfer the child-rearing function to society, the Soviets were re-establishing the family as the nurturer of individual and societal growth and health—a process they started in the mid-1930s.

Until 1936, abortions were permitted by law, provided they were performed in a state hospital by an approved physician. The 1936 decree forbade abortions unless there was a peril to the life or health of the woman or danger of transmission of serious sickness. [Abortions were again permitted in 1955]. . . . To avoid the long abortion waiting lists at hospitals, the lengthy investigations and the possibility of refusal, some women continue to have abortions outside the state medical facilities.

In 1959, there were 18,000,000 more women than men in the Soviet Union. . . . Many [women] want a child to fill, at least partially, the gap in their personal lives resulting from the loss of men in World War II. . . . If the unwed mother does not take away somebody else's husband, if she is not promiscuous, if she is doing a good job of raising her child, and if she is a norm-fulfilling worker, she is accepted and even praised.

It is claimed by Soviet authorities that the number of illegitimate children destroyed or abandoned by their mothers has been steadily diminishing, dwindling in the past ten to fifteen years to isolated and unusual phenomena. . . . As late as 1932 health and welfare personnel were still preoccupied with the struggle against the abandonment of infants. AT that time in some provinces so many babies were 'thrown out on the street' that institutions for them were continuously overcrowded.

Since the Soviet policy is to make available to illegitimate children and their mothers the same kinds of facilities, services, and benefits as to legitimate children and their parents, it may be assumed that children of unwed mothers have benefited from the drop in infant mortality for all children from 184 deaths under one year of age per 1,000 births in 1940 to 60 in 1955 and 41 in 1958.

The number of 'upbringers' in homes seems large enough to assure some individual attention for each child, and the upbringers are especially trained for their work (Madison, 1963:82-94).

Madison's description was unusually complete and concise. In this detailed history of illegitimate children in Russia, we might read a
parallel history for much of the rest of the European continent. There is another country, however, in which state policy has been circumvented or ignored about as long as it has been in existence. This is China.

Ancient China's history is filled with accounts of infanticide, usually in the form of the drowning of baby girls, which took place for reasons of poverty as well as to satisfy social demands. This ancient practice continued long after its discouragement by various Chinese governments, including the current one:

A newspaper in Canton Province reported the deaths of more than 200 female infants [in the] autumn of 1982, most of them drowned by midwives in a pail of water at the mother's bedside. Recently, 'The Peoples Daily' published a letter from fifteen women in Anwei Province who claimed that they had been beaten by their parents, their in-laws or their husbands after giving birth to girls. Nonetheless, the women wrote, 'we will never give up trying to have a boy. We would rather die than be content with a girl.'

Chinese women's group... are outraged by the killing of infant girls. The Anwei Women's Federation has compiled chilling statistics. In one village alone, forty girls were drowned in 1980 and 1981. In another, of five girls born over a three month period, none survived. The Federation compared births for 1979, before the measure, and 1981 (Mirsky, 1983:13).

The ratio in 1979 was 51.6 percent boys and 48.4 percent girls. In 1981, the percent was 58.2 percent males and 41.8 percent females. So, in 1981 when there should have been 5,211 girls by 1979 ratio estimates, there were only 4,402 in Anwei:

The penalties for killing an infant in China are light, and it is really an easy matter. There are many home births and both midwives and husbands are likely to be cooperative. Babies need not be registered... until three days after
birth; if they die before that time, they are presumed to be stillborn. Compliant officials, eager to show low birthrates in their jurisdictions, look the other way.

In the unlikely case that the government is able to bring female infanticide under control, it would be faced with a rise in birthrate. . . . [Parents] are desperate for boys, and will continue to try having them. Thus, female infanticide is an effective form of birth control. The incidence of forced abortion shows that the government's program of family planning, education and financial incentives is not working as well as it would like. Two years ago, newspapers in Guangdong Province reported that 50,000 women who were pregnant without permission had been kidnapped on party orders and forced to have abortions. . . . [This] practice is becoming routine throughout China. Even women in their third trimester . . . are not exempt. Even if few believe the government condones female infanticide, the drive to limit families makes it inevitable (Mirsky, 1983:13-14).

As a matter of international policy, a spokesman of the State Family Planning Commission has condemned female infanticides as "an intolerable crime punishable by law." . . . Commenting on such stories about female infanticide appearing in the Chinese press, the spokesman said such cases, although few in number, do exist in certain localities and call for serious attention. . . . Children are protected by the State . . . [and] maltreatment is prohibited (Beijing Review in "Events and Trends," 1983:9).

A conclusion which may be drawn in closing this section is that infanticide was a widespread practice in our past and is still with us both directly and indirectly today despite numerous prohibitive measures. We have seen that there is really no one cause or reason. Infanticide performs various functions of population and social control and, therefore, will be difficult to eradicate by means of punishment or insufficient incentives.
CHAPTER TWO
METHODOLOGY

Once the causal factors for human infanticide became the primary focus of investigation, a survey was made of relevant literature.

The available H.R.A.F. data were consulted. Maps were constructed in the hope of presenting the H.R.A.F. materials in a relatively accessible format. Since there was a vast amount of information encompassed, the maps have been placed in an appendix at the end of this paper for further reference. The primary purpose of these maps is to log groups which were recorded as having practiced for ritual or social reasons and groups practicing abortion and infanticide out of desperation in the face of economic hardship. Groups who vehemently denied such practices are also noted.

Another survey of the leading theorists on the subjects of child abuse, neglect, abortion, abandonment and passive and active infanticide as conducted in the hope of finding the most prominent view or views on the causal factors involved in these practices. The findings fit loosely into three categories: 1) economic hardship, extreme poverty; 2) combined economic and social reasons; and lastly, 3) the feeling though often weakly supported, that there was a social basis for most cases of infanticide—the world over.

As it turned out, this researcher attempted to take the social orientation a bit further with substantiation from the relevant literature.

A decision was made to look at infanticide from several angles—historical, regional and across various cultures—in order to determine
if infanticide was the result of (or for prevention of) severe deprivation of such basic necessities as food, firewood or water, as postulated by several theorists (some of whom are quoted in Chapter Three) or if perhaps the primary causal factors were culturally oriented.

Illegitimacy, with its associated rejection and burden of shame along with terrible emotional and financial drain, was by far the leading factor for infanticide as described in Chapter One. Another recurrent theme was religious appeasement and sacrificial offering—as seen in the poem "John Barleycorn" and the concept of Ge-Hinnom—or burial of children in foundations.

A third major grouping encompassed socially accepted excuses for destroying a fetus or child, thereby limiting the family relevant to the parents' needs or convenience. For example, a family already too large, two infants at the breast, boys born on Wednesday, cryptorchids, parents are too young to start a family, a child is a threat to feminine beauty, etcetera. These social contrivences served to ease familial and social guilt relative to the death. They are rationalizations. These and other culturally determined reasons far outweigh the acts of desperate parents to alleviate or prevent starvation within the family.
A number of researchers and theorists have posited explanations or causality for the existence of infanticide in human groups. Several of these ideas are presented here, ranging from the density-resource equilibrium models, through the combination explanations incorporating both ecological and social factors, to the themes of social incentives or imperatives.

In general, earlier explanations came from authors of demographic equilibrium models. In his famous book, "The Origin of Species and the Descent of Man" (1859), Charles Darwin criticized one current theory on possible reasons for population control:

[Malthus] has discussed these several [demographic] checks, but he does not lay stress enough on what is probably the most important of all, namely infanticide. . . and the habit of procuring abortion. These practices now prevail in many quarters of the world; and infanticide seems formerly to have prevailed. . . on a still more extensive scale. These practices appear to have originated in savages recognizing the difficulty, or rather the impossibility, of supporting all of the infants that are born (Darwin, 1859; form Modern Library Edition, 1936:429). (Author's note: even though the point made here is that it is difficult or even impossible to raise all children, one might quibble at the use of the terms "habit" and "practice.")

The following sections will begin with several examples from authors who felt that infanticide was the result of economic necessity and therefore was in the best interests of those who practiced it.

Wynne-Edwards

In 1962, V. C. Wynne-Edwards spoke of balancing population density and available resources. He looked to the factors that hold back the
latent power of increase so that critical resources are not overexploited. This thesis requires that populations are at equilibrium, which may be somewhat optimistic in most cases. Even in habitats undisturbed by human interference, there is really only a temporary stasis. Ecosystems are changing continually due to climatic and other external factors as a matter of course (see Douglas, 1966:263).

