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Maternal Sentiments

How Strong Are They?

by Arthur P. Wolf

It has long been assumed, by scientists and laymen alike, that mothers "naturally" bond with their children and find it painful to part with them if forced to do so. This assumption is challenged here with evidence showing that in Taiwan women willingly gave away the great majority of their daughters as infants or small children. They did so as part of a strategy for securing their own future, but they were not compelled to so by poverty or by their mothers-in-law. Under certain conditions the probability that a daughter would be given away exceeded .9.

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Can a woman forget her sucking child, that she should not have compassion on the son of her womb? Yea, they may forget . . .

Isaiah 49:15

Until the middle of the last century women in large parts of South China gave away their daughters as infants or small children and reared in their places wives for their sons. In many communities in northern Taiwan, northern Kwangtung, southern Kiangsi, and the mountainous interior of Fukien marriages so arranged—I call them "minor marriages"—constituted more than half of all first marriages. A report drafted circa 1910 as part of an official survey of customary law put the frequency in Sung-ch'ang County in northwestern Fukien at "eight or nine of every ten marriages" (Supreme Court of the Republic of China 1918:1525). Another report published in 1951 as part of the Marriage Reform Campaign claimed that 80% of the women in some villages in Feng-shun County in northern Kwangtung had been raised for minor marriages (*Nan-fang Erh-pao*, December 7, 1951). The best evidence comes from northern Taiwan and the Pescadores Islands, where minor marriages accounted for 30–40% of first marriages in most rural locations (see Chuang and Wolf 1995).

In previous work (see Wolf and Huang 1985 and Wolf 1995) I have examined the behavior of couples married in the minor fashion to test Edward Westermarck's (1922, vol. 3: 192) contention that "there is a remarkable absence of erotic feelings between persons living together from early childhood." In this paper I look at another side of minor marriages to evaluate claims about another aspect of human kinship—what I will call "maternal sentiments." Wherever minor marriages were common, women gave away most of their female children as infants or toddlers. The 1951 report claiming 80% in some villages in northern Kwangtung may be an exggeration, but we will see later that close to 70% was common in villages in northern Taiwan. Was this because, as the wives of poor tenant farmers, many women were forced by poverty to give away their daughters so as to be better able to care for their sons? Or was it because, as junior members of households ruled by their husbands' parents, many women were forced by their parents-in-law to get rid of "useless girls"? I will argue for another possibility—that maternal sentiments are not as compelling as they are commonly reputed to be.

One could begin a paper like this almost anywhere in the history of Western social thought. David Hume, Adam Smith, Adam Ferguson, Jean-Jacques Rousseau, Herbert Spencer, Charles Darwin, and, of course, Sigmund Freud all held pronounced views about the bond between mother and child. I will begin with Edward Westermarck because his views on maternal sentiments closely parallel his views on incest avoidance and thus encourage a comparison of the two sets of sentiments that are commonly seen as the basis of the human family. Most biologists and many anthropologists now accept that the evidence from Israel and Taiwan shows that

Westermarck was right about the origins of incest avoidance (see Talmon 1964, Shepher 1971, and Wolf 1995). The question posed here is whether he was also right about the origins of maternal sentiments.

Westermarck (1922, vol. 2: 188) argued that what he sometimes called "the maternal instinct" owed its origin "to the survival of the fittest, to the natural selection of useful spontaneous variation." But he also argued that the sentiments subsumed under this term "cannot in their simplest forms be based on knowledge of blood relationships" (p. 205). Instead, like the sentiments responsible for incest avoidance, they depend on close association during a particular developmental phase. His views were expressed most clearly in responding to Herbert Spencer's (1898:623–24) contention that "the parental instinct" is not "shown only in a creature's attachment to his or her offspring" but shown whenever a person encounters "relative weakness or helplessness." Westermarck (1926:28–29) argued in response that Spencer's theory failed to explain "the indisputable fact that there is a difference between maternal love and the mere love of the helpless":

> Even in a gregarious species mothers make a distinction between their own offspring and other young. To account for the maternal sentiment we must therefore assume the existence of some other stimulus besides the signs of helplessness, which produces, or at least strengthens, the instinctive motor response in the mother. This stimulus, so far as I can see, is rooted in the external relationship in which the helpless offspring from the beginning stand to the mother, being in close proximity to her from their tenderest age.

Although Westermarck never developed this argument further (despite repeating it several times), his position is clear enough. Just as the dangers of inbreeding have selected for something that gives early association the ability to inhibit sexual attraction, so the dangers of infancy have selected for something that gives prolonged proximity the power to arouse maternal solicitude. The argument assigns honorable places to both the evolutionary constituents of human nature and the environmental contingencies with which humans have to contend. It does not say that women are so constituted that they automatically lavish care on their own or anyone else's infants. It says that they are so constituted that they typically exert themselves to care for any infant with whom they are in "close proximity from . . . [its] tenderest age."

Westermarck's account of maternal sentiments clearly anticipates the better-known and far more influential accounts of John Bowlby and Sarah Hrdy. Bowlby (1988: 165) argued, as did Westermarck, that "the occurrence of altruistic care of young is readily understood since it serves to promote the survival of offspring . . . and thereby the individual's own genes." The difference is that Bowlby largely ignored the possibility that what he called "caregiving" is a contingent behavior dependent on close proximity between mother and child during a particular sensitive period. In his later publications on the subject he treated caregiving as though it were instinctual or nearly so: "Parenting behavior is, like attachment behavior, . . . in some degree programmed" (1984:271). In *A Secure Base* he characterized caregiving as a "major component of human nature" (1988:165). He seems to have assumed that except for women whose own development has been abnormal, caregiving is guaranteed with a contract written by natural selection.

Bowlby's views have given rise to a school of psychology that takes maternal sentiments to "be as strong as any an individual experiences in his or her lifetime." According to Jude Cassidy (1999:11), "The birth of a first child (which establishes the adult as a parent) is often accompanied by feelings of great joy; threats to the child are accompanied by anxiety; the death of a child brings profound grief." The ultimate source of these emotions is said to be their ability to enhance reproductive success, their immediate source a kind of biological priming entailed by pregnancy, birth, and lactation. The contributors to the recent *Handbook of Attachment* cite numerous studies to suggest that the transition to parenthood is accompanied by intense hormonal and neurological changes that make women acutely sensitive to the needs of their infants (see, for example, George and Solomon 1999).

Hrdy writes in what she calls "the post-Bowlby era." In her view there is nothing automatic or instinctual about a mother's response to her newborn infant. At birth maternal commitment is always contingent: "Unconditional commitment to her infant, irrespective of its sex or other physical attributes, is one of the key differences between monkey and ape mothers and human ones" (1999:179). Unlike monkey and ape mothers, human mothers are both discriminating and calculating. They examine their newborn infants closely for physical defects and signs of poor health, and they carefully consider whether conditions are right for investing in another child. They decide to invest only when they are assured that the child is a good risk and one that they can afford given their other commitments. As Pamela Wells (2000:3) puts it in her review of Hrdy's book, "the dreadful heart of the matter" is that "in a species where the young require fairly intensive care, the survival of at least some of them also requires reproductive discretion." "This," she adds, "is a polite way of saying that decisions are going to have to be made about who should live and who should die."

But Hrdy's larger conception of maternal sentiments is not as far from Westermarck as this summary suggests. She accepts the fact that these sentiments can be induced by hormonal changes effected by childbirth and nursing, and this leads her to qualify her argument to the point that Westermarck could easily claim it as his own. Hrdy (1999:487) writes:

> Time spent with her infant after birth probably does stimulate a mother's desire to continue this rewarding activity. The process of recognizing her baby,

TABLE 1
Probability of Adoption among Females by Year of Birth

Year of Birth	Number of Births	Probability of Adoption				
		By Age 1	By Age 2	By Age 3	By Age 5	By Age 15
1906–10	1,094	.547	.620	.678	.736	.807
1911–15	1,131	.514	.606	.661	.713	.771
1916–20	1,080	.461	.549	.593	.625	.688
1921–25	1,337	.425	.492	.531	.576	.633
1926–30	1,559	.440	.505	.543	.571	.600

learning its smell, and, especially, the initiation of lactation, change a mother's physiological state. By several days after birth there is an emerging relationship between mother and infant. It would be difficult for a mother who has allowed herself to grow close to a baby to change course at that point. This is why close physical contact right after birth reduces the likelihood that *mothers at risk for distancing themselves from their baby* will do so . . . .

The result is that "across primates, including humans, whenever mothers abandon babies, they almost invariably do so within the first seventy-two hours. . . . This does not necessarily mean that there is a critical period right after birth during which mothers must bond or else. Rather, what it suggests is that close proximity between mother and infant during this period produces feelings in the mother that make abandonment unbearable" (p. 316). "Even when circumstances remain grim," Hrdy writes (p. 315), "extended contact between mother and infant (especially if the mother is breast-feeding) can elicit emotions that undermine the strongest practical resolve."

For Bowlby, all it takes to arouse maternal sentiments in a normal woman is the experience of pregnancy and birth. For Hrdy, this experience is a neither a necessary condition nor a sufficient one. A woman may become attached to a child she has not borne (see Hrdy 1999: 497–508), and she will become attached to one she has borne only if she is convinced that the child is a good risk for a person in her circumstances. But if she is convinced and begins nursing the child, her initial calculating attitude is overwhelmed by sentimental attachment. The differences between Bowlby and Hrdy and between Westermarck and his successors are substantial, but they nonetheless agree on one important proposition. They are agreed that, prompted by the many dangers threatening the survival of human infants, natural selection has implanted in the female of the species a disposition to bond with her helpless offspring. This disposition is such that once the emotions involved are aroused, breaking the bond is traumatic for the mother as well as for the child.

