

CHAPTER 4

Comparative Gender Stratification

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1. INTRODUCTION

This chapter selectively reviews more than 25 years of research in anthropology to assess the effects of premodern subsistence modes on variation in levels of sex inequality. Inasmuch as hunger is the chief determinant of human relationships (Goody, 1982, p. 15; Messer, 1984, p. 208), no society can be understood without knowing what men and women must do each day in order to eat. I also focus on two societal functions that mesh with a given subsistence technology in complex ways: reproduction and the legitimate use of force. A large interdisciplinary literature on women in development is excluded because it is reviewed elsewhere in this volume.

Most research on gender inequality has appeared since 1970, when anthropologists first began to consider women's work. Earlier, Mead (1973, p. 4) could have been speaking for all social scientists when she said that women anthropologists wanted to do the same work men did and therefore did not study the activities of women and children.

The mode of subsistence refers to the types of energy a society uses to secure food (Friedl, 1975). Subsistence modes tend to respond to population pressure on a given physical environment. The three major theorists of population dynamics—Smith, Marx, and Boserup—agree that humans, like other animal populations, inherently tend to increase toward the environment's short-term carrying capacity (Hammel & Howell, 1987; North & Thomas, 1973). Ensuing population pressure spurs technological innovation and other adaptations for the management of scarce resources (Heider, 1972, p. 211).

Influenced by earlier work in anthropology and by Duncan's (1964) powerful analysis of ecology, Lenski (1970) classified societies by the major tool used in food production to show how the interrelations of population, organization, ecology, and technology af-

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fect social stratification, thus making a wide range of data from anthropology accessible to sociologists (Moseley & Wallerstein, 1978, p. 262). Earlier typologies that classified societies by the materials used to make tools (e.g., stone, iron) had been theoretically sterile, yielding no important predictions. A typology based on subsistence modes combines comprehensiveness with minimal ambiguity and maximal reliability (Lenski, 1994, p. 24).

Appearing in rough sequence by order of technological complexity, subsistence modes affected societal size and organization by limiting the number of people who lived long enough to reproduce. I focus on those preindustrial modes whose technologies developed around field and forest resources: hunting and gathering, the hoe, herding, and the plow. I regret any distortions that may result from compressing so many societal types into one chapter.

Lenski's schema went far toward explaining the emergence of caste, class, feudalism, and slavery, but said little about gender stratification. Anthropologist Ernestine Friedl (1975) was first to use a subsistence framework to explain why men tended to be more dominant than women in foraging and hoe cultures. Later, sociologists Rae Blumberg (1978, 1995), Janet Chafetz (1984, 1990), and several anthropologists (see Chafetz, 1984, p. 3) used a typology based on subsistence modes to explain societal variation in gender inequality.

The dependent variable, the level of sex inequality, is an asymmetrical concept. Like a pendulum destined to swing only to the midpoint of a trajectory, women collectively are never more advantaged than men. It is their extent of disadvantage that varies (Chafetz, 1990, p. 117) and justifies attention to causal antecedents (Sen, 1990, p. 124).

Yet the causes of cross-cultural variation in gender disadvantage remain elusive. Sociology texts have nothing to say about the topic (Ferree & Hall, 1996, p. 944). It was much studied in anthropology (under the rubric of women's status), yet reviews in the *Annual Review of Anthropology* (1977 and 1988, respectively) reported that the search for key causes had been unfruitful. What went wrong?

One possibility is that problems encountered in studies based on Murdock's (1967) cross-cultural sample (e.g., Whyte, 1978) dampened enthusiasm for macrolevel theories of women's status (Mason, 1984, p. 5; Mukhopadhyay & Higgins, 1988, p. 462; Quinn, 1977, p. 182).¹ Murdock's sampling was inadequate and the data, of uneven quality, had not been collected with the Murdock categories in mind (Fedigan, 1986, p. 47). Studies based on such data tend to yield inconclusive findings.

Another reason that causes of variation in sex inequality remain unclear is perhaps more significant. Despite their interest in political affairs, anthropologists gave little attention to a persistent question that puzzled them: men's universal monopoly on politics. They also neglected a related issue, the most puzzling in the literature: women's exclusion from institutionalized competition for prestige (Quinn, 1977, p. 222). Yet a decade later, despite the domination of gender issues in the study of small-scale societies in the 1980s (Flanagan, 1989, p. 253), the reasons for women's lack of attainment in the political or military arenas continued to receive little study (Mukhopadhyay & Higgins, 1988, p. 464; Ross, 1986, p. 844).