Wynne-Edwards suggested density-dependent internal brakes (social or cultural) which impose a ceiling on natural increase and establish population homeostasis (paralleling physiological homeostatic controls). This ceiling must not be imposed by starvation, predators, or natural hazards but rather by behavioral aspects. For instance, there might be a hierarchy that keeps population at an acceptable level by excluding certain individuals from procreation or even from obtaining sufficient food or shelter. The higher species, most especially human groups, exhibit more complex adaptive mechanisms for population homeostasis. Humans might use a variety of internal brakes including infanticide, abortion, and marital and sexual restrictions.

The work of Wynne-Edwards was an extension of that done by Carr-Saunders in *The Population Problem* (1922) as well as being influenced by other researchers or animal ecology and hormonal stress reactions. Fine examples of such research are found in Calhoun (1952), Thompson and Sontag (1956), Warkany (1942; 1946), Sontag (1941), Errington (1943), Cannon (1932), Chitty (1961), and Selye (1956). Wynne-Edward's contributions were important to the work done later by Douglas (1966), Katz (1972), Boserup (1972), and many others.
Rassmussen

A classic example of an ethnographer who explained human infanticide in terms of economic determinism was Knud Rassmussen (1931). He was preceded by Boaz (1920) and Jenness (1922) and was followed in turn by a number of students and observers of the Netsilik and other Eskimo groups. For the most part, these researchers felt that the need for balancing population with critical resources was the overriding factor leading to infanticide in the North.

Although he described the land of the Netsilik (Pelly Bay Eskimos) as being rich in game, Rassmussen explained that "... the people's lives were rife with hardship. There is scarcely any country on earth so severe and inclement for man" (Rassmussen, 1931:139).

Female infanticide was practiced to a high degree, presumably due to a paucity of food, or burden during forced marches. The lack of available females caused much social upset because of the heavy competition for wives. Frequently, fighting and even killing erupted as a result. This presumably helped to even the adult sex ratio (along with hunting accidents and immigrant brides).

Boaz

On an even more intense level, Franz Boaz (1920, 1964) suggested that infanticide was a direct result of privation, since infants born in times of stress were immediately killed to ensure the survival of the rest of the group. The salient point is that the sex of the infant, under these circumstances, is of no consequence. Lack of food or firewood, illness and forced moves allowed no sexual bias. "It was
the immediate solution to the problem of survival, and as such can be considered adaptive behavior on the part of the group, [thus freeing] the mother and themselves from the demands of a newborn infant" (Boaz, 1964:19). It might be pointed out that, in cases of such critical necessity, the society demands the death of the newborn rather than it being solely a parental responsibility.

Boaz' picture was probably an extreme in the continuum of reasons for killing infants. Such killings, truly for the purpose of group survival, are apparently very rare, from what this researcher has read, at least as the sole cause. It may be referred to as one in a series of causes, or as a secondary rationale for the act.

In the examples above, infanticide is described as a regulatory device in population-resource management. However, in the face of recurring tragedy and hardship, one might ask why no other cultural compensation had been devised, such as better food procurement and storage systems, alternative food sources such as trading, or even a move to the coast or joining with another and more prosperous group. Because these groups are generally composed of few individuals, and other areas (particularly coastal regions) might have a more plentiful food supply, why could not these alternative solutions be preferred to the overwhelming infanticide ratio that has been proposed by many researchers.

Perhaps the answer is that infanticide would be practiced by these people in any case, even if they lived in a very fruitful environment. I suggest that, along with ecological reasons, there are other causes.
This, in some measure--be it small or large, is the feeling of the next group of writers.

**Denham**

Woodrow W. Denham's (1974) hypothesis was basically that infanticide was atypical of the Pleistocene or recent hunter-gatherers. He felt that its importance in demography, then as now, has most likely been overestimated. "I argue that the importance of infanticide as a method of spacing infants among Pleistocene populations probably has been overestimated and that there are several good reasons to doubt that it has ever been common on a world-wide, species-wide basis" (Denham, 1974:191). His perspective was largely a reaction to the work of J. B. Birdsell (1968):

Birdsell (1968) argues that aboriginal Australians and Eskimos had achieved a balance with their food supplies prior to European contact, and that to maintain the balance they practiced preferential female infanticide which suppressed further population growth. Likewise, Pleistocene hunter-gathers had reached a balance with their resources and there is no reason to believe that a Pleistocene woman could handle more than one infant at a time either. . . . Systematic infanticide has been a necessary procedure for spacing human children, presumably beginning after man's entry into the niche of bipedalism, and lasting until the development of advanced agriculture. It involved between 15 and 50 percent of the total number of births. Among recent hunters it tends to be preferentially female in character and probably was in the Plesitocene (Denham, 1974:192).

Denham offered further criticism from several angles:

Although infanticide may be practiced for non-utilitarian reasons and for sound medical reasons, it is not clear that such cases show a strong preference for one sex nor that they occur often enough to have a major impact on population size or structure. Most infanticide seems to be justified by one or both of two economic arguments: too little food
to support a larger population, and the inability of mothers to transport more than one infant at a time without being overburdened. . . . Chronic food shortages, acute food shortages and difficulties related to infant transport are three separate problems that call for three different solutions. Hunter-gatherers who are faced with chronic food shortages would do well to practice preferential female infanticide, since the removal of females form a population has a long-term depressant effect on population growth. Acute short-term food shortages more appropriately call for preferential male infanticide. Emergency removal of a few male infants from a population is an effective response to such a crisis, and it does not have any of the long-term effects of female infanticide. Infanticide deriving from problems of infant transport may reasonably be expected to show no sex preference, for the decision to kill an infant would be based on birth spacing and birth order rather than on sex. If a sex preference were present, it should be based on any of several factors independent of transport itself (Denham, 1974:191-192).

Denham's last premise was very well thought out, although I am not convinced that many infanticide-practicing groups give thought to sex preference in anticipation of acute and chronic food shortages, as he described above. A critical flaw, as Denham (1974) saw it, was that the proposal of Birdsell (1968) and others concerning a harmoniously balanced econiche is not practical due to a high infant mortality rate and the sensitivity of small groups to:

random variations in birth timing and the live birth sex ratio, to epidemics, accidents, and natural disasters. . . . and to local deficiencies in food supplies. . . . It is likely that most of the small-scale semi-isolated reproductive populations (e.g., bands) which comprised the total population spent most of their time in conditions of population growth. Periodically, the size of each group would be reduced sharply by some external factor and a cycle of prolonged growth and rapid decline would be repeated. Under these conditions, infanticide would not be necessary for maintaining overall population stasis even in the face of characteristically moderate to high growth rates for most bands most of the time (Denham, 1974:193).

Denham took a stance on two further points to counter Birdsell's conclusions about plentiful Pleistocene infanticide rates. First, as
for infanticide made necessary because the mother is unable to carry more than one infant, Denham 1974) pointed out an obvious fact: for every lactating mother there are fathers, relatives, and possibly older siblings, to aid in this task.

Under these conditions, approximately 17 percent of the population are carried by about 29 percent of the population. This is a mean of 1.7 carriers per infant even if males never carry children at all. . . . The importance of siblings and other relatives as carriers of infants has been seriously underestimated by those who see infanticide as a necessary solution to problems related to infant transport (Denham, 1974:194).

Denham's final question was about the origin of this practice which is presumed to be so widespread in the Plesitocene. He reported that systematic infanticide is simply not reported in the literature on nonhuman primates (excluding the unusual case of the langurs, among whom a new dominant male will kill all infants sired by the previous dominant male). Multiple carriers for nonhuman primate infants seem to support Denham's (1974) human transport thesis as well. He concluded:

Giving due consideration to both the supporting and the opposing arguments, it seems probable that infanticide was no more common among most Pleistocene populations most of the time than it is among most present-day human and nonhuman primate populations. From this perspective, the practice of systematic preferential infanticide among Eskimo and Australian aboriginal populations appears to be exceptional rather than typical or hominid behavior (Denham, 1974:197).

Freeman

In his article, "A Social and Ecological Analysis of Systematic Female Infanticide among the Netsilik Eskimo," Milton R. Freeman (1971) argued that preferential infanticide is adaptive to the Netsilik, not because of demographic reasons but because it resolves tension in male-
dominant households. Any population limitation is a secondary result rather than a cause:

Studies of Eskimo infanticide have generally concluded that the practice was a means of regulating population size, a necessity resulting from the extreme pressures of a hostile environment. Hobel (1947, 1954) interprets infanticide as result from the dictum that unproductive members of society cannot be supported, and by Balikci (1967) who concludes that female infanticide is a means of maintaining numerical balance between the sexes in a society where occupational hazards to males rank high. All these studies tend to invoke environmental pressures and indeed there can be little doubt that the constraints on population growth exerted by the Arctic environment can at times be severe (Freeman, 1971:1011).