This is the proposition I question. I do not do so because I reject the Darwinian assumptions on which it is based. I have devoted a large part of my career to showing that these assumptions are necessary to explain incest avoidance. I only question this particular proposition, and I do so only because the evidence I have accumulated during my work on incest avoidance cannot be made to conform to the generalization. The evidence says that, as they now stand, the views advocated by Westermarck, Bowlby, and Hrdy are all wrong. The basis of this iconoclastic conclusion is the behavior of the women living in 11 villages and 2 small towns in northern Taiwan in the years 1905–45.[1] These are the same women whose behavior I have used to resurrect Westermarck's claim that childhood association inhibits sexual attraction. In the years 1906–30 these women bore 6,201 female children. Their fate is the subject of this paper.

My point of departure is the figures displayed in table 1. The first line of the table says that among 1,094 girls born between 1906 and 1910 the probability of adoption was .547 by age 1, .620 by age 2, .678 by age 3, .736 by age 5, and an astounding .807 by age 15. After 1910 the probability of adoption gradually declined as the changes initiated by the Japanese occupation began to undermine the traditional Chinese kinship system, but it remained remarkably high by the standards set by adoption rates in other societies. Among the 1,559 girls born in the years 1926–30 the probability of adoption by age 15 was still .600.

The adoption practices of the Taiwanese communities from which my data are drawn were not atypical. Studies by Japanese and Japanese-trained scholars in the 1930s show that a female child's chances of being adopted out of her natal family were as high in other rural communities in northern Taiwan as they were in the Hai-shan region where my subjects lived. In 1929 Yuzuru Okada (1929:8, table 3) found 110 adopted daughters for every 100 daughters in 148 wealthy farm families in Shih-lin (a rural suburb of Taipei City), and in 1941 Michiyoshi Kajiwara (1941:81–83, table 4) found 119 adopted daughters for every 100 daughters in the 839 farm families living in nine northern villages.[2] Chuang Ying-chang and I have since found that adoption rates were much lower in southern Taiwan (Chuang and Wolf 1995), but new evidence suggests that they were even higher in the Pescadores Islands. Preliminary calculations put the prob-

1. My data are drawn from household registers compiled by the Japanese colonial government (see Wolf and Huang 1980:16–33).
2. These and other relevant studies are described in detail in Wolf and Huang (1980).

ability of adoption by age 15 at well above .800 among Pescadores girls born in the years 1906–10.

Hrdy suggests that when mothers abandon babies they almost invariably do so within the first 72 hours. This, in her view, is the calculating mother's window of opportunity; more extensive contact arouses emotions that "undermine practical resolve." It is important to note, then, that while the majority of Taiwanese girls were given away as infants, very few were given away during the first 72 hours. Table 2 shows that adoption rates were very low during the first month following birth, rose sharply during the second month, peaked in the third, fourth, and fifth months, and then gradually declined. This means that the great majority of the Taiwanese women who gave away a child had been caring for her for several months before the adoption. And since infants had to be nursed if they were to survive and wet nurses were a rarity, we can be certain that caring for the child included nursing her. We have to assume that pregnancy, birth, and lactation effected the same hormonal changes among them as among American and European women. How, then, could so many Taiwanese mothers have brought themselves to surrender their infant daughters?

The data displayed in table 3 argue that while they may be a universal reaction to childbirth and lactation, these changes are not always sufficient to counteract the calculating attitude fostered by what Wells calls "reproduction discretion." In Taiwan decisions as to how to dispose of female children appear to have taken little or no account of sentimental attachments. Whether a child was given away largely depended on the composition of the sibling set into which she was born. Girls fortunate enough to have been born into a family with no surviving children were rarely (by local standards) given away as infants. Those unfortunate enough to have been born into a family with five or more surviving children were almost always given away. The most revealing difference was between girls with no older siblings and those with with one older sibling. Among the former the risk of adoption by age 1 was .213; among the latter it was .430 if the older sibling was a girl and .609 if the older sibling was a boy.

The presence of even one older sibling had such a decisive influence on a girl's fate because if they failed to raise a son to marriageable age, Taiwanese families usually arranged an uxorilocal marriage for a daughter and contracted to have her children take their descent from her father. Thus a daughter who was an only child had value as insurance against failure to raise a son. Older parents with no sons might even raise two daughters for this reason, but most later-born girls were considered "useless things." They would only grow up and marry out of the family anyway. As elderly Taiwanese women put it when asked why they gave away most of their daughters, "The girls you bear aren't really yours. They belong to someone else. So why raise them?"

Obviously, the motive for giving daughters away was not only their lack of practical value. It had also to involve some reason for adopting other people's daughters lest the system collapse under the weight of unwanted daughters. This reason was the desire to raise wives for one's sons. How to find wives for their sons was an anxiety-laden problem for most Taiwanese families. Waiting until they reached marriageable age was dangerous because by then the great majority of the girls would have been claimed by other families. Besides, a marriage involving a young adult was an expensive undertaking, usually costing more than most farm families earned in a year. Consequently, the most appealing strategy was to give away one's daughters and raise daughters-in-law in their place. Most men thought that any healthy child would do, but women preferred to adopt an infant "because the girl you nurse yourself will grow up just like a daughter and listen to what you tell her." The result was that most later-born girls were given away as infants to make room for a brother's wife. This is why the probability of adoption by age 1 is highest (.748) among girls born into families with two male children and no female children. These girls were given away by women who had two sons but as yet no daughters-in-law. They needed wives for their sons and wanted to nurse them themselves.

I was well aware of the nature of female adoption in northern Taiwan by the time I published my first accounts of minor marriages 30 years ago. The reason I waited so long to write this paper was that I did not see the challenge it presented to most accounts of maternal sentiments. It appeared to me that there were at least three good explanations for Taiwanese women's giving away the great majority of their female children. The most obvious of the three was the one suggested by

TABLE 2
Probability of Adoption by Age during First Twenty-four Months of Life

Age in Months	Number of Risk Months	Monthly Probability of Adoption
0	5,928	.010
1	5,620	.044
2	5,252	.064
3	4,874	.063
4	4,531	.065
5	4,240	.049
6	4,029	.039
7	3,859	.034
8	3,718	.028
9	3,590	.018
10	3,487	.019
11	3,394	.020
12	3,307	.012
13	3,245	.009
14	3,199	.010
15	3,133	.014
16	3,073	.011
17	3,014	.014
18	2,952	.014
19	2,894	.011
20	2,839	.010
21	2,787	.011
22	2,739	.009
23	2,696	.011

TABLE 3
Probability of Adoption among Females by Number and Sex of Surviving Older Siblings at Birth

Number and Sex of Older Siblings	Number of Births	Probability of Adoption				
		By Age 1	By Age 2	By Age 3	By Age 5	By Age 15
No siblings	1,740	.213	.263	.289	.337	.399
One sister	808	.430	.501	.557	.607	.663
One brother	717	.609	.679	.709	.738	.783
Two sisters	266	.525	.615	.666	.696	.755
One sister, one brother	658	.542	.628	.696	.760	.812
Two brothers	348	.748	.809	.839	.859	.888
Three siblings	783	.634	.718	.764	.806	.844
Four siblings	485	.693	.761	.821	.842	.885
Five or more siblings	396	.708	.778	.804	.829	.850

NOTE: Adopted children are counted as siblings.

Nancy Scheper-Hughes's (1992:342–43) account of "benign neglect" in a Brazilian shantytown. She found that it was easier to rescue children from premature death due to diarrhea and dehydration than it was "to enlist mothers themselves in the rescue of a child they perceived as ill-fated for life or as better off dead." The reason, she argues, was poverty. "These are not 'ordinary' lives I am describing. Rather, they are often short, violent, and hungry lives."

Although it would be an exaggeration to characterize the lives of my Taiwanese subjects as "short, violent, and hungry," the great majority of them were poor and some miserably so. They were the wives of coolies, cart-pullers, farm laborers, and rent-racked tenant farmers. Consequently, I assumed that they gave away their daughters out of necessity and despite sentimental attachment. For them, it was a choice between raising boys who would support them in their old age and raising girls who were "useless" because they had to marry out of the family and devote themselves to their husbands' parents. Thus I saw no reason to think that their behavior called into question current accounts of maternal sentiments.

I was therefore more than a little surprised when, many years into my work on minor marriages, I obtained the information needed to calculate the figures displayed in table 4. They show that, contrary to my expectations, wealthy families were as likely to give away their daughters as poor families. The only substantial difference was that wealthy parents took the decision earlier than poor ones. Among the 2,862 girls born into the poorest families in my communities—those who paid no land tax because they had no land—the probability of adoption was .446 by age 1 and .684 by age 15. Among the 467 girls born into the wealthiest families in these communities—those who paid a land tax of 30 or more yen—the probability of adoption was .508 by age 1 and .628 by age 15.

There is substantial evidence that wealthy Chinese couples produced more children than poor Chinese couples. Indeed, I have shown that as long as the wife was not raised in her husband's family, this was true among the parents of the children included in this study (Wolf 1984:290, table 17.6). Might it not be, then, that the figures for the wealthy families in table 4 are biased upwards? In other words, might it not be that if we took account of the number of surviving children the difference between the wealthy and the poor would not be as great as the data shown in table 4 suggest? Table 5 addresses this possibility and rejects it. Again we see that while the probability of adoption by age 15 was somewhat lower among the wealthy than among the poor, the probability of adoption by age 1 was consistently higher. Regardless of how many children her parents had, a girl born into a wealthy family was more likely to be given away as an infant than a girl born into a poor family.

What I call "wealthy families" were not the elite of Taiwanese society. They were rural landlords, well-to-do shopkeepers, a few bureaucrats, and a substantial number of what the Chinese Communists called "rich peasants." They did not live in mansions with artificial lakes and decorative gardens, but they had the resources needed to raise their daughters if they wanted to do so. The fact that they gave away two-thirds of them as infants cannot be attributed to hard necessity. It can only mean that the sentiments aroused by pregnancy and nursing were rarely strong enough to resist practical considerations. Among the wealthy this can only have been the thought that there was no point in investing resources in a child who would leave the family as a young adult. In the words of one old man, "Raising a daughter is like letting a thief get into the house. You can only lose money raising a daughter."