A third reason may stem from anthropologists' attempts to avoid nineteenth century errors entailed by grand theorizing by their tendency to concentrate on particularities, leaving theoretical issues implicit and giving little attention to the methods that com-

¹ For a review of studies based on cross-cultural surveys, see Burton and White (1987).

parative studies entail (Goody, 1962, p. v). Such practices make their findings hard to generalize.

Despite the problems of focusing on an area that is both underresearched and undertheorized, I proceed on the premise that the key to understanding premodern variation in sex inequality lies in the interrelations of subsistence production, the politico-military arena where rules are made, and patterns of population maintenance. I examine how subsistence modes interact with two activities overwhelmingly the province of one sex: the legitimate use of force and the bearing and rearing of children. Men fight wars. Women bear and suckle children. Are these facts related? If so, how?

2. RECONSTRUCTING HUMAN EVOLUTION

I begin by reviewing research on human social evolution for its bearing on the relationship of work, war, and population maintenance. The study of social evolution necessarily involves sociobiology, yet this area has become divisive in anthropology. Only a minority of cultural anthropologists accept the concepts of sociobiological theory, biological anthropology's basic perspective (Lieberman, 1989, p. 680). Like their counterparts in sociology,² feminist anthropologists have been leery of claims that biology affects gender roles, perhaps because biology had long been invoked as the sole explanation. Gender theorists contest the degree to which ecology or evolution links sex differences to the division of labor when the real problem is to assess to what extent and in what ways the differences matter (Worthman, 1995, pp. 594, 602).

It is a mistake to overlook the role of biology in gender stratification, for at least one sex difference matters. The fact that no man can bear a child makes women central to population maintenance in a way that men cannot be, and population maintenance is crucial to species survival. It would be premature to exclude biological factors when the origins of sex stratification are so imperfectly understood. Human software derives from cultural evolution; the hardware is a result of biological evolution (Leach, 1984, p. 20).

Nineteenth century evolutionists held that all human societies progress through technological and social stages to a final civilized state, as in Europe. In the twentieth century, their work was discredited for its ethnocentrism, teleology, methods, data, and conclusions in a reaction that led to the establishment of anthropology as a discipline (Orlove, 1980, p. 236). Classical anthropology then focused on topics such as kinship and symbolism, neglecting the influence of economic factors (Testart, 1988, p. 9).³ Food production was seen as a dull topic (Netting, 1974, p. 21). The study of social evolution lay dormant until the 1960s, when interest arose on the basis of data produced by twentieth century fieldwork (Fedigan, 1986, p. 32).

Two opposing theories currently explain how the human species evolved. The older one, man the hunter, is the most popular reconstruction of early social behavior (Zihlman, 1981, p. 75). It was drawn from a literature that converged on one distinguishing human trait: the pursuit, killing, and eating of animals with the use of tools. The most influential expression of the older theory, Washburn and Lancaster (1968) argued that hunting de-

²Rossi's (1977) thesis that biology plays a part in sex-role theory was very controversial (Miller & Garrison, 1982, p. 238).

³For example, Marshall's (1968, p. 13) analysis of marriage in the *International Encyclopedia of the Social Sciences* defines brideprice, dowry, and polygyny without reference to women's economic contributions.

mands all those qualities of human behavior that separate man from other primates: male aggressiveness and pleasure in killing, bipedalism, elaborate toolkits, language, appreciation of beauty, the division of labor, the monogamous nuclear family, loss of female estrus, and male bonding (Fedigan, 1986, p. 32). Washburn and Lancaster (1968) argued, further, that the killing of animals with tools had so long dominated human history that it shaped the human psyche for all time (Fedigan, 1986, p. 33). Their argument was repeated in so many articles and texts that it acquired something akin to the status of a received truth.⁴ Most of the authors in the two most influential compendiums of the time (Lee & DeVore, 1968; Washburn, 1961) mentioned only hunting as a way to procure food (Fedigan, 1986, p. 33).

Like Darwin himself, man-the-hunter theorists failed to apply to human females the theory of sexual selection that Darwin developed to explain secondary sex differences: men were selected for intelligence, courage, and technological ability; women, for maternal traits. This view pervades reconstructions based on the primacy of hunting (Fedigan, 1986, p. 62). Tiger and Fox (1971) saw male bonding in hunting as focal; predatory aggression was genetically wired into (male) nature (Zihlman, 1981, p. 82). Wilson (1975), despite his emphasis on parental investment and mate choice as key concepts in sociobiology, failed to apply them to female mammals or primates; nor did he use the concepts of maternal investment, female choice, and mechanisms of sexual selection to incorporate women into human evolution (Zihlman, 1981, p. 84).