"The threat," said Freeman (1971), "is not so much to population survival (for individuals comprising a population have evolved various behavioral and physiological adaptations), but to the continuing persistence of the ecosystem as a whole, which in the Arctic is at a low level of adaptation on account of its immaturity: (Freeman, 1971:1012). He next questions the popular idea that a high rate of infanticide would cause group extinction:

The high incidence of female infanticide among the Pelly Bay Netsilik [possibly as high as 80% of female births at times] led Rasmussen (1931) to conclude that it would result in extinction of the local group. However, I suggest that infanticide would not result in progressive diminution in group size, for each adult couple only need raise to reproductive age one [of each sex] to ensure a stable population (Freeman, 1971:1013).

The rearing of 1.5 offspring would allow for a 33 percent accidental adult loss rate. Freeman then suggested that a controlled awareness of, and a plan of action (such as infanticide) for, dealing with food shortages seems rather farfetched:

Earlier ethnographers' insistence that systematic female infanticide represents purposive behavior by the Pelly Bay Eskimos directed toward control of their population size,
with the object of achieving an optimal or rational resource strategy, due to extenuating circumstances. 'But the Netsilik do not usually rationalize along these lines; they have just accepted the practice of infanticide as a custom' (Steenhoven, 1962:50). . . . This is an important conclusion. Once we accept infanticide as customary behavior, we no longer have to postulate a theory of the day to day justification of the act. The supposed necessity to do just that has, I believe, been the incubus of earlier writers, and has led to certain inconsistencies and errors in reasoning and interpretation (Freeman, 1971:1014).

Bravo! Freeman now goes on to explain the purpose of infanticide among the Netsilik:

There is a need for explicit male dominance. Female assertiveness is a potential threat to such dominance. A father hopes for a son and is badly disappointed by the birth of a daughter who will not help him in his work. . . . The mother too may wish for a son; however, she can expect both help, companionship and pleasure from her daughter. . . . The father, however, receives no such compensation in his disappointment. Indeed he may even feel threatened in his position of dominance within the household dyad. . . . Some wives regretted having to kill their newborn. . . . Velde (1954:8) describes an incident of female infanticide that occurred in 1918, '[the mother] would have liked to bring up the baby, but she was too fearful of her husband. . . . [she added], . . . "Just the same I loved the little one. . . . there was nothing else to do, because in those days we were afraid of our husbands"' (Freeman, 1971:1015).

Freeman continued:

A recent review of population control practices among several traditional societies concluded that restrictive policies generally result from considerations of prestige, rather than mere subsistence (Douglas, 1966:169). The Pelly Bay Eskimos, however, were judged by Douglas to be a notable exception to this general rule on the basis of Balikci (1967). The explanation advanced here is that the cause of female infanticide is indeed concerned with social advantage, in this case assertion of male dominance within the household. . . . It is indeed doubtful whether the Pelly Bay Eskimos are aware of such ecologic (biologic) implications of their practice of infanticide. . . . However, because the implications are adaptive, the trait itself is all the more likely to persist.

The earlier explanations of Pelly Bay infanticide all posit Eskimo awareness of an alleged adaptive implication of the
trait, namely control of population numbers. I have suggested that this implication itself is erroneous. Instead, I have argued that female infanticide is adaptive ecologically because of a concommitant increase in population stability, and is so whether or not the Eskimos themselves realize as much. The purposive explanation of systematic female infanticide, on the other hand, I believe is to be found in the evaluation of adult sex roles within the culture (Freeman, 1971:1016-1017).

And so another link in the chain of reasons is sealed.

Balikci

Asden Balikci (1968) sensed that, in addition to overall population control, female infanticide evens the sex ratio of adults since many men are killed in hunting accidents, suicides over bachelorhood, drownings, and (presumably) fights over women. The firstborn might be saved, even if a girl, so as not to tempt the bad luck of barrenness. Usually, however, raising more than one daughter was a rare occurrence:

A man needed sons to hunt and fish for him when he was past his prime, but... a girl would only benefit her future husband. A girl would not be killed if a future husband would betroth her, or if her grandmother were willing to adopt her as security for old age. So the supply of girls was not simply related to the pressures felt by their own parents (Balikci, 1968:623).

Young men who could not find a mate in their own group might choose a bride from a neighboring group which did not practice infanticide to the same degree as the Netsilik.

Balikci's (1968) main point was that, "Although the disparity of the sexes was very marked in infancy, the balance was nearly even for the adult population" due to a high male death rate, which Balikci felt was adaptive because it kept a limit on overall population growth. "Thus," Balikci argued, "this group driven to the edge of survival by
harsh conditions, in practicing infanticide was contributing to its own survival and making a more or less successful attempt to control the balance of the sexes" (Balikci, 1968:625).

The problem with Balikci's premise is that, like other possible cultural solutions such as emigration or fissioning, females reared to adulthood who might draw in husbands as friends and allies could have a positive influence and also even out adult numbers. It might also moderate adult male suicides and fighting, so Balikci's policy alone does not adequately suit the evidence, unless it is true that the Netsilik have a compelling need to express violence.

Schrire and Steiger

Carmel Schrire and Lee Steiger (1974) questioned the extent of the practice of infanticide, as well as the premise that infanticide was a direct result of privations:

The rationale behind this practice was essentially one of economics. Although Eskimos were said to appreciate the role of women in their society, they regarded girls as unproductive consumers who did no hunting and left their homes as soon as they became useful in other ways. Since babies had to be breast fed for several years, females were often killed in order to save time between successive births and in the hope of producing a male next time. On top of this, male hunters were subjected to greater risks. . . . Two or even three sons did not automatically ensure the food supply of a family in the years ahead. People desired many sons, and were said to practice female infanticide in a systematic manner in response to immediate stress, with an eye to the future, in the recognition and anticipation of the needs to come (Schrire and Steiger, 1974:161-162).

Schrire and Steiger detailed several inconsistencies which led them to believe that infanticide was less than systematic, and they did not accept the figures of 15 to 50 percent of live births suggested by...
Birdsell (1968) or the 80 percent mentioned by Rasmussen (1931). "In our study, we find only one report that might be classified as 'direct' evidence. Diamond Jenness (1922) recorded the birth of a girl on January 22, 1915, in the vicinity of his station (among the Copper Eskimos) where a child was suffocated and laid out" (Schrire and Steiger, 1974:166). Schrire and Steiger also "found that Rasmussen cited his figures incorrectly. . . . There were 116 live births, not 96. . . . This would possibly change the percentage of infanticide from 80 to 67 percent (Schrire and Steiger, 1974:164-166).

Schrire and Steiger felt that, since females tend to be married at an early age, there is an added gap in the cohort of young children, while making the adult sex ratio appear to even out (Schrire and Steiger, 1974:168). This last statement seems to be an exaggeration, but it may have some valid influence.

Schrire and Steiger propose that systematic infanticide of even a small percentage (8 percent or even less) would bring a group to extinction. They gathered this information from their "computer simulation" model:

Women bear children and the future of society is inevitably invested in this potential. Severe culling of the female ranks in infancy, especially in small, endogamous groups, will surely jeopardize the future of the whole group. . . . It turns out that systematic female infanticide of any appreciable degree reduces total size inexorably to zero. . . . [It] could not have been practiced systematically in real groups destined for survival. . . . In terms of constituting a meaningful cultural practice, . . . female infanticide as a possible mechanism for controlling population size. . . . is virtually negligible (Schrire and Steiger, 1974:170-175).

The conclusion to which Schrire and Steiger arrived is that "hunter-gatherers such as the Eskimo groups we have reviewed could only
tolerate a small degree of infanticide and must therefore have practiced it sporadically, in response to short-lived crisis and periods of stress (Schrire and Steiger, 1974:179). The model was flawed, as pointed out by Cheryl Acker and Patricia Townsend (1976:469-470). Even if it was not, it contained the same hamartia as the Malthusian Doctrine; it is a mathematical fantasy, useful only to show what probably would not happen.

Schrire and Steiger (1975) responded to Acker and Townsend (1976) with a strong point about observation:

Neither Rassmussen nor any of Birdsell's sources ever observed the practice of infanticide as a constant feature from which a rate of practice might be inferred. For that matter, they never even witnessed a single case of female infanticide. Our data and theirs are all derived from hearsay or inferred from population figures, and it is crucial that this fact be fully appreciated in order to grasp the difficulties implicit in analyzing the practice of female infanticide in the Arctic (Schrire and Steiger, 1975:472).

This is something that any of us who write about systematic infanticides should keep in mind.