A second explanation I saw for Taiwanese women's giving away their daughters had to do with the hierarchical nature of the traditional Taiwanese family. The great majority of women of childbearing age lived in families headed by their parents or parents-in-law (see Wolf 1984). The children they bore belonged, by rights guaranteed by the Chinese state, to these senior members of the family (Wolf n.d.), who had the right to treat their grandchildren as resources to be employed to suit the

TABLE 4
Probability of Adoption among Females by Amount of Land Tax Paid by Natal Family at Birth

Land Tax in Yen	Number of Births	Probability of Adoption				
		By Age 1	By Age 2	By Age 3	By Age 5	By Age 15
None	2,862	.446	.531	.580	.627	.684
0.001–0.999	789	.435	.511	.449	.596	.657
1.00–9.99	1,448	.494	.566	.607	.646	.702
10.0–29.9	631	.494	.551	.599	.629	.662
30 or more	467	.508	.547	.581	.601	.628

family's—and, of course, their own—best interests. Most women could influence by one means or another their husbands' decisions regarding their offspring, but few women could resist decisions taken by their parents or parents-in-law. Their authority was absolute in principle and nearly absolute in practice.

Consequently, I assumed, without really inquiring, that many of the women who gave away their infant daughters had been forced to do so. The fact that the adoption rate declined as the changes initiated during the Japanese occupation undermined parental authority seemed to confirm my assumption. Therefore, I was again surprised when I looked more carefully at the evidence. Table 6 shows that women who were freed of parental authority by death or family division were just as likely to give away their daughters as women who were still subject to that authority. In fact, the risk of adoption among girls born into childless families and families with one surviving child was higher with both grandparents absent than with both grandparents present. The reverse was true of children born into families with two or more surviving children, but the advantage for those whose grandparents had been removed was not great. The probability of adoption by age 15 among 1,348 girls with both grandparents absent was still .813. This is no support for the argument that most women gave away their daughters only because they were forced to do so by their parents or parents-in-law.

It could be argued that the influence of grandparents cannot be determined by whether grandparents and parents lived in the same household—that if grandparents did not live with parents in the same household after family division they might still have lived in the same village or in close proximity. This is true, but only if the grandparents were still alive, which most often they were not because division waited on their deaths (Wolf and Chuang 1999). Moreover, even if the grandparents survived division, their influence was greatly weakened when their daughter-in-law acquired her own stove and her own purse. Thus the comparisons shown in table 6 are adequate to rule out the possibility that most women gave away their daughters because they were compelled to do so by their parents-in-law. The majority in the "both absent" condition had no surviving parents-in-law, and those who did were no longer dependent on them.

This leaves the possibility that women were compelled to give their daughters away by their husbands. It has been suggested that in the context of the Chinese patriarchal family adoption was more likely a decision of the father or at least a joint decision of the parents. This was true in theory but not in practice. Chinese ideology gave married men authority over decisions concerning children, but in fact men delegated this authority to their wives. One indication of this is the fact that the go-betweens who arranged adoptions and marriages were almost all women. Another is the fact that the arrangements made clearly served the vested interests of women. As we will see below, minor marriages were a female strategy, one of the ways in which women coped with patriarchy. The fact that the Chinese family was patriarchal does not mean that men controlled all aspects of family life.[3] Chuang Ying-chang and I have shown that many widows were able to delay family division for years beyond their husbands' deaths (1999:395–99).

The third explanation I saw for the Taiwanese women's behavior takes us back to Bowlby. By their own account, many women adopted for minor marriages were traumatized by the experience. They hated their mothers for giving them away, and, despite mistreatment they clung desperately to their future mothers-in-law (see M. Wolf 1972 and A. Wolf 1995). Thus I think that Bowlby would have a ready explanation for why Taiwanese women could bear to give away most of their daughters as infants. It is, he would argue, because *they* had been given away as infants: "The tendency to treat others in the same way that we ourselves have been treated is deep in human nature" (1988:91). Many types of psychological disturbance can be traced to maternal deprivation, but "the most serious" is "the effects on parental behaviour and thereby on the next generation" (p. 37). This can give rise to what Michael Rutter (1981:199) calls "intergenerational cycles of disadvantage," in which the deprivations suffered by one generation are inflicted by them on the next.

Might it not be, then, that the minor marriage system created this kind of intergenerational cycle? By requiring the transfer of brides as infants or small children, the system institutionalized maternal deprivation, creating a population in which the maternal sentiments were poorly developed. If so, the fact that Taiwanese women

3. The view is argued in detail by Margery Wolf (1972). Her informants all lived in the communities covered by this study, and many contribute to the evidence presented.

TABLE 5
Probability of Adoption by Amount of Land Tax and Number of Surviving Siblings at Birth

Tax in Yen and Number of Siblings	Number of Births	Probability of Adoption				
		By Age 1	By Age 2	By Age 3	By Age 5	By Age 15
None						
None	781	.216	.257	.302	.335	.418
One	729	.497	.581	.619	.666	.721
Two	621	.521	.627	.697	.753	.802
Three or more	747	.645	.738	.787	.829	.868
0.001–0.999						
None	240	.228	.272	.277	.334	.382
One	197	.517	.600	.641	.658	.744
Two	150	.491	.553	.609	.666	.738
Three or more	204	.616	.706	.759	.801	.846
1.00–9.99						
None	440	.199	.269	.284	.332	.425
One	350	.511	.577	.636	.682	.730
Two	270	.807	.854	.877	.892	.927
Three or more	385	.719	.788	.826	.852	.877
10.0–29.9						
None	149	.178	.260	.276	.293	.345
One	139	.525	.555	.603	.619	.667
Two	140	.602	.658	.716	.769	.805
Three or more	202	.720	.773	.817	.847	.859
30 or more						
None	129	.237	.246	.266	.275	.306
One	113	.613	.664	.688	.704	.721
Two	93	.616	.683	.712	.740	.760
Three or more	132	.672	.694	.736	.753	.785

NOTE: Adopted children are counted as siblings.

gave away almost all their female children does not challenge traditional views of maternal sentiments. It only says that women who are themselves deprived of committed maternal care as children are not likely to commit themselves to the care of their own children. They are not susceptible to the feelings that make giving a child away nearly impossible for most women.

The mass of evidence collected by Bowlby and his colleagues make this a reasonable alternative. The fact is, however, that it does not stand up any better than the arguments that Taiwanese women gave away their daughters because they were too poor to raise them or because they were forced to do so by their parents or parents-in-law. The data assembled in table 7 say that women who experienced adoption were actually a little *less* likely to give away their daughters than women who had not experienced adoption. The comparison is not pure because the women classified as "not adopted" include a few who were adopted, but their removal would not change the figures substantially.[4] We can safely conclude that a mother's experience of adoption did not influence—let alone decide—her children's fate.

Taiwanese women were not forced to give their daughters away by poverty or their parents-in-law, and they did not give them away because they were emotional cripples as result of having been given away themselves. But what about the other side of the ledger? Perhaps giving one's daughters away had advantages that made it a strategic necessity. Asked why they had given a daughter away, women often told me that it was because they wanted to raise their son's wife. This, in their view, had many advantages. One old women told me, "It is better to raise your son's wife than to get a girl from another family because the girl you raise yourself will listen to what you tell her." Another claimed that "it is good to raise your son's wife because then she won't always be talking to your son behind your back." A third, who had raised all of her daughters-in-law, explained:

> It is always better to raise your son's wife than to get a girl from another family. This is because you can get to know an adopted daughter's disposition better and can correct her without causing a lot of trouble. A girl from another family will always get mad when you try to correct her, and then she will say things to her husband and make trouble between him and his parents.

What comments like these suggest is that giving their daughters away was part of women's strategy for securing their own future. Under the conditions imposed by Chinese patriarchy a woman's security depended in the early years of marriage on her ability to influence her husband and later in life on her ability to influence her sons. Thus, young women and old women, daughters-

4. For an explanation of why I cannot identify all the adopted daughters included in the study see Wolf (1995:273).

TABLE 6
Probability of Adoption among Females by Number of Surviving Older Siblings and Presence/Absence of Grandparents

Number of Siblings and Presence of Grandparents	Number of Births	Probability of Adoption				
		By Age 1	By Age 2	By Age 3	By Age 5	By Age 15
None						
Both absent	306	.260	.302	.315	.349	.418
Grandfather	211	.192	.262	.280	.324	.403
Grandmother	442	.189	.257	.281	.327	.404
Both present	781	.214	.252	.286	.318	.389
One						
Both absent	423	.502	.581	.631	.644	.726
Grandfather	149	.556	.599	.621	.676	.708
Grandmother	421	.518	.602	.654	.695	.743
Both present	532	.502	.567	.603	.648	.696
Two or more						
Both absent	1,348	.571	.664	.725	.773	.813
Grandfather	254	.699	.776	.823	.850	.883
Grandmother	755	.634	.713	.753	.791	.836
Both present	579	.764	.812	.845	.869	.895

NOTE: Grandparents include only coresident grandparents, who may be the mother's parents or the father's parents.

in-law and mothers-in-law, were pitted against one another in a struggle for control of the man who was the one's husband and the other's son. In their daily encounters both women expressed themselves in the rhetoric of the kitchen, but in crises the real cause of their conflict come to the fore. When an elderly woman I knew during my first field research in 1957–60 seemed in danger of being overwhelmed by a particularly aggressive daughter-in-law, her complaint was not that the daughter-in-law was lazy or incompetent but that she was "trying to steal my son away from me." The perennial anxiety of Chinese women is that "you raise your children and then when they grow up they belong to someone else. Your daughter belongs to her husband, and your son belongs to his wife. Especially those men who always listen to what their wives say. If you say more than two words to your daughter-in-law, they'll get mad and move out of the family."