Ironically, the article that championed the explanatory power of hunting (Lee & Devore, 1968) provided insights and data that led to its undoing. The data showed gathering as vital to foraging life. One of the editors, Lee (1968), even argued that hunters actually gather for a living. Lee's (1980) continuing analysis of women's contribution to subsistence was a major starting point in a reassessment of women's role in early human society (Fedigan, 1986, p. 34). Subsequent research exposed the male bias that pervaded the ethnographic studies on which the picture of man the hunter was based (Dahlberg, 1981, p. 2).

A newer view of evolution centers on woman the gatherer. Man the hunter came to be seen as a backward projection of sex stereotypes onto humans of more than a million years ago (Zihlman, 1981, p. 76), Themes of male aggression, dominance, and hunting that led to the belief that sex inequality was rooted in biological sex differences were modified to fit a growing body of data on living apes and hunter-gatherers. It is improbable that hominid mothers sat about awaiting the return of the hunters; more likely, they actively sought food while carrying infants. To postulate that early human females were sedentary denies their primate heritage (Zihlman, 1981, p. 89). There were no sedentary females in foraging societies. Available quantitative data show that women were away from camp as long as men and walk the same distances, carrying infants and heavier burdens (Fedigan, 1986, p. 49). Recent data even suggest that our hominid ancestors had no home bases (Potts, 1984), making untenable a house-bound vision of early women (Fedigan, 1986, p. 60).

Moreover, according to sociobiological theory, heavy maternal investment in offspring implies that it was females rather than males who chose mates. Burdened by dependent offspring, females must have chosen sociable males willing to share food and

⁴ Lovejoy's (1981) theory, the best known, sees the central adaptation in human evolution as male provisioning of sedentary, fecund, monogamous females (Fedigan, 1986, p. 62).

protect them and their babies, turning around the older picture in which dominant males pick females who, in turn, try to remain attractive enough to secure a mate, food, protection, and offspring (Zihlman, 1981, p. 88).

Sociobiology clearly cuts more than one way with regard to theories of sex inequality. If early women were not "house-bound," waiting for their men to supply food for them and their children, how could the domestic responsibilities of women derive from nature? Although its accuracy has never been debated, the assumption that it is natural for women to be found at the hearth still undergirds most theories of human social evolution. Perhaps, as Fedigan (1986, p. 38) suggests, the only division of labor in which sex matters is the one that involves insemination, gestation, and lactation.

In the following paragraph, I discuss human adaptations based on hunting and gathering, the hoe, herding, and the plow. The analysis is based on two principles of stratification. First, a necessary condition for gender equality is that women must be economically interdependent with other producers rather than dependent on male producers (Fedigan, 1986, p. 43; Leacock, 1981). The second, Friedl's (1975) modification of the first, suggests a sufficient condition: women must not only contribute to subsistence but also exercise control over the distribution of valued goods in order to equal men in power and prestige. In sum, producers have more power and prestige than consumers and in any society those who control the distribution of valued goods beyond the family have the most power and prestige.

3. HUNTING AND GATHERING SOCIETIES

Hunting and gathering comprise a way of life that resembles the technological adaptation of all *Homo sapiens* before the domestication of plants and animals about 10,000 years ago (Friedl, 1975, p. 12). Forager groups are small (about 50 persons), mobile, and nonterritorial, which constrains the accrual of a surplus and leads to an egalitarian emphasis on sharing resources (Lee & DeVore, 1968). The few peoples for whom foraging remains a major source of food today occupy land no one else wants (yet): African and South American rain forest, Arctic tundra, and Australian desert (Spielman & Eder, 1994, p. 311).

Foragers use several methods to obtain most of their food: gathering wild plants and small animals such as mice or clams; hunting large animals such as deer, caribou, whales, or seal; and fishing. Meat is always a favored food (Friedl, 1975, p. 12). Correlated with latitude, the amount in the diet ranges from 10% near the equator to 90% in the Arctic (Testart, 1978, cited in Fedigan, 1986, p. 48).

By consensus, foraging societies exhibit the least social inequality. Whether they are truly or only relatively so has been debated (Flanagan, 1989, p. 254). Feminist scholars tried to document the absence of sex inequality to prove that inequality did not derive from nature (Collier & Yanigasako, 1987); Marxists hoped to show that in the absence of private property, equality prevails (Leacock, 1981; Sacks, 1982). However, most anthropologists see social inequality as universal; all known societies use criteria of sex, age, and personal attributes in allocating power (Sahlins, 1958, p. 1).