Divale and Harris

In a similar vein to Balikci's balancing of sex ratios in adulthood, we find William Divale and Marvin Harris (1976) explaining female infanticide as a way to produce more male warriors, who in turn get killed; thus the sex ratio again moves toward a balance, while at the same time limiting population growth. "We explain the perpetuation of warfare in band and village society and its interaction with selective female infanticide as a response to the need to regulate population growth in the absence of effective or less costly alternatives" (Divale and Harris, 1976:521).
Since "women probably produce more calories per capita in most band and village societies: (Divale and Harris, 1976:527), coupled with the fact that polygyny is more common than polyandry, it is necessary to find an adaptive reason powerful enough to override the positive aspects of having a large number of females in a group. Divale and Harris concluded: "We suggest that a premium survival advantage is conferred upon the group that rears the largest number of fierce and aggressive warriors" (Divale and Harris, 1976:526).

[The] widespread cultural preference [that] exists for male children among pre-industrial societies... is often explicit and sometimes embodied in a rule that the firstborn must be a male [with the result that]... demographic analysis of 160 band and village populations, censused prior to modern contact and while they still practiced warfare, shows an average sex ratio of humans at birth is 105.5 males per 100 females. The only way in which sex ratios as high as 128 can be achieved is through postpartum selection.

Nevertheless, preferential overt female infanticide must be reckoned as only the tip of the iceberg. Many cultures with markedly skewed junior age-sex ratios deny that they practice any infanticide at all. Hence it can be inferred that the sexual imbalance in favor of males is achieved as much through covert infanticide, including clandestine aggression and various forms of malign and/or benign neglect that adversely affect the survivability of female infants (Divale and Harris, 1976:525).

Warfare itself was seen as a distinctively human system of population control. Selective female infanticide is used to compensate for a potential male sex ratio imbalance from war deaths in preference to bachelorhood, polygyny, or other cultural options:

Extremely low rates of population growth have been characteristic of most human history... probably no more than .00015 percent per annum for most of the Paleolithic and about .036 for most of the Neolithic (figures from Hassan, 1973, and others) (Divale and Harris, 1976:530).

Abortion was widely practiced but it affected the sex ratio only by shortening the life expectancy of adult women.
While preferential female infanticide and preferential benign and malign neglect of female infants seems cruel and wasteful, it had two conspicuous advantages over abortion among band and village societies: (1) male fetuses could be brought to term and selectively reared to adulthood; (2) the death of babies was less costly in an emotional, structural, and economic sense than the death of mothers (Divale and Harris, 1976:530-531).

A sudden change to a starchier diet (as in root crop cultivation) "should produce a spurt of population growth followed by an increase in female infanticide and the intensification of warfare (Divale and Harris, 1976:532). For example:

The Yanomamo of Amazonia may be the classic case. . . . female infanticide produced junior-age sex ratios of 148:100 for 11 Yanomamo villages in the intensive [internal] warfare zone and an intense male-supremacist-warfare complex developed. But in 12 Yanomamo villages that were peripherally located junior-sex ratios were only 118:100 and warfare was less intense [so presumably was caloric intake] (Divale and Harris, 1976:532).

Divale and Harris concluded that "warfare perpetuated and propagated itself because it was an effective method for sustaining the material and ideological restrictions on the rearing of female infants" (Divale and Harris, 1976:531). This philosophy might be effective only for a small number of cases for a limited time under a specific set of transitional circumstances--if at all, one would think.

Neel

James V. Neel (1970) gave a broader picture of selective child-rearing practices utilized by a fair number of culture groups on South America, including the Yanomamo:

Most primitive populations practiced spacing of children. Our data on how this spacing was accomplished are best for the Yanomamo, where intercourse taboos, abortion and infanticide reduce the average effective live birth rate to
approximately one child every 4 to 5 years during the child-bearing period. The infanticide is directed primarily at infants whose elder sibling is not thought ready for weaning, which usually occurs at about 3 years of age. Deformed infants and those thought to result from extramarital relationships also are especially liable to infanticide. Female infants are killed more often than male infants, which results in a sex ratio of 128 during the age interval 0-14 years. An accurate estimate of the frequency of infanticide still eludes us, but, from the sex ratio imbalance plus other fragmentary information, we calculate that it involves perhaps 15 to 20 percent of all live births.

It separates man from prehominids. . . . In contrast to man, it appears that most higher primates must utilize their natural fecundity rather fully to maintain population numbers. . . . [It is] perhaps the most significant of the many milestones in the transition from higher primates to man--on a par with speech and toolmaking--[occurring] when human social organization and parental care permitted the survival of a higher proportion of infants than the culture and economy could absorb in each generation. . . . Population control, including abortion and infanticide, was therefore adopted as the only practical resource available (Neel, 1970:816).

This sounds reminiscent of Darwin (1859).

Batten

"Until recently, the story of infanticide has lain buried in historical records, ignored by anthropologists and biologists who have long dismissed it as an aberration, a pathological, desperate response to extreme stress," said Mary Batten (1983:38).

It may well have been an adaptive reproductive strategy that developed far back into the evolutionary history of many species. . . . Sociobiology . . . posits that all social behavior is genetically based, a behavior evolved because it enhances the reproductive success, or fitness, or individual animals, even at the expense of the species. As repellent and costly as it seems, infanticide could not have evolved if it did not benefit somebody (Batten, 1983:38).

Batten (1983) based her thoughts, to a large degree, on the work of Sarah Blaffer Hrdy (1974), who studied infanticide in Indian
langurs, after the initial report of such infanticide by Yakimaru Sugiyama (prior to 1971, although no specific date is given). Hrdy claimed that reproductive fitness is increased by infanticide, for the killer. The "killer" here is the new dominant male in the harem of langur females, who kills all of the newborn offspring of the preceding male. This seems puzzling: Why should he care? If anything, this would lead to tougher competition in the future—and a likely Waterloo (Batten, 1983:38). Hrdy felt that infanticide was a reproductive strategy which females could not afford to boycott, since "the genes of such a male would be a decided advantage of her male offspring" (Batten, 1983:108). However, it seems unlikely that the females cherish genes more than infants.

Batten quoted Hrdy, "Among Australian aborigines, by whom infanticide was at one time practiced, women who killed their infants sometimes ate them. The only other known case of human cannibalism of infants occurs among Eskimos during famine" (Batten, 1983:108). Quoting Dickemann (1981), Batten added, "Eskimos had a very clear, logical understanding; when a group was really starving, they always killed the children first because they wanted to save the reproductive pairs" (Batten, 1983:108). One might speculate that there was also a severe shortage of adult volunteers, and grownups were bigger. I think that the conscious thought of saving reproductive pairs is absurd.

Dickemann (1981) saw the female infanticide as resulting from a higher mortality of males at all ages, or as a consequence of a higher value placed by society on traditional male roles.
"Throughout known history, human beings have regulated fertility by infanticide," said Batten (1983:108). "According to Dickemann, the deed serves a variety of functions: birth spacing, elimination of defectives, sex-ratio manipulation, sibling competition, male-male competition, female-female competition, and religious sacrifice to avoid calamity" (Batten, 1983:108). (Notably lacking in this last, as in all of these accounts, is the primary theme of illegitimacy.)

An important theme in population policy, as Batten (and others) see it, is the issue of infanticide and child neglect versus abortion in international family planning. Twenty years ago, by means of abortion, Japan brought infanticide and its overpopulation problem under control. However:

In developed countries in which safe abortions are not made available and where infanticide is officially condemned, family regulation takes much crueler forms—medical, nutritional, physical or emotional neglect, abuse and abandonment, practices that Dickemann and other anthropologists call deferred infanticide because they result in a child's death or leave the individual so mentally and physically impaired that it is compromised for life. According to Susan Scrimshaw, associate professor of public health and anthroplogy at the U.C.L.A. School of Public Health, 20 percent of Latin American children are abandoned before they reach the age of 18 (Batten, 1983:108).

"Ironically," said Batten, "and often tragically, in countries where contraception and abortion are not government approved or easily available, human parents are often forced to choose between children. As a result, they must often take the most primitive means known out of their dilemma" (Batten, 1983:108)—namely, infant killing.
**Fry**

D. B. Fry's (1983) work is included here as an introduction to the following section by Kristen Hawkes (1981):

At least two kinds of evolutionary explanation for human infanticide have been posited. The first interpretation employs groups selection to explain infanticide as a population regulatory device. The second suggests that infanticide may be beneficial to the inclusive fitness of the individuals actually practicing it. Data from a cross-cultural sample of 60 cultures were used to test predictions derived from inclusive fitness theory. Infanticide was found to occur in 33 of the 60 cultures. Parents, especially mothers, were usually the assailants. One of the hypotheses investigated was that infanticide would be found more often in societies that suffered shortages of food than in societies with adequate food supplies. Chi square tests of association support this hypothesis. It was also predicted and subsequently found that infanticide is frequently practiced against deformed infants, illegitimate infants, and twins. Overall, these findings are interpreted as supporting the inclusive fitness model. It is also suggested that evolutionary and social/cultural models need not be viewed as mutually exclusive (Fry, 1983:111).