This is the context assumed when women say that "it is always better to raise your son's wife because she will listen to what you say and won't always be talking to your son behind your back." They are thinking of what older Taiwanese call "the pillow ghosts," the young women who take advantage of the privacy of the bedroom to ingratiate themselves with their husbands. In Taiwanese terms raising a son's wife became a way of exorcising a pillow ghost. On the one hand, it neutralized the daughter-in-law's sexual appeal by imposing conditions that inhibited sexual attraction, and, on the other, it turned the daughter-in-law into a de facto daughter by making her mother-in-law her primary caretaker during the years that create enduring attachments (see Wolf 1968). Taiwanese women did not recognize the first effect of raising a son's wife, but they were well aware of the second. That is why they wanted to nurse their future daughters-in-law. For them nursing a child did not undermine strategic resolve. Nursing was itself a stratagem.

I am not suggesting that Taiwanese women invented minor marriages as a way of dealing with the problems posed by patriarchy. Minor marriages appear to have originated as a defensive strategy on the part of parents who feared that they could not compete in what Chuang and I (1995:792–93) have called "a hot marriage market." What I believe happened is that what began as a way of insuring wives for one's sons became, for women, a way of insuring their loyalty. Once the frequency of minor marriages rose above a certain threshold their advantages for women who feared losing control of their sons were made manifest. The result was that they began giving away their daughters to make way for their future daughters-in-law. Their strategy was to exchange useless daughters for biddable daughters-in-law and thereby preserve the loyalty of their sons.

One could argue, then, that while Taiwanese women were not forced to give away their daughters, they had compelling reasons to do so. This would not save Hrdy's claim that having begun nursing a child women find abandoning it "unbearable," but it would leave room to argue that maternal sentiments are substantial. The strongest form of the argument would be that, given the conditions created by Chinese patriarchy, women had to take advantage of any opportunity to enhance their control of their lives. The implication would be that most women were reluctant to give their daughters away but did so because raising their sons' wives was the one way to counteract patriarchal oppression.

The problem with the argument is that, contrary to what is implied by much of what they say, most of the women who gave a daughter away did not do so to make room for a little daughter-in-law. Table 8 reports the fre-

TABLE 7
Probability of Adoption among Females by Mother's Experience of Adoption

Mother's Experience	Number of Births	Probability of Adoption				
		By Age 1	By Age 2	By Age 3	By Age 5	By Age 15
Adopted	3,425	.462	.546	.591	.632	.688
Not adopted	2,776	.484	.551	.597	.641	.692

quency with which daughters given away were replaced within a year. It says that more than 60% of the girls given away were *not* replaced. Poor women may have given their daughters away because they could not afford to feed them, in which case they would not have adopted a little daughter-in-law. But it was not just the wives of landless laborers who abandoned their daughters without adopting a replacement. Table 8 shows that this was even more common among rich farmers and landlords at the top of the social hierarchy. They were so little interested in the fate of their female children that they commonly gave them to their own tenant farmers. One of the poorest women I knew during my first field research was the daughter of the wealthiest landlord in the township. She told me that she never visited her parents because they were so rich.

The reason Taiwanese women gave away the majority of their female children had more to do with opportunity than with necessity. Until the late 1920s the great popularity of the minor form of marriage meant that there was always someone willing to take them. Indeed, until then the demand for adopted daughters was greater than the supply (see Wolf and Huang 1980:chap. 21). This demand did not make little girls valuable commodities—the bride price for an infant daughter-in-law was 1 yen or less—but it did mean that they could be disposed of conveniently and reasonably humanely. Old people told me that when a girl was born, the go-betweens were at the door the next day ready to arrange an adoption. "You didn't have to call them. They came to see you."

In sum, girls were given away because they were "useless things" and because they were in demand as little daughters-in-law. The only advantage was that one did not have the trouble of raising a child who would not contribute much to her family. Thus the fact that most daughters were given away leaves little room for maternal sentiments. Were these sentiments as strong as Westermarck and his successors suggest, we should find that, except when they wanted to make room for a son's wife, wealthy women raised their daughters. But what we find in fact is that so long as they had sons, the wealthy gave their daughters away as readily as the poor. People only began to raise the majority of their daughters when the changes initiated by the Japanese occupation brought an end to minor marriages and thereby the demand for little daughters-in-law.

Because they were always eligible to marry a foster brother and often did so, the girls Taiwanese women gave away usually arrived at their new homes wearing at least one piece of red clothing, red being the color of the traditional wedding gown. Other than this, however, their change of status did not require any special procedures. There were no taboos to be observed, no rituals to mark either the girl's departure or her arrival, and no festivities. I think this is significant because it suggests that, however distressful the change was for the child, it was not particularly distressful for her mother. Faced repeatedly with an event that arouses strong emotions, human beings usually regularize their handling of the event in a way that helps to keep their emotions within comfortable limits.

To be confident that Taiwanese women did not find giving a child away particularly distressful one would need to have observed their concurrent behavior. I never had an opportunity to do so because by the time I arrived in Taiwan in 1957 adoptions were not common and no longer handled in the traditional manner. But I have talked to many women who gave their daughters away, and my impression is that this was not a wrenching experience. They were aware that the children they gave away suffered, but very few reported having suffered themselves. The dominant note in the accounts of women who had exchanged their daughters for daughters-in-law was pride in a job well done. They appeared to take satisfaction in having seen the opportunity offered and made the most of it. Admiration was clearly what one old women expected when she recounted how she had given away five daughters and raised in their places wives for her five sons. "There is no point in raising girls, but you have to have wives for your sons. So I gave away all five girls and raised instead wives for my five sons. This saved me five dowries and five bride prices as well as the trouble of arranging ten marriages."

My impression may be biased by the fact that most of my informants were talking about decisions taken 10–20 years previously. The pain they felt at the time might have worn away or been suppressed. The only facts we can be certain of are those extracted from the household registers. They do not tell us how the women felt, but they do tell us what they did. Knowing their circumstances, this is our best evidence given the pervasive influence of ideology and the universal need to justify and rationalize. Among 592 girls born into families with two or more surviving sons the probability of adoption by age 1 was .747 and the probability by age 15 .924. In other words, given two surviving sons, only exceptional women chose to raise a daughter. All the rest gave the daughter away, regardless of social status, temperament,

TABLE 8
Number of Daughters Given Away and Percentage Replaced Within a Year by Amount of Land Tax Paid by Natal Family

Land Tax in Yen	Number of Daughters Given Away	Number of Daughters Replaced	Percentage of Daughters Replaced
None	1,545	541	35.02
0.001–0.999	402	129	32.09
1.00–9.99	847	326	38.49
10.0–29.9	338	126	37.28
30 or more	243	77	31.69

and their experience in mothering the child. To maintain that these women gave away their daughters despite sentimental bonds the breaking of which entailed great distress one would have to show that they were compelled to give them away. The evidence says that there was opportunity but no compulsion.

European women also gave their children away with no more—and it seems to me even less—reason. A 15th-century Italian traveler (*Relation* 1847:24–25) noted that "the want of affection in the English is strongly manifested toward their children":

> After having kept them at home till they arrive at the age of 7 or 9 years at the utmost, they put them out, both males and females, to hard service in the houses of other people, binding them generally for another 7 to 9 years. And these are called apprentices, and during that time they perform all the most menial offices; and few are born who are exempted from this fate, for every one, however rich he may be, sends away his children into the houses of others; whilst he, in return, receives those of strangers into his own.

When he asked "the reason for this severity," the Italian was told that English parents did it "in order that their children might learn better manners." He did not believe them, commenting, "I, for my part, believe that they do it because they like to enjoy all their comforts themselves and that they are better served by strangers than they would be by their own children."

We now know that what has come to be called "life-cycle service" was common throughout northwestern Europe (see Hajnal 1982). Moreover, we now have evidence that "want of affection" for children was as common in urban Italy as it was in England. Christiane Klapisch-Zuber (1985:135) has shown that in Florence, "nursing by a salaried nurse or by a slave woman became the dominant practice, at least from the middle of the fifteenth century onward." For the great majority of these children, this involved prolonged separation from their mothers. "Among the more than 400 nurses for whom we have sufficient documentation, we can count, from 1300 to 1500, one nurse *in casa*, who was part of the household of the child's parents, for more than four who take the baby to their own house." And Florence was not exceptional. What Pier Paolo Viazzo (2001:172) calls "urban hyperfecundity" was largely due to the practice by which women in European cities abandoned their children to wet-nurses in the country. A Parisian police official reported that of 20,000 children registered in the city in 1780, only 5% were nursed by their own mothers (see Sussman 1982); the rest were handed over to wet-nurses, most of whom lived outside of the city. A less well-known report compiled in the same year noted that of the 6,000 children born annually in Lyon "more than 4,000 die when put out to nurse" (see Garden 1975:63). "The most outstanding case," according to Viazzo (2001:172, citing Hunecke 1989), was that of Milan in the mid-19th century. Women in the Milanese laboring classes "abandoned their children in droves to the big foundling hospital and the hospital sent them off to wet-nurses in the country."

My subtitle asks: How strong are maternal sentiments? The European evidence does not provide a satisfactory answer because we rarely know whether the mother nursed the child and, if so, how long she cared for it. Thus the fact that Milanese women "abandoned their children in droves" does not necessarily mean that maternal sentiments were weak. It may just mean that in this case they were never fully aroused. The great virtue of the Taiwanese evidence is that we know that almost all of the women who gave their daughters away had nursed and cared for them for several months. Thus the fact that they gave them away despite no strong compulsion suggests that even when they are fully aroused, maternal sentiments are weak compared with the sentiments underlying such behavior as incest avoidance.

The only alternative to this conclusion is that bearing a child, nursing it, and caring for it are not alone sufficient to arouse maternal sentiments. Something more that we have not yet discovered is needed. We need to look for this something, but we also have to take seriously the possibility that it does not exist. Westermarck, Bowlby, and Hrdy—along with many, many others—may be wrong in arguing that maternal sentiments are "a major component of human nature." My data support Hrdy (1999:316) when she suggests that "a mother's emotional commitment to her infant can be highly contingent on ecological and historically produced circumstances." They do not support her when she claims that these circumstances have only 72 hours to make their presence felt. The calculating attitude she describes does not seem to have natural limits, or, if it does, we have yet to find them.