Hunter-gatherer subsistence ensures a low level of inequality because foragers, who move when the food supply in a given area is depleted, own only what they can carry. They highly value sharing, which reduces the risks of living in groups that cannot readily

buffer a variable environment (Cashden, 1980, p. 117). All foraging societies have rules that order the sharing of meat; the ones that survived were those that found ways to encourage the fulfillment of exchange obligations (Friedl, 1975, p. 20).

On average, women's contribution to foragers' food supply more or less equals men's, which leads to women's being seen as self-sufficient rather than to higher status (Schlegel & Barry, 1986; Sanday, 1973). Gathering produces only enough food for a woman and her family. Hunters earn esteem as generous hosts because hunting enables men to distribute a highly valued food to the entire band (Friedl, 1975).

Both men and women can master the needed skills, so why did women never hunt?⁵ Friedl (1975, p. 16) suggests that the answer lies in a complex of interdependent conditions related to childbearing. To offset the effects of high death rates, women foragers are often pregnant or lactating. They are barred from hunting in the later stages of pregnancy by shifts in body balance; after the birth, by the burden of the child, which must remain with its mother while it is breastfed. Although food supplements are added at 1 to 6 months in all preindustrial cultures (Raphael & Davis, 1985, p. 141), lactation occupies 3 to 4 years because shorter periods tend to increase infant mortality (Cronk, 1991, p. 28). Hunting also requires distance running, which may affect ability to ovulate (Graham, 1985).

Although anthropologists traditionally have explained marriage as a male-female bond occasioned by the food needs of a female with dependents (Ember & Ember, 1983, p. 41), it is perhaps better seen as a way to recruit labor, distribute food, and provide for procreation and sexual pleasure (Friedl, 1975, p. 23). Among foragers, monogamy was the most common form. On average, a hunter typically lacked enough meat at any one time to care for more than one set of marital, paternal, and affinal obligations (Friedl, 1975, p. 26).

War is rare among foragers. Population is sparse and land is plentiful. Conflicts within bands are often settled by the departure of one party in a dispute, and women are often involved in the decision (Friedl, 1975, p. 15). Leadership roles are limited to the persuasive influence of skilled hunters, to women skillful enough to attract their married offspring to live with them as adults, and to men and women with shamanistic skills. No leader can coerce others (Friedl, 1975, p. 31). Male dominance is greatest when hunting is the sole source of food; equality is greatest where men and women together perform the major subsistence tasks.

4. HORTICULTURAL SOCIETIES

Horticulture, plant cultivation with digging stick or hoe in garden-size plots, began in Asia Minor about 10,000 years ago. It marked the beginnings of modern stratification. Boserup (1965), reversing Malthus, suggests that population pressure, driven by the need to feed more individuals, causes rather than follows intensification of cultivation. In the simple form the major subsistence tool is a digging stick. People had to move every few years to replace plots whose fertility was lost.

The advanced form of horticulture appeared about 6000 years ago with the invention of metallurgy. The hoe replaced the digging stick while metal weapons replaced sticks and stones. Because humans can be hurt more easily with metal weapons than with sticks

⁵ Well, hardly ever. In Northern Luzon, Agta women always took part in hunting (Estioko-Griffin, 1985).

and stones, war for the first time became a profitable way to acquire food produced by someone else (Lenski, 1970). The effect on gender stratification was profound because everywhere war is men's work, associated with the devaluation of women (Hayden, 1995, p. 63).

The use of metal weapons to secure food requires a third principle of gender stratification that concerns the use of force: The more often a society engages in warfare, the more likely is social control to be vested in politico-military elites that exclude women (see Collins, 1988, p. 168-173).

Hoe societies, which exemplify the gender role diversity that provided the foundation for the relativist view of human beliefs and behaviors made popular by Boas and his students, vary in patterns of domestic exchange, postmarital residence, and household composition. The crucial variable is the control of economic resources, especially labor. The question is, which sex can command the labor of others and control the distribution of the resulting accumulation (Friedl, 1975, p. 61)?

The gender division of labor takes three forms. Men can prepare land for cultivation (felling trees, cutting and burning underbrush) while both sexes cultivate it, a pattern common to sub-Saharan Africa. Men can clear land and women cultivate it, a pattern among Indians of the eastern United States. Men can both clear and cultivate, a rare pattern found in inland tropical south America (Friedl, 1975, p. 51).

Once the land is cleared, there is no adaptive advantage in having either men or women plant, weed, harvest, and transport crops. Lactating women can carry babies and return with loads of food as women gatherers do. The time and energy women spend on childcare are allocated under the constraints posed by their work, not the other way round. For example, early supplementary feeding of infants is more likely if women do much subsistence work (Nerlove, 1974). Norms concerning family size and systems of childcare typically conform to women's customary work requirements (Blumberg, 1978; Chafetz, 1984; Friedl, 1975; Mukhopadhyay & Higgins, 1988, p. 475; Quinn, 1977, p. 193). According to cross-cultural time allocation studies, women simply add childcare to their other tasks (Zihlman, 1997, p. 194).