**Hawkes**

Kristen Hawkes (1981) looked at the approaches of Divale and Harris (1974), Divale (1972), Harris (1974, 1977), and Dickemann (1979) and had critical remarks for each. "Divale and Harris argue that human reproductive potential is so much greater than actual fertility that some mechanism of population control must have operated throughout human history," she said, citing their article, "Population, Warfare, and the Male Supremacies Complex" (1976), as one result. She countered the premise that "survival advantage is conferred upon the group that rears the largest number of fierce and aggressive warriors" (Divale and Harris, 1976:526) as follows:
If such a system did arise, consider what would happen to a village which violated conventions by ending female infanticide while still training its males to be aggressive. It would soon increase its fighting force in two ways and so gain the military advantage to "rout and destroy" its neighbors. [A group's] fighting force would expand as an increased number of sons were born to an increased number of mothers. Harris has said: 'The fastest way to expand male combat strength would be to regard every little girl as precious and not to kill or neglect a single one. I doubt very much that any human being ever failed to grasp the elementary truth that to have many men you must start by having many women' (Harris, 1977:43). . . . And second--more immediately--a village with an increased number of women would have in those women a valuable resource for attracting allies (Hawkes, 1981:80).

Here, Hawkes drew from Harner's (1973) study of the Jivaro to point to a group who relied on the fierceness of its sons-in-law rather than on its sons, to contradict the Yanomamo example cited by Divale and Harris for Amazon Basin groups. Hawkes (1981) claimed that in the Jivaro case:

A premium is placed on daughters. . . . While the warring societies as a whole have an average junior sex ratio of 126:100, it is the patrilocal component of the sample which produces the bias while the non-patrilocal component shows a nearly even sex ratio. . . . This correlation suggests that there are different cost/benefit ratios for raising daughters, given different residence arrangements (Hawkes, 1981:82).

Hawkes (1981) next scrutinized Dickemann's (1981) thesis, based on Trivers and Willard (1973), which assumed that preferential infanticide is engaged in to maximize the genetic potential of the parents rather than group selection or population equilibrium assumptions. In other words, upper classes in a stratified society might kill female infants, and lower classes might kill male infants--to the same degree, thereby eliminating a sex ratio imbalance by cross-class marriages. "Dickemann
saw relatively higher rates of female infanticide among the upper classes. . . from pre-industrial India," said Hawkes (1981:85).

The British were informed that the Ajhreja subcaste killed all female infants at birth. . . . Other Rajput subcastes were also implicated. Early estimates ranging from 3-20,000 infants killed annually are no doubt exaggerated, but, however inaccurate, censuses do support the contention that almost 100 percent of female live births were removed (Dickemann, 1979:328).

Dickemann also noted that lower classes practiced little or no female infanticide. Hawkes argues against Dickemann because the lower stratum do not practice male infanticide as needed to balance out the sex ratios, as mentioned in the Trivers and Willard model (Hawkes, 1981:86). Hawkes found Dickemann's figures for China even more out of line:

Highest frequencies of infanticide among the peasantry occurred where there was greatest rural poverty and tenancy, especially in the lower Yangtze River valley. . . . In this area and elsewhere, the practice persisted into the twentieth century with ratios as high as 375:100 in the first year of life (Dickemann, 1979:34).

Hawkes commented, "Contrary to the Trivers and Willard model, the sex ratio of parents in the poorest condition seems to be the most strongly biased for sons" (Hawkes, 1981:87). This bias is usually one-sided, not evened by male infanticide.

In place of choosing either of the above theories, Hawkes (1981) tried to explain infanticide relative to three residence patterns. Patrilocality may remove daughters far enough away so that they can offer little assistance to the parental family. Also, "potentially a son may have many more children than a daughter. Thus, there is a preference for sons by both mothers and fathers" (Hawkes, 1981:91). The
latter comment is a bit feeble, but is basically derived from Divale and Harris (1976).

In the case of matrilocality, where there tends to be an absence of female infanticide and external war, "men are oriented outward" (Hawkes, 1981:91) for purposes of hunting and other competitive activities, and are frequently away on expeditions. This diminishes the preference for sons since they are gone so much and have a weaker bonding with their families.

In patrilocal, stratified groups, upper classes may wish to reduce females because they are perceived to be a burden on family wealth. "Dowry, rather than bride price, is the property transaction associated with marriage" (Hawkes, 1981:92). By taking wives of a lower stratum with dowries, "kin groups add to their wealth and solve the 'problem of heirship' by controlling closely the sexuality of the wives they take. Patrilineal bias, patrilocality and dowry are thus a likely cluster among resource holding elites" (Hawkes, 1981:92). This varies for the less fortunate:

At the other end of the social scale, strategies for maintaining security differ. Here families hold insufficient resources to ensure survival. The only 'factor or production' which they can manipulate to some extent is labor. Having many children means having many hands... [producing] a tendency toward patrilocality, bride price and sons (Hawkes, 1981:94).

This being so, Hawkes concluded that

a general model which can account for distribution of female infanticide throughout the evolutionary spectrum of cultures draws on the insights of sexual selection noted by Dickemann and incorporates them into a cultural evolutionary framework of the sort used by Harris and Divale (Hawkes, 1981:95).
This section, concludes the group of writers who select from both the ecological and social aspects of infanticide. The biggest problem with this group is that even the portion of human infanticide that is represented by female selection cannot be controlled by any one of these neat, specialized systems. Because these authors have something of value to offer, they are represented here although, in many cases, the most human and more obvious reasons (reasons you might give yourself for not wanting to have children--or more children) are ignored or overlooked because they bring on feelings of guilt and embarrassment that are hard to put into a sophisticated framework. These feelings are those of inconvenience, such as diminution of finances, reduction of prestige or comfort, having to work harder to sustain the family, covering for an illicit relationship, feeling too old, a dislike for children, a threat to feminine beauty or a restriction of sexual activity, not wanting to hear crying all the time or to be on call for 24 hours a day for years and so on.

Instead, many of these postulates chew one or two cultural examples (and theories) to death, in order to find a "rational" explanation or a servicable "model" that fits the scholars' images of propriety. Most of them would likely have benefited from a broader research base and the ability to relax in the face of this intense, taboo subject--something I also find difficult.

Douglas

In the following article by Mary Douglas (1966), we see the case for prestige appearing, although she was reticent about applying it.
Douglas began with a recapitulation of Wynne-Edwards' and Carr-Saunders' philosophy:

He [Wynne-Edwards (1962)] asks how a balance is maintained between population density and available resources; what holds back the latent power of increase so that critical resources are not over-exploited... [necessitating] an assumption that the 'normal' distribution of a species is optimum (Douglas, 1966:263).

Wynne-Edwards felt that, if population density should rise in a given econiche, resultant pressure on basic resources would trigger an internal response within the individuals making up the group, causing the population to fall back to a status quo comfortable for the majority.

Carr-Saunders' primary contribution here was that it is assumed that this desirable optimum is actually achieved in primitive groups, who tend to have adequate resources and relative freedom from want and disease... The controls that interest him were imposed from within, social conventions which decrease fertility or increase elimination" (Douglas, 1966:254-265).

However, Douglas (166) found two major difficulties with the Carr-Saunders/Wynne-Edwards approach: (1) it is difficult to test this idea. Primitive groups whose numbers are not limited by any outside factors, and who are free from want would be improbable, and (2) underpopulation is not considered. "This omission enables them to take the actual given population at any time as the optimum" (Douglas, 1966:265). She continued, "Much anthropological evidence suggests that primitive populations are prone to underpopulation and that the latent power of increase, so far from being a threat to the resources, is not sufficient for the people to realize the full possibilities of their environment" (Douglas, 1966:265). Therefore:
there would be no problem to solve about internal social controls if in fact it could be shown that external controls . . . kept the population . . . well below the level at which it could threaten to over-exploit its food resources. But, this in fact is frequently the case with human groups (Douglas, 1966:266).

Douglas argued next that the critical resources which trigger the social controls may not be food availability but the availability of amenities. It can be "more relevant ot take into account the ceiling imposed by the demand for champagne or private education than the demand for bread and butter" (Douglas, 1966:267). There must be a shift from the idea of a particular optimum being imposed by demands for basic necessities to the satisfaction of many types of demands, "including demands for luxury and leisure" (Douglas, 1966:267).

The needs of the sparsely populated Shoshone Douglas mentioned were not fulfilled due to underpopulation. These unmet needs were primarily social (festivals and rabbit drives). The controlling reason for the density of one to two per square mile was the desire for treasured pine nut locations, an overriding factor.