Comments

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Drawing on household registers and retrospective ethnographic data, Wolf argues that the practice of minor marriage in Taiwan calls into question the universality of mother love. Mother love! How could we ever doubt it? Is not the mother the very image of all we hold dearest—the most primal connection between self and other that first teaches us the true meaning of love? In Jungian psychoanalysis, the mother is an archetype of love in its most selfless, most transcendental form—one that is transhistorical and transcultural. But what if this emotional investment in the figure of the mother were indeed historical? Can we speak of the historicity of the affective life of the family in which the mother as a loving and beloved figure can be seen as uniquely positioned within the bourgeois family form that emerges in the 19th century and is disseminated as an ideal of colonial modernities elsewhere?

In responding to Wolf's argument, I find myself wishing to interrogate all the categories of the strategic calculus he so very carefully excavates from his data: What is the family? What is a mother? What is a child? We may think we know what these categories represent, but there is a danger in assuming the peculiar form of the bourgeois oedipalized nuclear family as a norm from which the Taiwanese patrilineal family deviates. In his discussion, this normalizing language dominates. Girls are either "at risk" for being severed from their natal families or "fortunate" enough not to be given away. To be fair, he uses this language as a contrastive device to draw our attention to the fact that our usual assumptions about the affective power of family ties appear to be inoperative here. Moreover, Wolf cites material describing a similar lack of parental sentiment in data from premodern European history as a way of further demonstrating the contingent nature of the sentimentality of the maternal-infant bond. But does not this then beg the question of understanding this contingency in historical terms? Wolf does not cite a body of work that speaks directly to the shifts in the history of the affective life of the family from a structural unit based on the logic of alliance and the preservation of a patrimony to one based on companionate marriage organized around sexual love and a prolonged responsibility for the nurture and education of children (Foucault 1990). Ariès (1962) would be a good place to start. The practice of Taiwanese minor marriage would seem to violate the division between childhood and adulthood that Ariès suggests is a peculiarly modern one. The idea that the child has a nature that is distinctly different from the adult's and an innocence that needs protection within the haven of the family is one that develops the course of the emergence of bourgeois society, with its reorganization of the libidinal investments in the oedipalized family (Donzelot 1997). As Friedrich Kittler (1990) argues, it is in this context that the mother becomes supercharged with a libidinal investment in the close tie between the child and the maternal body, when wet nursing is no longer condoned and the mother becomes charged with the primary responsibility for the proper "development" of the child into responsible adulthood. This libidinal investment is not universal and transhistorical but the product of the unique structure of familial relationships through which "the flow of desire is encoded, trapped, inscribed within the artificial territorializations of a repressive social structure" (Young 1995:171).

In Wolf's sample, the matter-of-fact manner in which women recounted the transfer of daughters to other women to raise and the apparent pride they expressed about their successful handling of these alliances speak to a vastly different affective terrain. His citing of Margery Wolf's conception of the "uterine family" is perhaps most convincing here in giving us an understanding of the affective bonds that were important in the patrilineal stem family. In this regard, I am not convinced that the adopted daughter-in-law was necessarily the "structural victim" (Bourdieu 1976) of the strategies of the patriline to preserve itself in a "hot marriage market" or the strategies of the mother to ensure the continued loyalty of her son. I have no doubt that there were cases of unhappy relations between mothers-in-law and their daughters-in-law (just as there might be between mothers and daughters), but perhaps there were strong affective ties as well. It would be helpful to have more ethnographic perspective on the affective tenor of the relationship between these two structural positions within the patrilineal family. Barlow's (1994) "queering" of Chinese patrikin discourse has helped us to see a performative dimension to kin relations in terms of position and relation among social actors rather than essentialized identities based on sex and gender and, one might want to add here, on biological ties. The homosocial bond between women may be, in some respects, at least as important as the heterosexual bond between husband and wife, particularly when sexuality itself is not the organizing principle of the family or the essential ground in constructions of personhood. Perhaps a history of motherhood is a good place to think about how deeply culture inscribes itself into the very psyche in all its particularity as a historically sedimented sentimental education.

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Human mothers have been known to abandon children, sell them, foster them out, give them to the church as oblates, drown them, strangle them, even eat them—and we can add to the list Wolf's remarkable data set showing that a large proportion of mothers in South China gave

up infants to become child brides. I am in his debt for his richness of detail and attention to alternative explanations. However, when he opposes his position that there are no "natural limits" to maternal bonds to what I wrote in *Mother Nature* (1999) I am puzzled.

Wolf focuses on my claim that "extended contact between mother and infant (especially if the mother is breast-feeding) can elicit emotions that undermine the strongest practical resolve" (Hrdy 1999:315). This was a statement of observed fact preceding my description of an odd experiment unearthed by the historian Rachel Fuchs. In the mid-19th century, as France's "heyday of wet nursing" was winding down, reformers decided to intervene. Knowing that 24% of the mothers who gave birth at Paris's charity hospital subsequently abandoned their infants, they forced a subset of indigent mothers to remain in close proximity to their newborns for eight days. The proportion of new mothers who abandoned their babies dropped by more than half. Ten percent of the extra-contact mothers went ahead and abandoned, but for those who decided to keep their babies after all "it was as though their decision to abandon their babies and their attachment to their babies operated as two separate systems." One system involves practical, conscious decisions and takes into account the mother's poverty, cultural expectations, and uniquely human awareness about what the future is likely to bring. The other is informed by her sensory and emotional experience with her baby, including the physiological and neurological changes brought about through nursing. Fluctuating hormones do not determine behavior, but they alter the probabilities that certain behaviors will occur. There is no one root source of emotion or urge equivalent to "the maternal instinct." Rather, there is a range of biologically based maternal responses to a range of circumstances that, taken together, make it more or less likely that a given mother will become committed to her offspring. The best way to understand this complicated and multifaceted process is to take into account specific features of the mother's condition that affect the chances that she will respond to the various cues produced by the new baby. Given how important it is for a mother to respond appropriately, it is not surprising that natural selection has built multiple redundancies, checks, and fail-safes into a system that generally speaking is biased toward inducing a mother to nurture her baby.

Such views are considerably less "essentialist" than Wolf implies. Of course social context matters, but that does not invalidate the role of biological factors. When Wolf states that mothers in his sample were not distressed by giving away infants that they had just spent the past year nursing, I admit to being surprised, but I accept his assessment. I do not, however, accept that these women were "willingly" giving away daughters as if they were free agents making decisions derived from their own inclinations and priorities. In my view, "convincing mothers to accept poor terms" is the primary ideological business of patriarchal societies. Given their participation in a patrilocal, patrilineal family system with norms and institutions biased in favor of patrilineal interests, how could the options of these mothers have been other than constrained? The fact that women play active, even prideful roles in such systems does not mean that giving away daughters is a "strategy" developed because it benefits mothers. Rather, by sending her own daughter away and adopting a subservient daughter-in-law for a son to marry, a woman is simply making the best of her disadvantaged situation in a system heavily biased toward patrilineal interests.

Back when Wolf first sent me his manuscript, I wrote him to concede that my assertion that primate mothers who abandon infants "almost invariably do so within the first 72 hours" was too strong. As the first scholar to review the primatewide literature on maternal abandonment, I had detected a pattern and had mentioned it to see how it would hold up. In the absence of any carefully controlled studies, I acknowledged that "it would not be a good idea for anyone to cite 72 hours (essentially lapsed time prior to onset of lactation) as some hard-and-fast rule about the time limit for maternal abandonment" (personal communication to Arthur Wolf, May 31, 2002). Why then, is he shoehorning me into a position far more extreme? Unless we can find a constructive way to move beyond the biological determinism/social constructionism dichotomy, anthropology will cede the study of human nature in all its diversity to other disciplines—a process which is unfortunately already under way.

This complaint aside, Wolf raises important questions. What were the breast-feeding practices and infant care practices like? How free were the choices these mothers made? What did they feel? How much variation was there between mothers? Is the early "adopting out" of daughters by wealthy families more nearly a substitute for infanticide than a way to obtain a daughter-in-law on the cheap? And, especially, what alternatives did the protagonists in this game actually have? New interest in the topic may shake loose more valuable ethnographic and archival data such as Wolf provides here.

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Wolf dares to question an almost universally accepted cultural belief—that maternal sentiments are part of human nature. Taking a broad view of Taiwanese culture and supporting his arguments with official data, he concludes that Taiwanese women's giving away daughters had more to do with opportunism than with necessity or compulsion. However, I believe that he plays down one very important aspect of the issue: the women's emotional responses.

In my own research I have interviewed many elderly women. Three of them, aged 87, 72, and 65, had been given to infertile couples by their natal families because of poverty; in two cases their fathers had died, leaving their widowed mothers destitute. All natal connections

were severed. A fourth, my mother, had been born into a wealthy family but given to a paternal uncle at the age of two, only to be returned four years later when the uncle married a second wife who delivered children of his own. Upon her return she was given all of the housekeeping responsibilities, replacing servants who had left because of the impending war; she received no help from her siblings, all of whom attended college. Although she passed the entrance exam for Taiwan Normal University, she was asked to stay at home. In her words, she was "sacrificed."

These events happened 60 to 80 years ago (30 years before Wolf's fieldwork). For me these women's stories raise all kinds of questions. One in particular is how their mothers felt about giving them away. I asked my maternal grandmother about her feelings about giving my mother away, and she spoke of sadness, fate, and "the choice of no choice." Crying and smiling at the same time, she said, "You'll understand when you get married. . . . There are so many things we women need to do, whether it feels good or not."

My informants were not adopted as *sim-pua* ("little daughters-in-law," denoting the system by which poor families adopted very young girls as future wives for their sons and as sources of household labor), but their anecdotes confirm that the giving away of daughters presented challenges to maternal sentiments. There may be an unidentified factor in Taiwan's patriarchal and collectivist society that has steeled Taiwanese mothers' hearts against such sentiments, thus making them appear "discriminating and calculating" (Hrdy's terminology, as quoted by Wolf). Wolf himself leaves this question unanswered when he discusses how a cultural system enforces such a reality; "the choice of no choice" is probably tied to his comment that "something more that we have not yet discovered is needed."