In simple hoe societies the sexual division of labor consists of the male monopoly over the initial clearing of new land (Friedl, 1975, pp. 53-60). Once or twice a generation the land to be cleared lies next to land worked by other peoples, leading to warfare. A potential need for defense in the acquisition of new territory probably contributed to making the slash-and-burn process largely men's work, although land-clearing probably fails to confer the advantages that the monopoly on hunting gives forager men.

In both simple and advanced hoe societies, marriage and kinship customs tend to follow the division of labor (Friedl, 1975). Unilateral reckoning of descent is most common in hoe societies, perhaps because women sometimes produce more food than do men. Patrilineality tends to occur when both spouses cultivate. Matrilineality is found in about a quarter of hoe societies, usually when only women cultivate. Matrilineal inheritance tends to occur when women produce more than do men (Goody, 1976).

Patrilocality (postmarital residence with husband's kin) tends to occur when the male contribution to subsistence is high. It disadvantages the wife although she can compensate by bearing sons whose wives she can later dominate. Wives also can become the worms within the apple of a patrilocal domestic group (Collier, 1974, p. 92). Working together separated from kin tends to integrate them as a group and gives them a measure of power (Leis, 1974). Matrilocality typically occurs where female contribution to subsistence is high. The infrequency with which patterns of residence leave related women

together and disperse related men, rather than vice versa, helps to explain why the degree of political influence exercised by Iroquois women is found in few societies (Quinn, 1977, p. 214).

The divorce rate should increase as women's share of subsistence tasks rises because couples can more easily part when it affects the food supply of neither of the spouses nor their children. Although data are sketchy, this expectation is upheld: divorce rates among hoe peoples appear high compared to U.S. rates (Friedl, 1975, p. 93).

Because warfare is common and women's subsistence contribution is also high, polygyny occurs more often in advanced hoe societies than in all other types. Warfare enhances male political control because men's service as warriors strengthens their control on rights of citizenship (Grant, 1991, p. 14). War also alters the sex ratio (Ember, 1974).⁶ Under such conditions, polygyny is a way to raise productivity, as economist Ester Boserup (1970) first noted (Lesthaeghe & Surkyn, 1988) and it is widely practiced in a populist form (Huber & Spitze, 1988, p. 488). Nearly everyone marries but women marry early, men late, and a high death rate helps to even the sex ratio. Male incentives to practice polygyny lie not in the desire to collect women but in the need for children's labor (Ember & Ember, 1983, p. 13). Women's incentives likewise derive from their need for children's labor, especially for support in old age.

Warfare affects sex stratification more generally through its close ties with governance (Goldschmidt, 1959, p. 166). The requirements of waging war encourage the establishment of autocratic and hierarchical political organizations and the formation of politico-military elites in which women play no part. Among ordinary men, the presence of an outside enemy, real or imagined, stimulates solidarity and promotes the exclusion of women from political life (Rose, 1986, p. 852). In turn, exclusion from political life leads to lack of control over property. Goheen (1996, p. 137), for example, recounts how Cameroon men's earlier status as hunters and warriors led to the need for women to seek men's permission to cultivate, giving rise to the saying that men own the fields, women own the crops. By contrast, in a rare instance of women's full participation in warfare (among the Fon in Dahomey), women's political activity was also high and they could control property (Ross, 1986, p. 852; see also Collins, 1985, p. 390).

Why do women so rarely take part in organized violence? The male monopoly is often attributed to their relative strength and size within (but not across) populations and to greater aggressiveness, but such explanations pose problems. Larger, stronger males do not generally dominate shorter, weaker ones (Chafetz, 1984, p. 118); adult dominance derives from diverse social talents (flattery, deception, competence, nurturance). Interpersonal aggression may be detrimental to effective leadership (Maccoby & Jacklin, 1974, p. 274).⁷

More than 20 years ago Friedl (1975, p. 57) suggested that the male monopoly on warfare resulted from men's relative expendability in population maintenance, but scholars gave this proposal little attention either before or during the decade 1977-1987 (Mukhopadhyay & Higgins, 1988, p. 470) nor have I located research on this topic conducted after 1987. However, Friedl's conjecture makes sense. In the preindustrial reproductive cycle the most frequent states are pregnancy and lactation (Harrell, 1981). How-

⁶ Harris (1981) sees female infanticide as the cause of frequent warfare over women but Ember and Ember (1994, p. 186) note that HRAF data fail to support his claim that this practice actually makes women scarce.