"Now we come to the final and serious difficulty," Douglas says, "with the homeostasis theory of human population, which is that it visible does not work. If it did, we would not be worrying about population explosions in India, Mauritius, Egypt, etc." (Douglas, 1966:268). (In fairness, these countries are experiencing many "external factors" which would mask a basic tendency for homeostasis.) Furthermore, "examples abound of political competition to increase numbers in the face of economic pressures to reduce them. [Even so] human
groups do make attempts to control their populations, often successful attempts. But they are more often inspired by concern for scarce social resources for objects giving status and prestige, than by concern for dwindling basic resources" (Douglas, 1966:268).

In the Netsilik, based on Rassmussen (1931) and Balikci (1968), Douglas granted that "here we have an instance of infanticide. . . used as an instrument of demographic policy" (Douglas, 1966:268). Here, however, I think she gave in too easily. A fair case could be made for noncritical motives, but, Douglas continued, "According to my general thesis, this type of population control in the interests of bare survival is rare. More usually there is prestige, rather than subsistence, at stake" (Douglas, 1966:268).

The Rendille of Kenya have an overpopulation problem in relation to camels. The control measures used by Rendille include: (1) emigration to Samburu as cattle herders (perhaps up to 30 percent of the Rendille go this route); (2) monogamy, with the herd going to the eldest son; (3) late marriage of women, and excess women being sent to Samburu; (4) the killing of boys born on Wednesdays or past the circumcision of the eldest son. Again Douglas backed off, saying camels are the critical (survival) resource; however, the Rendille also herd sheep and goats, which would satisfy the needs for meat, milk and wool quite as well as camels do, even if they were not as highly valued.

Douglas' final example, using infanticide as a control mechanism, was that of the insular Tikopia. "Strong disapproval was felt for couples who reared families of more than two, or at most three children" (Douglas, 1966:270). Contraception, abortion, infanticide,
pushing criminals out to sea, etc., were all means of population control. Douglas saw coconut cream, not staples, as the limiting factor here. Firth (1956) mentioned that the Tikopia did not appear to be concerned with a balance between population and food supply in terms of mere subsistence. Instead, they were concerned with the quality of the food, as well as ease.

Douglas concluded, "It seems that population homeostasis does occur in human groups. The kind of relation to resources that is sought is more often a relation to limited social advantages rather than to resources critical to sheer survival" (Douglas, 1966:272).

Most important is the practicality of this information in an impoverished and burgeoning world:

Policies of control develop when a smaller family appears to give a relative social advantage. The focus of demographic inquiry should therefore be shifted from subsistence to prestige and the relation between the prestige structure and the economic basis of prosperity. A small primitive population . . . to which the ladders of social status offer a series of worthwhile goals which do not require large families for their attainment, is likely to apply restrictive demographic policies.

When social change occurs so rapidly that the prestige structure is no longer consistent, we should expect population explosions to occur. Or if the whole traditional prestige structure is broken as a result of foreign oppression or economic disaster, again we would expect that the social controls would be relaxed. There is a message here for the countries whose prosperity is threatened by uncontrolled population increase. In those countries we see the well-educated and the well-to-do actively preaching family limitation and setting up birth-control clinics as a social service for the teeming poorer classes. They encounter resistance and apathy. . . . Their failure spurs them on to more enthusiastic propaganda. But if they would succeed, let them first look to their prestige structure. What hope of advancement does their system of social rewards offer to those to whom they preach? Have the ladders of high prestige enough rungs to reach into the most populous
sections of the community? If the prestige structure were adjusted propaganda would be more effective or perhaps not necessary. For given the right incentives, some kind of population control would be likely to develop among the poor as it apparently has amongst those who seek to administer the demographic policy (Douglas, 1966: 272-273).

Cowlinshaw

Gillian Cowlinshaw (1978) looked at Australian infanticide and exclaimed, "It is labeled as a population control device, and I hope to show that this label is unsuitable" (Cowlinshaw, 1978:262). In order to do this, he gave background references for Australian infanticide generally, and later for first-born infanticide, which is thought to be the most prevalent sort:

Infanticide has been reported for most of the areas of Australia for which information is available. Taplin (1874:26) for the Adelaide area and Gason for Victoria (in Curr, 1886:v.2, 46) both reported 30% of the children were killed at birth. These contrast with other reports from S.W. Australia of infrequent infanticide. . . . A woman would raise two or three infants. . . . Such reports are very frequent for most areas. Frequently the reasons given . . . specify one aspect of the situation, to do with the infant. Deformed children are always killed at birth (Grey, 1841:251; [and many others]). It is sometimes believed that deformed and premature babies are of some other species which has entered a woman by mistake. One or both twins are killed and again some say that it is like a dog to have a litter (Schulze, 1890:237, [and others]). . . . Hilliard (1968:102) says that '. . . there has been speculation as to the number of men involved in a multiple birth.' . . . Two other categories of infants said to be killed at birth are girls and illegitimate children [born either to unmarried girls or to incestuous unions]. A few authors say that girls were more frequently killed than boys (Le Soef, 1878:290; Dawson, 1881:39) but the early literature provides a great number of denials that this is so. Moreover, it is unlikely on economic grounds, as women provide a large proportion of the food. . . " (Cowlinshaw, 1978:264).

Cowlinshaw (1978) had quite a different kind of reason for a woman killing her newborn. It had to do with her own situation at the time.
After sifting two reasons from the condemnations of observers, Cowlinshaw found the first category to include child spacing deaths which, when needed, were carried out by other women in the bush, since the new mother could not suckle and carry two babies at the same time. Following are three accounts given in support of this cause:

In all of the tribes, infanticide is practiced. There is no difference made in respect of either sex. The usual reason given for killing the child is that there is another one still being suckled by the mother. It is only on very rare occasions that any child except a mere infant is killed. Among the Luritja tribe... a healthy child may be killed for the purpose of feeding a weaker and elder one, under the idea that the strength of the former will pass into and benefit the latter... Twins are usually destroyed at once as something uncanny... In the Binbinga and coastal tribes a child will be killed if it has been causing the mother much pain before birth (Spencer and Gillen, 1904:608-9; cited in Cowlinshaw, 1978:265).

Sometimes a mother kills her newborn babe because it had followed too closely on her others and she has not enough milk to feed it. This would be done without the knowledge of the father, who would be most angry if he knew it. If a baby dies when born, the father is suspicious of his wife, believing that she might have smothered it in the bush (Warner, 1937:36, for Arnhem Land; cited in Cowlinshaw, 1978:265).

The sacrifice of the newborn infant, or sometimes an older infant for the sake of its older sibling who is sickly was described by Spencer and Gillen for the Luritja: 'the object being to feed a weakly but elder child who is supposed thereby to gain the strength of the killed one' (Spencer and Gillen, 1899:52). Several other authors report the neonate being roasted and fed to an older child who is weak or sickly (Stanbridge, 1976:52; Howitt, 1904:749; cited in Cowlinshaw, 1978:265).

The limitations of a woman's ability to feed and carry more than one suckling infant as well as collect food for her husband is accepted by a number of writers as a full and satisfying explanation... However, while such 'motives' are clearly part of the explanation, there are a number of reasons for finding them inadequate (Cowlinshaw, 1978:265).
Cowlinshaw then gives three reasons which may support the second cause of infanticide, which is the rejection of motherhood, especially as displayed by the frequent murder of the firstborn: (1) although lower animals kill offspring, it is only in accord with a fixed-action pattern.

There is nothing here comparable with infanticide among humans, . . . the deliberate killing of a newborn infant, is a peculiarly human form of behavior and one that requires strong motivation in that it must overcome the phylogenetic heritage that usually leads to nurturance. That is, infanticide rather than nurturant behavior requires explanation" (Cowlinshaw, 1978:266); (2) 'Human beings do not simply act in terms of short-term material rewards. Among Australian Aborigines for instance, in physically demanding environs there are accounts of 'useless people' such as the very old and incapacitated being cared for at considerable cost' (e.g., Kaberry, 1939:54). If it is to be seen as a response to overpopulation, as writers such as Birdsell (1968), Peterson (1975), and Hayden (1973) have argued, it is necessary to translate the group needs to the individual women who are to kill their infants. The assumption is that if the women know that the population is increasing they will obediently dispose of their next infant or two as unacceptable (Cowlinshaw, 1978:266); (3) 'Killing of the first child or children [is more frequent than child spacing deaths] . . . without lactation a woman [after killing the firstborn] would become pregnant again. . . so that if she wishes to postpone the rearing of a child until a certain age she would have to kill several infants" (Cowlinshaw, 1978:266).