In Taiwan's patriarchal society, women have always made "choices of no choice" in their pursuit of survival. The practice of giving away daughters for minor marriages is a perfect example of the way in which such strategies are encouraged by the entire cultural system. George Mead (1934) argued that the cultural meanings of social practices are derived from social interactions; Scheper-Hughes's (1985) suggestion that maternal love and practices are culturally constructed lends support to social-interactionist assumptions concerning motherhood, childbirth, and child death. Accordingly, meanings of motherhood are derived from interactions with powerful others and with cultural beliefs that encourage women to make "correct" or "good" choices for their own as well as their daughters' lives.

To support his argument, Wolf uses comparative data on the percentages of daughters given away by families with both parents still living versus families with one or both parents deceased (see table 6). He finds no difference between the two. However, I believe his argument suffers from a failure to distinguish between natal families and in-laws. During the time period covered by the data, the two groups had very different motivations for giving up their daughters or granddaughters-in-law, and the associated emotions of the two sets of mothers may have been very different. We will never know, but we must acknowledge that in traditional Chinese society women had little (if any) power to challenge decisions made by their in-laws to give away their daughters. This lack of autonomy might constitute a challenge to Wolf's conclusion.

By identifying an important feature of Chinese culture, Wolf has established a foundation for Chinese family studies. His northern Taiwan fieldwork between 1957 and 1960 produced a body of valuable ethnographic data that documented the workings of early 20th-century Chinese families. I admire his contributions, especially since his data fill what might otherwise be a gaping hole in this area of study.

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This article challenges the commonly accepted and observed concept of "maternal sentiments" regarded by Westermarck, Bowlby, and Hrdy, among others, as "a major component of human nature." Wolf has substantial evidence: among 6,201 females born between 1906 and 1930 in northern Taiwan, 69% of them were given away as infants or small children by their mothers to engage in "minor" marriage. These mothers did so not because they were forced by other individual or institutional factors but because girls were "useless things" and were in demand as little daughters-in-law. Thus, among women giving away little girls and using adoption as a strategy to secure their future life, maternal sentiments toward girls, if any, were weak. The "missing-girls" phenomenon in contemporary mostly rural Mainland China sheds some light on this topic. Considering that girls missing in China today have experienced more painful deprivation than girls given away in early-20th-century Taiwan, I hope that my data will provide a plausible understanding of "maternal sentiments."

The missing-girls phenomenon has a long history in China, but it has emerged as a problem recently, concurrent with the implementation of the strict family-planning policy of the late 1970s (Das Gupta and Li 1999). For example, the sex ratio among surviving children aged 0–4 has increased from 107.1 in 1982 to 110.2 in 1990 and to 120.2 in 2000, much higher than the normal level of about 105. The missing girls are victims of underreporting, abortion, abandonment, infanticide, or exposure to excess mortality (Zeng et al. 1993, Chu 2001, Li and Zhu 2001). Underlying the observation of missing girls are strong son preference and a discrimination against girls that is deeply embedded in the Chinese family system, culture, and current rural economic conditions: parents need a son to continue the family lineage and secure their economic future in old age. Our research on excess female child mortality in a county of Shaanxi Province shows that although discrimination is univer-

sal it disproportionately targets high-order girls with no brothers (Li and Zhu 2001, Li, Zhu, and Feldman n.d.). Thus, maternal sentiments are, at best, grossly unequal.

I argue, however, that the majority of women pressured by son preference do have strong and substantial maternal sentiments. Using 2000 census data, I have estimated that about an eighth of the expected girls aged 0–4 are missing. Apparently, the majority of the missing girls would have been later births in families without sons. However, most of the missing girls had been aborted before birth or left unreported in the registry; only a small proportion were missing because of abandonment, infanticide, or excess mortality (Zeng et al. 1993, Li and Zhu 2001). Using 1990 census data, Li, Feldman, and Tuljapurkar (1999) showed that among women without sons and under son-preference pressure, about 17% manifested sex-selective behaviors. Indeed, from our surveys in three counties among women who married after 1980 and had stopped childbearing, more than 30% had no sons (Li et al. 1998, Jin et al. 2002). For these women, uxorilocal marriage is ideal for securing their economic future (Li, Feldman, and Li 2000, 2001, 2003).

Of course, the maternal sentiments of women who have made their girls suffer excess postnatal mortality, for example, through abandonment or infanticide, are questionable. However, I would claim that they are somewhat compelled by individual, household, and social ecology and circumstances. I found that in the county mentioned above in 1994–96, about two-thirds of excess female deaths occurred within one day of birth (Li and Zhu 2001, Li, Zhu, and Feldman n.d.). According to our focus-group discussions and in-depth interviews with mothers and mothers-in-law in a town in Anhui Province in 2001, most cases of abandonment and infanticide were instigated by parents-in-law, acquiesced in by mothers, and undertaken by mothers-in-law. When we talked to several mothers of lost girls, they cried and said that they had had no power to oppose their parents-in-law and husbands. This is not to say that girl abandonment or infanticide is right and should be understood with sympathy. Rather, I argue that these women's natural maternal sentiments are "hidden" and that their behaviors need to be understood in the context of son preference in the Chinese culture and family system.

It is likely that Taiwanese women followed the dominant cultural norm, since major, minor, and uxorilocal marriage were all accepted and practiced in these villages (Wolf and Huang 1980). Moreover, Wolf's use of the data in table 8 is not sufficient to rule out women's "compelling reasons." First, it is not clear whether these women had sons for whom they needed to adopt girls as future wives. Second, this issue needs to be examined over a longer period than one year. Also, I am not sure whether the differences in the probability of adopting out girls among various groups are statistically significant in the data sets given. Life-table techniques should give more reliable results.

In short, the evidence with which I am most familiar shows that most women have strong and substantial maternal sentiments. Under certain circumstances, some women may hide their "natural instincts" and exhibit weak or no maternal sentiments.

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Wolf demonstrates admirable insights into the existence or lack of maternal sentiments in Taiwan in the earlier half of the 20th century by using the data drawn from minor marriages. Women, both rich and poor, according to Wolf, willingly gave away their newborn baby girls as others' future daughters-in-law while adopting others' female babies and raising them as their own future daughters-in-law. Structurally, he argues, this provided women with the best strategy for insuring that they would be taken care of in old age by the daughter-like daughter-in-law while at the same time securing their sons' eternal loyalty by preventing them from becoming too closely attached to their wives. The reference to Wolf's earlier research is helpful here: according to that work and that of others (such as Westermarck), individuals who grew up as brother and sister found it difficult to develop the exclusive romantic bond we normally expect of lovers.

My problem with this otherwise thorough study resides in the notion of maternal sentiments. Relying on the findings of sociobiologists, Wolf classifies these sentiments as something independent of culture—almost synonymous with the maternal instinct to protect and raise the young, which, as far as I can see from his study, the Taiwanese women did as much as women elsewhere. Taiwanese gave away their own baby daughters and adopted and raised others' baby daughters, and they protected and raised their baby boys with no problem in any case. Therefore, the only thing that is confirmed by this study is that humans are capable of raising others' children along with their own—a fact that can be established without reference to minor marriage. The fact that Taiwanese women raised others' daughters and gave away their own tells us more about their culture, a systemic effect of a particular form of patriarchy, and gender ideology than about their maternal sentiments.

Furthermore, if what is meant by maternal sentiments is emotion, then I find it troubling that the major source for the analysis is statistics. Shouldn't we be looking at sources that express the emotional or sentimental aspect of minor marriage, for example, pulp fiction, novels, or memoirs? I detect the anachronistic and perhaps ethnocentric imposition of an assumption on the Taiwanese statistics. As anthropologists we understand that in different cultures and at different times humans have adopted a variety of kinship practices. Many of these seem to us bizarre, cold-blooded, or inhumane, but they have been and are being practiced as a prescribed part of the life course. We cannot assume that, for example, Japanese daughters-in-law deeply love their parents-in-law because they take care of them as primary caregivers in

their own homes. This may have more to do with the scarcity of good, affordable nursing homes or insurance than with the sentiments of dutiful daughters-in-law. Similarly, the statistics that prove that daughter adoption was frequent do not get translated into the actual sentiments of mothers. Without the ethnocentric assumption that mothers must be sentimentally attached to their babies, the reading of these statistics as an absence of maternal sentiments is impossible. I find this the decisive weakness of Wolf's article.

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Different cultures constitute natural experiments about what outputs an evolved, species-typical psychological mechanism produces under various conditions. Alternative models provide contrasting predictions of how various inputs generate outputs, which can then be compared with ethnographically observed variation. Wolf has elegantly employ this approach to explore anti-incest mechanisms (see also Lieberman, Tooby, and Cosmides 2003). He now uses his data to question whether maternal sentiments are "a major component of human nature."

Exploring Wolf's question can be aided by introducing a richer, more computationally specified set of alternative models than those evoked by the folk psychological and ethological concepts commonly used (sentiment, the contrasted category of "calculation," imprinting, unconditional love). The behavior to be explained can also be widened: Theory predicts, and observation confirms, that maternal behavior may range from total self-sacrifice at one extreme to the intentional killing of the child at the other (see Daly and Wilson 1988 for a brilliant dissection of discriminative parental solicitude).

The maternal motivational system was designed by natural selection to assign value to and regulate behavior towards offspring in a way that promoted maternal fitness under ancestral conditions. "Calculation," rather than being only a deliberative, extrinsic process acting in opposition to "sentiment," is expected to be embodied in the design of the neural programs generating sentiments. From an evolutionary psychological perspective, sentiments are generated by neurocomputational programs whose structure was designed to take ancestrally valid cues relevant to evaluating the fitness payoffs to alternative courses of action and perform operations on them to produce adaptively calibrated motivational output.