⁷ Whether men's greater verbal aggressiveness is Western or pancultural has not been studied (Quinn, 1977, p. 190).

ever, pregnancy reduces combat effectiveness; depriving a suckling of nourishment reduces its chances of survival. The real costs of sending pregnant and lactating women off to war are obvious.

5. HERDING SOCIETIES

Herding and hoe societies appeared in the same time period; animals were domesticated at about the same time as plants. Pastoral economies cover the technological range of hoe and simple plow societies in areas where tillage is hard owing to mountainous terrain, short growing season, or low rainfall as in central Asia, Arabia, North Africa, parts of Europe, and sub-Saharan Africa (Lenski & Lenski, 1978, p. 235). Small-scale use of hoe or plow may occur. As explained in the section on plow societies, the herders' level of living often exceeds that of peasants (Krader, 1968, p. 458). Moreover, owing to historical accident, herding societies uniquely influenced the modern world when the gender norms of ancient Hebrew herders became embedded in law and custom across much of Eurasia and North Africa owing to the political and military victories of Christian and Muslim conquerors.

Ecology matters. Moving livestock to seasonal pastures to convert grass into human food usually requires a nomadic or seminomadic way of life. In turn, the use of spatial mobility as a survival strategy leads to competition with agrarians over territory and disputes over water and stolen animals (Beck, 1978, p. 352). Constant threat of conflict during migration stimulates growth and consolidation of political authority. Men of courage are prized as warfare becomes culturally attractive (Barfield, 1994, p. 161).

Because the open grasslands where most herders live pose few barriers to movement and political consolidation, herding societies may be huge (e.g., the empire of Ghenghis Khan) but their communities are only a little larger than foragers' because effective maintenance of herds is best done in small units and the food supply is limited (Beck, 1978, p. 352). In the ninth century BCE, Asian herders learned to ride their horses, which gave them great advantage over less mobile agrarians in ensuing waves of conquest. Herding groups repeatedly devastated Eurasian agrarian empires over a period of more than 2500 years (Lenski & Lenski, 1978, pp. 237–318.)

Generalizing about sex inequality in herding societies is risky because many of them also depend on hoe or plow (which oppositely affect women's economic productivity) and also for lack of data. A careful study of how men and women in any nomadic pastoral society influence decisions on resource allocation has yet to be made. The study of nomads was undoubtedly spurred by romantic stereotypes of fierce and independent peoples but all virtues were defined as male and the role of women was grossly neglected until after 1970 (Dyson-Hudson & Dyson-Hudson, 1980, p. 15ff).

The value placed on a politico-military elite should result in a fairly high level of inequality among men and between men and women. Herding societies are most likely to require patrilineal residence and have hereditary slavery (Lenski & Lenski, 1978, p. 237). Women are excluded from the most important subsistence tasks, a result, according to Evans-Pritchard (1965, p. 50), of their lack of experience in warfare and the diplomacy needed to settle disputes at water holes, their lesser physical strength, and herders' need to be away from home for long periods (Elam, 1973, p. 46).

The practice of polygyny in herding regimes depends on the extent to which ecological conditions permit only herding or also permit use of hoe or plow. Polygyny is rare

when the environment (as in central Asia) neither offers men much chance to become rich nor women to become economically active but it may increase when an encounter with a market society gives women an opening such as carpet-making (Barfield, 1981, p. 79). If use of the hoe gives women economic opportunities, as often happens in East Africa, polygyny may be fairly common (Hakansson, 1988), appearing in the populist form common to advanced hoe societies. If the plow is used in conjunction with herding, as in North Africa, some men may become rich enough to marry more than one wife. Women then may be barred from property inheritance, although Islamic law forbids it. For example, Libyan Bedouins know it is against religious law to exclude women from inheritance but they also know that the uncontrolled alienation of property would destroy the basis of corporate life (Peters, 1978, p. 324).

6. AGRARIAN SOCIETIES

Simple agrarian societies appeared in the Middle East about 3000 BCE with the introduction of a wooden plow, probably as a result of population pressure. Techniques to smelt iron, invented about 2000 years later, provided an iron blade and marked the advent of advanced agrarian societies. Warfare became more widespread. Unlike tin and copper, iron is a common metal, which thus permits a great proliferation of weaponry.

Use of the plow spread from the Middle East until agrarian societies covered most of Asia, Europe, and North Africa.⁸ Boserup's key insight was that people do not turn the earth, fodder animals, and collect manure unless they must (Netting, 1993, p. 103). With low population density and shifting tillage, women do most of the work with handheld tools; polygyny was a way to increase production. With high population density and settled agriculture, men do most of the work; women become economic liabilities, in need of a dowry as a basis for their support (Boserup, 1970, p. 35).