Next, several selected examples are given of the rejection of the firstborn and of troublesome children. "The nurse's most difficult duty is to prevent the mother killing herself or her baby. . . . It is customary for women to kill their first child as they do not wish the trouble of rearing them" (Cowlinshaw, 1978:266). Palmer (1884, for Queensland) reported that "infanticide is not so common as supposed, though a girl's first child is often sacrificed" (cited in Cowlinshaw, 1978:266). Gason (in Curr, 1886:v.2:46) says that in "northeastern
South Australia the firstborn is often considered too immature to live. Most old women questioned admitted having disposed of from two to four of their own offspring in this way. . . . Women in western Queensland were reported not to be allowed to rear children until they were 30 (cited in Cowlinshaw, 1978:266).

Roth, referring to North Queensland, said: "A mother may lawfully kill her child within a few hours after birth especially if pregnancy and confinement has caused her more than ordinary pain and trouble. If the mother died in childbirth, the child was deemed guilty of having killed the mother and was invariably immediately killed and eaten by the old women" (Roth, 1906:6 and 1907:402; cited in Cowlinshaw, 1978:267).

Psycho-social reasons for infant rejection stem from the total sacrifice of mother to infant and the demanding attitudes and dangerous power of males from childhood up:

An infant up to six months old is seldom out of hearing of its mother and sleeps beside her at night, for at least a year. If someone else is holding the infant, its first whimper insures that it is rushed to its mother and given the breast. Babies are never left alone and seldom put down until a few months old. There is no real separation from the mother until the child is about two and, in some children, slinging is common until about four or even older. The mother's breast is always available and is used as a pacifier and even a plaything later (Cowlinshaw, 1978:271).

Infants are a source of strain, toddlers are pampered, and boys (who become dangerous and mean) are tolerated. Boys attack and injure even infant sisters with spears. Woman cannot retaliate but can only run away. Girls must follow a ridiculous string of taboos (food, water, laughter, etc.) especially in their brothers' presence. In
addition, "two incisions are made in her calves when her brother is circumcised" (Cowlinshaw, 1978:277). A girl's husband is at least as old as her mother and possibly as old as her father. Eloping is frequent, although punishment could be fatal.

Cowlinshaw argued that "among Australian Aboriginals, is the resentment of the father, brother and husband which is the origin of a girl's infanticidal wishes" (Cowlinshaw, 1978:279). This is depicted as follows:

I have tried to show that certain aspects of a young girl's typical experiences... cause her to develop strategies of self-defense, that is defense against oppressive demands, only some of which I have described... First mothers and other female kin make her work for old people; she must give her harvest to fathers and then husbands; a husband demands she work for him; then infants and sons must be provided for. It is not the amount of work I am calling onerous, though in some cases it certainly is; rather it is the denial of a woman's own desires by the primary demands to feed infant and husband in particular, and the care she must take not to offend brothers. Women have few opportunities to avoid these demands, and must not appear to do so (Cowlinshaw, 1978:278).

These women may only relax when the men are away.

Cowlinshaw (1978) has touched on some of the more ticklish points here and the breadth of his research base is refreshing.

Durand

John Durand (1972) also had some sense of the subtle. Sometimes there are such cases in which food is the limiting factor, but there are "many more cases where the family size is small although the parents could easily feed more children... Carrying difficulties, cases where parents do not want to work so hard as they would have to
if they were to have more children" (Durand, 1972:370) are a much better
fit with reality, even in our own society.

I believe we might find infanticide in communities where it
would be possible for the parents to feed more children, but
they just consider two children enough for them. In our
culture, there is a strong moral commandment that mothers
have to love their babies, and so we are included to think
that mothers would kill their newborn babies only if they
really could not feed them (Durand, 1972:370).

Engel

In stark contrast, Sigmund Engel (1912) provided a eugenic view in
which the mother's desires, one way or another, are ignored. It is the
group which is all-important. Engel felt "that mental and physically
defective infants should and indeed must be killed for the benefit of
the species. This, preferably, would be done at birth or soon after,
with a swift and painless narcotic. For the present, we may leave the
question open whether the consent of the parents should first be
obtained (Engel, 1912:25).

As soon as it is generally understood that the interest of
future generations is at least as important as that of the
present generation, that the interest of the species is more
important than that of a few individuals useless to society,
and as soon as the number of cases in which such destruction
of children is desirable has been greatly diminished owing
to the adoption of appropriate [eugenic] preventative
measures, it would be regarded as a moral and necessary act
to put an end to these defectives. . . . Artificial selec­
tion . . . deliberately eliminates those elements which are
useless to society, or which can be utilized by society only
at excessive cost. . . the future belongs to artificial
selection (Engel, 1912:25).

So much for the candid, or more embarrassing social, aspects of
infanticide. Note that these authors did not dwell on female infan-
ticide or Eskimos.
In seeking an answer to the proposed question: selected data and theorists have been reviewed. I have tried to subjectively evaluate the data and concluded that these data, both historical and cross-cultural, seem overwhelmingly to favor social reasons for infanticide. The theorists are apparently of diverging opinions.

Parents must deal with the need to nurture and the burden of child rearing at the same time. Bakan (1975) summarized these feelings as follows:

Fleeting death wishes against the children must occur in most parents—but these wishes often remain unconscious since there is a strong prejudice against their recognition. . . . Children may constitute a burden and a threat (to resources), and thus they elicit the impulse the remove them for being. Yet human society is contingent upon each generation's accepting the burden of the next. Certainly the very existence of mankind on the face of the earth attests to the fact that over and above any tendencies to kill children are tendencies to undertake their care, no matter how great the burden may be (Bakan, 1975:1).

Parents make these decisions within a cultural matrix. Either infanticide and abortion are acceptable or they are not. If they are, the practices must usually be undertaken within cultural traditions.

At times, the society will demand the death of a newborn over and above the will of the parents. Usually, however, there is leeway for the parents to make decisions based on immediate circumstances. These circumstances may include convenience, family size, interpretation of deformity, or survival, if necessary. It is not that the children don't count, it is that they don't count enough at the time.
Harris (1977:184) explained that larger families exist "where the net benefits of rearing children exceed the costs." Although the outcome of all infanticide is population limitation, this rarely is counted among the reasons given in explanation. In fact, the reasons we humans give for infanticide are sometimes even whimsical: dowry systems, improper tooth eruptions, boys born on Wednesday, improper birth presentation, children born under unlucky stars, and other perceived idiosyncratic imperfections. The cases cited of illegitimacy and twinning or consecutive births being too close have more of an urgency as they may be too great a strain on the mothers. But to believe parents would kill babies to prevent the possibility of a group-wide food shortage is irrational, and rather controversial. Most accounts giving this explanation tend to be post facto advice or rationalization, although at times scarcity of resources is given along with other social reasons.

We might entertain the possibility that infanticide originated as a survival-oriented practice and that it now is a cultural vestige continuing of its own inertia. However, there is no confirmation of this in the literature reviewed. Perhaps further scrutiny of the causes and purposes of infanticide will allow other researchers to elucidate the questions of when and why this practice arose among hominids. Whatever these answers might be, I believe it can be stated of human beings that, as a whole, they do not take the act lightly. We have evolved various associated rituals, traditions, justifications and explanations for it. The various observances and obligations, or emotionally
charged rejections, make it easier for the parents to bear or forget guilt and/or pain.

In no group, either in the H.R.A.F. material (see Appendix) or elsewhere, did I find any but the most derisive accounts that claimed that no importance was attached to the killing of a human child. In fact, it was frequently considered to be an evil or abhorrent crime to the people among which the practice was recorded. It would seem then, that for such parents, the path of infanticide is considered the lesser of two evils.
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Selected information gathered from the Human Resources Area Files (H.R.A.F.) has been recorded on the following world maps, which were taken in their entirety from the Atlas for Anthropology by Robert F. Spencer and Elden Johnson, University of Minnesota. The maps are a quick review of the enormity of the practices of infanticide and abortion, as well as the numerous occasions that nondemographic reasons are given.