Here are design criteria for the maternal motivational system:

Kin recognition: Under ancestral demographic conditions, having an infant born out of one's body functioned as a reliable signal to the maternal motivational system that a new genetic offspring existed. Subsequent contact induces the formation of a recognition template. This cues relatedness reliably because in a band-sized social environment synchronized births and neonate mixing were almost nonexistent.

Valuation from infancy through adulthood: The existence of an offspring creates a rare, potentially valuable opportunity for substantial maternal fitness increase. However, actual fitness increase and hence the optimal valuation of the child depend on both costs and benefits. Hence, valuation at a given time depends on integrating evolved cues that ancestrally predicted costs and benefits. Valuation should change dynamically as these variables change (e.g., with opportunity costs for investing in existing or future children and alternative mateships, with changes in child health, with increases or decreases in expected resources, maternal health, or caretaking by others). Valuation (love) is commonly high but can be low or negative depending on how much benefits exceed costs.

Labor shifting: Raising a child is effortful and subtracts from the free energy available for other activities, including other children. Ancestrally, fathers, grandparents, older siblings, other kin, and band-mates would have been potential caretakers to which some (or, rarely, all) of the burden of child care could have been transferred. The downside was the risk that others' caretaking was of lower quality. The intensity of motivated proximity should track the expected difference between the quality of maternal care (minus its opportunity cost) and other care. In Wolf's data, children are not being infanticidally abandoned but relocated to another caretaker. Hence, an appreciation of effort liberated for other children should offset (to some degree) the urge to maintain proximity.

Components of child value: Evolutionarily, the primary fitness value of children to a parent is their expected future offspring. Other components include their net productivity as it accrues to parents, siblings, and other kin, their exchange value in marriage (which selected for paternal sexual proprietariness towards daughters), and their potential value as long-term deep-engagement partners (Tooby and Cosmides 1996).

Deep engagement and parenting: Deep engagements are dyadic relationships of reciprocal valuation that are stabilized by the mutual recognition of mutual irreplaceability (as in friendships, romantic love, and family love triggered by the mutuality of affection rather than unidirectional investment). Marked by psychological intimacy, they are designed to be long-term and to provide insurance to a participant that critical social support from at least one person will weather lapses in the utilitarian reasons that induce social support from others. Knowledge by parents that a child will leave by adulthood (as by marrying out) may make them unrewarding as candidates for deep engagement, thereby lowering the motivation to cultivate intimacy and maintain proximity. This factor may explain some cross-cultural variation in parent-offspring intimacy (such as Wolf's findings) and some preference in sex of offspring.

The claim is that humans in all cultures reliably de-

velop a dimorphic parental motivation system designed by evolution to use circumstantial cues to up- or down-regulate the intensity of child valuation (love), the urge to maintain proximity, the openness to shifting caretaking, and the degree to which affectionately engaged intimacy is cultivated.

Reply

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From "historically sedimented sentimental education" to "a dimorphic parental motivation system"—this language alone says that the authors of these comments represent the full range of current anthropological perspectives. Despite this, the comments also suggest a broad band of agreement. Not surprisingly, no one argues for the existence of a maternal instinct—an inborn tendency for women to devote themselves to their children. But, surprisingly, neither does anyone argue that the maternal sentiments are nothing more than ideological artifacts with no real emotional content. By implication if not by declaration, everyone agrees that most women under most circumstances develop strong emotional attachments to their offspring.

The commentators also agree that the maternal sentiments are contingent. Postmodernists and evolutionary psychologists alike argue that, depending on the circumstances, mothers may or may not develop such attachments. They even agree that these contingencies are one or another of three closely related elements of the Chinese kinship system—patriarchal authority, patrilineal descent, and patrilocal residence. Anagnost points to the "the patrilineal stem family," Hsu to "Taiwan's patriarchal and collectivist society," Li to "son preference in the Chinese culture and family system," Hrdy to "participation in a patrilocal, patrilineal family system with norms and institutions biased in favor of patrilineal interests," Ryang to "a systemic effect of a particular form of patriarchy" and "gender ideology," and Tooby and Cosmides to "knowledge by parents that a child will leave by adulthood (as by marrying out)."

Allow me to sharpen a little the challenge my essay intends. The evidence I present all comes from 11 villages and 2 small towns in northern Taiwan. These are communities I have been studying since the late 1950s. Since then Chuang Ying-chang and I have organized a project to collect and analyze household registers from a number of communities in other parts of the island. This project has recently been institutionalized as the Historical Demography Program of the Academic Sinica's newly established Ts'ai Yuan-pei Center for the Humanities and Social Sciences. The founding members include Chuang Ying-chang (director), Paul Katz, Pan Ying-hai, James Wilkerson, Yang Wen-shan, and Yu Guang-hong.

The first fruits of this enormous effort are now available. They include the probability of adoption in 13 field sites in Taiwan and the Pescadores Islands. Table 9 shows that this probability varied from .500 and above in northern Taiwan and the Pescadores to less than .100 in southern Taiwan. Part of this variation may be due to the presence of Sinicized aborigines in Ta-ch'ia, Ta-nei, and Chi-pei (Brown 2004:69–88), but there were very few aborigines in any of the other 10 communities. The fact that the probability of a girl's being given away as an infant varied from .042 in Tung-kang to .682 in Hu-hsi cannot be attributed to non-Han influences. In the years during which these women were born the populations

TABLE 9
Probability of Adoption among Females Born 1890–1915 in 13 Localities

Locality	Number of Births	Probability of Adoption				
		By Age 1	By Age 2	By Age 3	By Age 5	By Age 15
Northern Taiwan						
Chu-pei	1,333	.258	.337	.378	.427	.505
T'ai-pei	1,393	.167	.224	.258	.301	.350
E-mei	972	.438	.510	.540	.571	.620
Pei-p'u	288	.276	.345	.373	.401	.480
Wu-chieh	989	.069	.134	.191	.289	.473
Central Taiwan						
Chu-shan	966	.125	.167	.193	.225	.367
Lu-kang	764	.139	.173	.208	.240	.339
Ta-ch'ia	291	.159	.212	.212	.245	.314
Southern Taiwan						
Ta-nei	1,808	.038	.050	.066	.082	.133
Chi-pei	236	.017	.032	.032	.037	.073
Chiu-ju	369	.045	.059	.067	.078	.129
Tung-kang	422	.042	.061	.073	.123	.196
Pescadores						
Hu-hsi	613	.682	.690	.693	.697	.711

of both communities were exclusively Min-nan-speaking Han Chinese.

Clearly, then, the probabilities I report cannot be attributed to the fact that my Hai-shan subjects lived in a patriarchal, patrilineal, patrilocal society. So did the women born in Tung-kang, Lu-kang, and Chu-shan. Patriarchy and patrilineal interests were as entrenched in northern Taiwan as in southern Taiwan, son preference as strong, and the knowledge that daughters would marry out as certain. Other aspects of the Chinese kinship system varied widely, as Hill Gates and Janice Stockard have demonstrated in the case of bridewealth and dowry and the timing of bridal transfer (Gates 1996:121–47; Stockard 1989). Thus the evidence in table 9 does not rule out the possibility that some aspect of the Chinese kinship system was responsible for Hai-shan's high adoption rate. It must, however, be an aspect of the system that was strong in northern Taiwan and the Pescadores, weak in central Taiwan, and weaker still in southern Taiwan.

Studies by my Taiwanese colleagues and their Japanese predecessors indicate that there was only one aspect of the Chinese kinship system that varied in just this way—the relative frequency of major and minor marriages (Chuang and Wolf 1995). Where minor marriages were popular, women gave away most of their daughters; where they were not, they raised their daughters. This argues that women in Hai-shan were not constrained to dispose of their daughters by patriarchy, patriliny, or patrilocality. They gave them away because the demand for "little daughters-in-law" created a convenient, humane alternative to raising them. Patriarchy and its correlates helped create this alternative, but they did not force women to take advantage of it.

Hrdy rejects the view that "these women were 'willingly' giving away daughters as if they were free agents making decisions derived from their own inclinations and priorities." As a Marxist (with a heterodox inclination toward biology), I have to agree. No human beings are free agents in this strong sense. Hrdy also argues that " 'convincing mothers to accept poor terms' is the primary ideological business of patriarchal societies." Again, I have to agree. I need only add that this is the primary ideological business of most, if not all, societies. In fact, as regards the disposition of their female children, women in northern Taiwan and the Pescadores were freer than women in most other societies. They had a convenient, humane, *and socially acceptable* way of disposing of daughters who were not needed.

I also agree with Li, Hsu, and Ryang's claim that for many women giving a daughter away did not "feel good." I only insist that this is not evidence of unusual compulsion and thus of the existence of maternal sentiments. People are commonly pained by the loss of familiar things, many of them trivial things. My point is not that Taiwanese women failed to develop *any* sentimental attachment to their female children and could therefore dispose of them without *any* discomfort. It is that the sentiments they developed were not strong and not capable of countermanding practical considerations. They may have existed, but they were not assertive. They were weak things compared with the sexually inhibiting aversions aroused by early childhood association.

We are faced, then, with what I hope will prove to be a stimulating contradiction. On the one hand, we have what seems to be irrefutable evidence that under normal conditions most women develop attachments that make abandoning their offspring unbearable. On the other hand, we have the Taiwanese evidence that appears to say that when it is socially acceptable, women give away most of the children for which they have no practical need. Most of the comments attempt to resolve the contradiction by arguing that Taiwanese women were compelled to give away their children by some aspect of the Chinese kinship system. I reject this argument because the evidence says that women in northern Taiwan and the Pescadores were freer to dispose of their children as they saw fit than women in most societies. This leaves us with two possibilities.

One is the possibility suggested by Tooby and Cosmides. They accept the existence of something like maternal sentiments but argue that they can be turned off by environmental cues. Their vision is that of a self-regulating motivational system aimed at reproductive success. We need, then, to consider the possibility that because of some local condition women in northern Taiwan and the Pescadores failed to develop strong maternal sentiments. The problem is that it is hard to think of what this condition could be. The daughters these women gave away were commonly replaced by a son's future wife. Thus in many cases a woman's giving a daughter away meant that two of her children married in the minor rather than in the major fashion. Given, then, that the fertility of minor marriages was 30–40% lower than that of major marriages (Wolf 1995), giving a daughter away did not have a "fitness payoff." It was a fitness giveaway.