The most obvious effect of the plow was a vast increase in the food supply. Use of the plow made continuous cultivation possible for the first time by reducing weeds and turning soil deeply enough to restore fertility. It stimulated the domestication of draft animals. Confining them in stalls to prevent their wandering away encouraged the collection of manure to fertilize the fields. The invention of writing soon followed (the better to keep track of a surplus large enough to be stored) as did the beginnings of empire building (Lenski & Lenski, 1978, p. 177).

Eurasian stratification patterns assumed the pyramidal form common to feudalism: a political and economic elite; a sprinkling of merchants, artisans, and craft workers of lesser rank; and swarms of peasants, serfs, and slaves. The plow had a devastating effect on the lives of ordinary people. A food surplus in the countryside coupled with the availability of iron weapons tempted elites to extract as much as possible from impoverished peasants. The flatter and richer the land, the worse off were ordinary people, probably much worse off than were their forager ancestors (Lenski & Lenski, 1978, p. 206). In addition, oral health and skeletal robustness declined as a result of consumption of too many carbohydrates and reduced physical activity (Larsen, 1995).

Yet the plow depressed women's status more than men's. First, because men monopolized it, women's share of food production plummeted. With oxen, a man could plow

⁸ The plow was rarely used in sub-Saharan Africa until the 1900s. Oxen, the best draft animals, do not thrive in Central Africa's humid tse-tse zones or in West African coastal zones (Shipton, 1994, p. 357).

in a day an area far larger than a woman could till by hoe (Childe, 1951, p. 100). The plow required the management of heavy draft animals in larger fields further from home, making it hard to arrange a schedule to suit a nursing baby (Blumberg, 1978, p. 50). The less food women produce, the more they are valued only as mothers (Goody, 1976, p. 34).

Second, plow technology makes land the chief form of wealth because a field can be tilled in perpetuity. Coupled with the huge increase in productivity and the specialization that this permits, land becomes a scarce good (Goody, 1976, p. 97). Individual land ownership gives rise to laws and customs that reflect elite men's monopoly on warfare and related political and economic institutions. Women can inherit land (see later) but typically exert little control over it (Agarwal, 1994).

The reason that land ownership so changes law and custom is that land is an impartible inheritance (unlike cattle, for example). A given piece under given technology supports only a given number of persons. Rule and custom come to ensure inheritance patterns that prevent land from being overly subdivided. The scarcer it becomes and the more intensively it is used, the greater the tendency to retain it in the nuclear family, the basic unit of production and reproduction (Goody, 1976, p. 97). Monogamy prevails lest land be dispersed among too many legal heirs, and divorce becomes difficult or impossible. The concern with women's sexual purity stems from their status as transmitters of male property. The larger her endowment, the more her behavior is controlled (Goody, 1976, p. 14). Infibulation and footbinding, for example, began as ways to ensure imperial men's exclusive access to consorts. Both practices elicited a competitive upward flow of women and downward flow of self-enforcing customs that were maintained by interdependent needs on the marriage market. Women needed resources and men needed certain knowledge of paternity (Mackie, 1996).⁹

If land is so valuable, why are women permitted to inherit it? Why does bilateral inheritance prevail in agrarian societies? The answer is that the greater volume of production that the plow affords can support an elaborate division of labor and a variety of lifestyle. If an elite male is to maintain his own and his children's style of life, he must marry a similarly endowed spouse, which is an incentive to establish a bilateral inheritance system (Goody, 1976). The political institutions that permitted elite males to control their wives' property later expand to include a broader segment of the male population.

Different strategies of heirship in sub-Saharan hoe societies and Eurasian plow societies stem from the respective value of land (Goody, 1976, p. 97). In Africa, economic differences among families are minor, land is plentiful, and there less pressure to provide an heir to an estate (Goody & Tambiah, 1973, p. 22). A daughter's marriage little affects her economic position because women, married or not, grow crops or do craft work. A daughter needs no endowment to maintain her status. In Eurasia, a man provides for his sons at his death and for his daughters by dowry at marriage lest family status decline in the social hierarchy.

Thus, women's economic contribution to subsistence declines with the introduction of the plow while powerful elites come to control a vastly increased surplus. Both women and men may inherit property but men control that of their wives. Women's sexual behavior is constrained to ensure that only her husband's children inherit his property. In effect, use of the plow puts women under guardianship of husbands or male relatives.