No tallies are made here as it is difficult to compute a complete number of tribes past and present, or how accurate the accounts were and my reading of them. It must be kept in mind that several accounts on one particular group may have differed. If a fairly good account of infanticide or abortion was given for any point in the history of a particular people, it has been recorded. History is important here because the cultural practice of infanticide tended to change through time, primarily from acceptance to rejection, reflecting changes in religion and political organizations, the influences of missionaries or colonial powers.
MAP I

NORTH AMERICA
Culture Areas and Tribal Groups

Tribal Groups

1. Aleut
2. Point Barrow Eskimo
3. Cape Bexley Eskimo
4. Cape Smith Eskimo
5. Copper Eskimo
6. West Greenland Eskimo
7. East Greenland Eskimo
8. Kutchin
9. Kaska
10. Tlingit
11. Nahane (Upper Liard)
12. Bella Coola
13. Nootka
14. Yurok, Karok, Hupa
15. Pomo
16. Gallinomero
17. Misalia
18. Yokuts-Mono (Chukchansi)
19. Magun
20. Gudela
21. Makheichel
22. Kabinapek
23. Gros Ventres
24. Crow
25. Hidatsa
26. Mandan
27. Arikara
28. Chiricahua Apache
29. Omaha (Dhegiha)
30. Ponca
31. Ojibwa and Northern Salteaux
32. Micmac
33. Delaware
34. Iroquois
35. Creek
36. Seminole
37. Havasupai (Plateau Yumans)
38. Yuma
39. Papago
40. Navaho
41. Hopi
42. Zuni
43. San Ildefonso, Tewa
44. Tarascan, Sierra Terascans
45. Tsintsuntzan
46. Tehuantepec
47. Tepoztlan
48. Mitha
49. Chorti
50. Yucatec-Maya
51. Piste, Cacal
52. Sumo-Mosquito
53. Guana
54. Cuna
55. Terena, Mbaya
56. Kadweu, Gusikuru
57. Callinango, Carib of Dominica
58. Mirebalais (Haiti)

Culture Areas

I. Arctic Coast
II. Northwest Coast
III. Intermontane (California Basin-Plateau)
IV. Southwest
V. Northern Subarctic
   A. Yukon-McKenzie Area
   B. Eastern Subarctic Area
VI. Plains
VII. Eastern Areas
   A. Eastern Maize Area
   B. Southeastern Area
VIII. Mexico and Central America
IX. Antillean

Legend

○ = infanticide
* = abortion
or ○ = not practiced
or ● = critical resources
   a major consideration

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Tribal Groups

1. Paez
2. Choco
3. Kogi-Cagaba
4. Puerto Rico-Tabara
5. San Jose
6. Inca
7. Aymara (Compi, Chinchera)
8. Araucanians-Napucha
9. Mapuche
10. Huilliche
11. Yamana (Yahgan)
12. Abipon
13. Mataco
14. Toba-Pilaga
15. Choroti
16. Guana
17. Terena
18. Chiriguana (Guarayu)
19. Guarani (Kayova, Mbuva)
20. Tupi-Guaiakuru
21. Tapirape Paraguay
22. Tenetehara
23. Nambikuara
24. Caraja (Brazil)
25. Bakairi
26. Jivaro
27. Villa Reconcavo
28. Yanomamo
29. Siriono
30. Chane
31. Bahia Brazilians
32. Guajiro (Goajiro)
33. Carib (except possibly Pemon and Kamarakoto)
34. Arawak
35. Bush Negroes
36. Warao (Warrau)
37. Boni
38. Djuka

Culture Areas

1. Chibcha Area
2. Andean (Inca) Area
3. Antillean Area
4. A. Amazon Area
5. B. Eastern Brazilian Highland
6. C. Internal Marginal
7. V. Chaco Area
8. VI. Patagonian (Pampan) Area
9. VII. Araucanian Area
10. VIII. Southern (Fuegian) Area

Legend

O = infanticide
o = abortion
MAP III
AFRICA
Culture Areas and Tribal Groups

Tribal Groups

1. Siwani (Siwa)
2. Fellahin
3. Tuareg (Hoggar)
4. Bambara
5. Dogon
6. Hausa (Batagarawa)
7. Mossi
8. Tallensi
9. Kabab
10. Kagoro
11. Yoruba (Ancient Oyo)
12. Ondo
13. Ibo
14. Mende
15. Ekiti
16. Tiv
17. Fang
18. Mongo (Nkundu)
19. Mbundu
20. Ikongo
21. Azande (Cande)
22. Twa (Batwa) Pygmies
23. Kung Bushmen
24. Northwestern Bushmen
25. Nama Hottentot
26. Cape Hottentot
27. Ba-lla (lla)
28. Pare
29. Thonga (Ba Thonga) Ancient
30. Hgoni (Shona)
31. Mpenzi
32. Maravi
33. Lovedu
34. Yao
35. Bemba (Babemba)
36. Ngonde
37. Chaga (Tsagga-Wachagga)
38. Ankole (Bahima)
39. Kiisaka
40. Wandorobo (Dorobo)
41. Runi (Barundi)
42. Baganda (Ganda)
43. Ussumbwa
44. Unjamwesi
45. Nuer
46. Shilluk
47. Tanala (Madagascar)
48. Libyan Desert (Sima)
49. Jordan

Culture Areas

I. A. Muslim North Africa
   B. Egypt
II. Saharan Area
   III. A. Western Sudan
       B. Eastern Sudan
IV. Guinea Coast
V. East Horn and Abyssinia
VI. A. Eastern Cattle Area
    B. Cattle Area (Western Margin)
VII. Congo Area
VIII. Khoisan Area
    A. Bushman
    B. Hottentot

Legend

○ = infanticide
○ = abortion
○ or ○ = not practiced
MAP IV

EUROPE

Culture Areas and Ethnic Groupings

Ethnic Groupings

1. Yugoslav
2. Serbs (orosac)
3. Croats
4. Montenegrins, Littoral Dist.
5. Kragujevac
6. Gurbisnopolje
7. Moslem Bosnia
8. Derventa, Prespa
9. Dalmatian Highlands
10. Dugoselo, Varasdin
11. Macedonians (Contempor.)
12. Greece
13. Gallician Ukrainians (Encinte)
14. Russian
15. Koryak
16. Kamchadal
17. Lapps
18. Gilyak
19. Manchus
20. Kirghiz-Kazak
21. Turkoman (Kurds)
22. North Chinese
23. South Chinese
24. Koreans
25. Japanese
26. Lao
27. Annamese (Vietnameses)
28. Thai
29. Burmans (Muria)
30. Andamanese (Onges only-others)
31. Chin Hoan Formosa
32. Atayal
33. Lodak
34. Lepcha
35. Tibetans
36. Nepalese (Himalayan Village)
37. Kolarian Tribes (Munda)
38. Mers (Merwa)
39. Hindus
40. Toda (Tevali & Tartharol)
41. Vedda
42. Ratanmal
43. Kathianjar-Hindu Bedikhatris
44. Kashmir
45. Georgians-Svans
46. Khevsurs
47. Ruwella
48. Bedouins
49. Ku Daeng
50. Afghan
51. Gorod
52. Rajputs (Punjab, Rajputana, United Provinces)
53. Dard
54. Chamar
55. Kerak
56. Kerala
57. Thandan
58. Monggur

Culture Areas

I. Paleo-Siberian Area
II. Siberian Area
III. Central Asian Steppe Area
IV. Sphere of Chinese Civilization
   A. 1. North China
   2. South China
   B. Korea
   C. Japan
   D. Annam (Viet-nam)
V. Manchurian Marginal Area
VI. Tibet
VII. Southeast Asia Marginal or Substratum Area (Note: Cultural Affiliations with Indonesia; See Map V)
   A. Andaman Subarea
VIII. Sphere of Hindu Civilization
   A. India
   B. Burma
   C. Thai (Siamese) Subarea
   D. Campuchia
IX. Sphere of Islamic Civilization
   A. Levantine Area
   B. Desert Area
X. Caucasus Area
XI. Eastern European Area
XII. Southern European Area
XIII. Western European Area

Legend

○ = infanticide
○ = abortion
■ or ● not practiced
□ or ◇ critical resources a major consideration

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Tribal Groups

1. Easter Islanders
2. Marquesans
3. Tahitians
4. Kembara
5. Mothe
6. Lau Lakemba
7. Manua
8. Maori (Mangareva)
9. New Hebrides Islanders
10. Solomon Islanders (Buka-Kurtachi, Pororan & Buin)
11. New Ireland (and Lesu)
12. Melanau
13. Admiralty Islanders (and Manus)
14. Tikopia
15. Duke of York (N. Melanesia)
16. Wogeo
17. Yap Islanders
18. Gilbert Islanders
19. Ellice Islanders
20. Atayal (Formosan), Chin Hoan
21. Isneg
22. Iloko
23. Apayao
24. Igorot
25. Batak (of Paiawan)
26. Iban
27. Singapore (Malays)
28. Sea Dyak (Orang Laut; coastal Malays)
29. Kelantan
30. Makasar
31. Buginese
32. Semang
33. Garontolo
34. Jehai
35. Batak (of Sumatra)
36. Javanese
37. Balinese
38. Alorese
39. Murngin (Yirr Kala)
40. Tasmanians
41. Orokaiva
42. Malekulans
43. Pukapukans

Culture Areas

1. Polynesia
2. Micronesia
3. Melanesia
4. Papua (New Guinea)
5. Indonesia
6. Australia

Legend

- = infanticide
o = abortion
or o = not practiced
@ or @ = critical resources a major consideration

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