⁹ With such powerful incentives as the need to ensure one's subsistence, people come to accept customs that otherwise do them much harm. Thus, Chinese women objected when footbinding was forbidden (Levy, 1966, p. 210), clitoridectomy came to play a part in Kenyan women's authority structure (Robertson, 1996), and the high-heeled shoe remains popular among women in the West.

7. THE MODERN WORLD

Urbanization began relatively late in northern Europe. In technology, Europe was then nearly a millennium behind China, which was probably the main reason why a revolutionary industrial technology could be introduced in so short a time (Boserup, 1981, p. 101),¹⁰ altering patterns of population maintenance, subsistence work, and warfare. Infant mortality and fertility decline; by 1910 safe methods of artificial feeding end a baby's dependence on a lactating woman for survival (Huber, 1990). Education becomes universal, for the modern labor market requires workers whose qualifications are independent of ascribed characteristics (Jackson, 1984; Marwell, 1975). Warfare requires more brains, less brawn. These events spawn social movements that spur the changes in gendered behavior, belief, law, and custom (Chafetz & Dworkin, 1986) that comprise the theme of this handbook.

8. CONCLUSION

To assess the effects of subsistence technology on sex inequality, I analyze its interrelationships with patterns of population maintenance and politico-military institutions in premodern societies. Three principles of stratification guide the chapter: producers have more power than consumers, those who control the distribution of valued goods beyond the family have the most power, and the more often a society makes war, the more likely is social control to be vested in politico-military elites that include no women. The subsistence modes examined are those of foraging, hoe, herding, and plow. The basic question concerns the relationship of women's monopoly on childbearing to men's monopoly on politico-military affairs. Can women's absence from the arena where rules are made be a result of female centrality in population maintenance?

Both in hunting and gathering and simple hoe cultures, women contribute heavily to subsistence. War is rare, for weapons are inefficient, people are few, land is plentiful. The level of social and gender inequality is low.

Women's economic contribution is also high in advanced hoe cultures but warfare becomes common when the invention of metallurgy improves weaponry, spurring the formation of politico-military elites that include no women because, to offset high death rates, they are so often pregnant or lactating in prime years. It is the invention of metallurgy that makes warriors and political leaders only of men.

Herding limits women's productivity while conflict over water rights and animal theft makes warfare central. Controls on women's behavior tend to moderate if the hoe is also used because women then contribute to subsistence. If the plow is the auxiliary subsistence tool, male elites can acquire many wives, secluding them at little cost for they contribute little to subsistence.

With the plow, women's economic contribution declines sharply from earlier levels while increased productivity and more effective weapons provide incentives for warfare. By making land the chief form of wealth, the plow spurs the emergence of laws and customs that benefit male elites and disadvantage women even more than ordinary men.

¹⁰ Goody (1996b), unlike Marx and Weber, holds that dominant groups were similarly organized across Eurasia because they faced similar problems in managing resources. The uniqueness of the West requires no explanation. There is nothing to explain.

This chapter thus suggests (but falls short of proving) that it is the institutionalizing of warfare in advanced hoe cultures that first brings about women's absence from huts or halls of power. After the plow makes land the chief form of wealth, the institution of private property intensifies the effects of men's monopoly on warfare. Even with an ideology of sex equality, the Soviet Union's abolition of private property could not overcome the effects of militarism.

Population maintenance no longer requires serial pregnancy and lactation. Work and warfare require extensive training. Unsurprisingly, women's military participation is rising. The big increase in the number of women in U.S. services came in the 1970s when the draft ended and a volunteer force was created (Holm, 1992, pp. 246–259). The contentious issue today, first made salient by the industrial revolution, is women's service in combat (Goldman, 1982, p. 4). After the 1970s, a majority came to approve some combat roles for women (Peach, 1996, p. 186). Given the potential of biological, chemical, and nuclear warfare, barring women from combat hardly ensures their survival (Segal, 1982, p. 281). Excluding women from combat simply limits their promotion opportunities and access to job training, education, retirement benefits, medical care, low-cost insurance, bonuses, loans, and state and federal employment preferences (Peach, 1996, p. 175).

The idea that sex inequality results from the interaction of work, war, and childbearing is based on a survey of a literature that would repay further study despite its lack of attention to women as political actors (Ross, 1986, p. 54). Such studies of relatively isolated premodern societies conducted earlier need to be integrated with the current work of anthropologists, economists, and sociologists on regions that harbor a mix of premodern subsistence and modern industrial technologies. How do the interrelations of work, war, and childbearing change when an isolated premodern society is pulled into the vortex of the world political economy? How do the findings speak to theories of sex inequality? Let the work begin.

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