The other possibility is that what we take to be strong maternal sentiments in other societies are socially constructed illusions. The devotion that most mothers display may express nothing more than a particularly persuasive form of false consciousness. Or if the maternal sentiments are not the means by which society manipulates women, they may be the means by which women manipulate their children. Still another possibility is that what we often take to be biologically grounded sentiment is the product of an acute form of cognitive dissonance (Festinger 1957). Having discovered that the children they suffered to bear are burdensome, women may have little choice but to love them or kill them. Perhaps the reason the maternal sentiments were so little evident in Taiwan is that women there had a third option.

At present we lack good reason for rejecting either of these two possibilities. The best attitude is the one recommended by Hrdy. We need, as she puts it, "to shake loose more . . . ethnographic and archival data."

References Cited

ARIÈS, PHILIPPE. 1962. *Centuries of childhood: A social history of family life.* Translated by Robert Baldick. New York: Knopf. [ASA]

BARLOW, TANI E. 1994. "Theorizing woman: *Funu, guojia, jiating* (Chinese woman, Chinese state, Chinese family)," in *Body, subject, and power in China.* Edited by Angela Zito and Tani E. Barlow, pp. 253–89. Durham: Duke University Press. [ASA]

BOURDIEU, PIERRE. 1976. "Marriage strategies as strategies of social reproduction," in *Family and society: Selections from the* Annales: Economies, Sociétés, Civilizations. Edited by Robert Forster and Orest Ranum, pp. 117–44. Baltimore: Johns Hopkins University Press. [ASA]

BOWLBY, JOHN. 1984. "Caring for the young: Influences on development," in *Parenthood: A psychodynamic perspective.* Edited by R. S. Cohen, B. J. Cohler, and S. H. Weissman, pp. 269–84. New York: Guilford Press.

———. 1988. *A secure base: Parent-child attachment and healthy human development.* New York: Basic Books.

BROWN, MELISSA. 2004. *Is Taiwan Chinese? The impact of culture, power, and migration on changing identities.* Berkeley: University of California Press.

CASSIDY, JUDE. 1999. "The nature of the child's ties," in *Handbook of attachment.* Edited by Jude Cassidy and Phillip R. Shaver, pp. 3–20. New York: Guilford Press.

CHU, JUNHONG. 2001. Prenatal sex determination and sex-selective abortion in rural central China. *Population and Development Review* 27:259–81. [LS]

CHUANG YING-CHANG, AND ARTHUR P. WOLF. 1995. Marriage in Taiwan, 1881–1905: An example of regional diversity. *Journal of Asian Studies* 54:781–95.

DALY, MARTIN, AND MARGO WILSON. 1988. *Homicide.* New York: Aldine de Gruyter. [JT, LC]

DAS GUPTA, MONICA, AND LI SHUZHUO. 1999. Gender bias in China, South Korea, and India 1920–1990: The effects of war, famine, and fertility decline. *Development and Change* 30:619–52. [LS]

DONZELOT, JACQUES. 1977. *The policing of families.* Baltimore: Johns Hopkins University Press. [ASA]

FESTINGER, LEON. 1957. *A theory of cognitive dissonance.* Stanford: Stanford University Press.

FOUCAULT, MICHEL. 1990. *The history of sexuality.* Vol. 1. *An introduction.* Translated by Robert Hurley. New York: Vintage. [ASA]

GARDEN, MAURICE. 1975. *Lyon et les Lyonnaise au XVIIe siècle.* Paris: Les Belles Lettres/Flammarion.

GATES, HILL. 1996. *China's motor: A thousand years of petty capitalism.* Ithaca: Cornell University Press.

GEORGE, CAROL, AND JUDITH SOLOMON. 1999. "Attachment and caregiving," in *Handbook of attachment.* Edited by Jude Cassidy and Phillip R. Shaver, pp. 649–70. New York: Guilford Press.

HAJNAL, JOHN. 1982. Two kinds of preindustrial household formation system. *Population and Development Review* 8: 449–94.

HRDY, SARAH. 1999. *Mother Nature: A history of mothers, infants, and natural selection.* New York: Pantheon Books.

HUNECKE, VOLKER. 1989. *I trovatelli di Milano: Bambini esposti e famiglie espositrici dal XVII al XIX secolo.* Bologna: Il Mulino.

JIN XIAOYI, MARCUS W. FELDMAN, LI SHUZHUO, AND ZHU CHUZHU. 2002. Revised edition. *A survey of marriage form and family support for the elderly in Songzi, China.* Morrison Institute for Population and Resource Studies Working Paper 86. [LS]

KAJIWARA, MICHIYOSHI. 1941. *Taiwan nōmin seikatsu kō* (An examination of the life of Taiwanese peasants). Taipei: Ogata Takezō.

KITTLER, FRIEDRICH A. 1990. *Discourse networks 1800/1900.* Stanford: Stanford University Press. [ASA]

KLAPSICH-ZUBER, CHRISTIANE. 1985. "Blood parents and milk parents: Wet nursing in Florence, 1300–1530," in *Women, family, and ritual in Renaissance Italy.* Translated by Lydia G. Cochrane, pp. 132–64. Chicago: University of Chicago Press.

LI SHUZHUO, MARCUS W. FELDMAN, AND LI NAN. 2000. Cultural transmission of uxorilocal marriage in Lueyang, China. *Journal of Family History* 25:158–77. [LS]

———. 2001. A comparative study of determinants of uxorilocal marriage in two counties of China. *Social Biology* 48:125–50. [LS]

———. 2003. Acceptance of two types of uxorilocal marriage in contemporary rural China: The case of Lueyang. *Journal of Family History* 28:314–33. [LS]

LI SHUZHUO, MARCUS W. FELDMAN, LI NAN, AND ZHU CHUZHU. 1998. *A survey of transmission of son preference in two counties of Shaanxi, China.* Morrison Institute for Population and Resource Studies Working Paper 75. [LS]

LI NAN, MARCUS W. FELDMAN, AND SHRIPAD TULJAPURKAR. 1999. Sex ratio at birth and son preference. *Mathematical Population Studies* 8:91–107. [LS]

LI SHUZHUO, AND ZHU CHUZHU. 2001. *Research and practice on gender differences in child survival in China.* Beijing: China Population Press. [LS]

LI SHUZHUO, ZHU CHUZHU, AND MARCUS W. FELDMAN. n.d. Gender differences in child survival in rural China: A county study. *Journal of Biosocial Science.* In press. [LS]

LIEBERMAN, D., J. TOOBY, AND L. COSMIDES. 2003. Does morality have a biological basis? An empirical test of the factors governing moral sentiments relating to incest. *Proceedings of the Royal Society B* 02PB0795:1–8. [JT, LC]

MEAD, GEORGE H. 1934. *Mind, self, and society: From the standpoint of a social behaviorist.* Chicago: University of Chicago Press. [MH]

OKADA, YUZURU. 1929. *Kiso shakai* (Elementary groups of society). Tokyo: Kōbundō.

Relation or rather a true account of the island of England . . . about the year 1500. 1847. London: Camden Society.

RUTTER, MICHAEL. 1981. Revised edition. *Maternal deprivation reassessed.* London: Penguin Books.

SCHEPER-HUGHES, NANCY. 1985. Culture, scarcity, and maternal thinking: Maternal detachment and infant survival in a Brazilian shanty town. *Ethos* 13:291–317. [MH]

———. 1992. *Death without weeping: The violence of everyday life in Brazil.* Berkeley: University of California Press.

SHEPHER, JOSEPH. 1971. Mate selection among second-generation kibbutz adolescents: Incest avoidance and negative imprinting. *Archives of Sexual Behavior* 1:293–307.

SPENCER, HERBERT. 1898. *Principles of psychology.* Vol. 2. New York: Appleton.

STOCKARD, JANICE E. 1989. *Daughters of the Canton Delta: Marriage patterns and economic strategies in South China, 1860–1930.* Stanford: Stanford University Press.

SUPREME COURT OF THE REPUBLIC OF CHINA. 1918. *Min-shang-shih hsi-kuan tiao-ch'a pao-kao-lu* (Report of research on civil and commercial customs). Vol. 3. Peking.

SUSSMAN, GEORGE. 1982. *Selling mother's milk: The wet-nursing business in France, 1715–1914.* Urbana: University of Illinois Press.

TALMON, YONINA. 1964. Mate selection in collective settlements. *American Sociological Review* 29:491–508.

TOOBY, J., AND L. COSMIDES. 1996. "Friendship and the Banker's Paradox: Other pathways to the evolution of adaptations for altruism," in *Evolution of social behaviour patterns in primates and man.* Edited by W. G. Runciman, J. Maynard Smith, and R. L. M. Dunbar, pp. 119–44. Proceedings of the British Academy 88. [JT, LC]

VIAZZO, PIER PAOLO. 2001. "Mortality, fertility, and family," in *Family life in early modern times.* Edited by David I. Kertzer and Marzio Barbagli, pp. 157–87. New Haven: Yale University Press.

WELLS, PAMELA. 2000. Medea or Madonna? Good housekeep-

ing: Mother Nature's selective approach to nurturing. *Times Literary Supplement*, no. 5059 (March 17), p. 3.

WESTERMARCK, EDWARD. 1922. 5th edition, revised. *The history of human marriage*. 3 vols. New York: Allerton.

———. 1926. *A short history of marriage*. London: Macmillan.

WOLF, ARTHUR P. 1968. Adopt a daughter-in-law, marry a sister: A Chinese solution to the problem of the incest taboo. *American Anthropologist* 70:864–74.

———. 1984. "Family life and the life cycle in rural China," in *Households: Forms and functions*. Edited by Robert M. Netting and Richard Walk, pp. 279–98. New York: Academic Press.

———. 1995. *Sexual attraction and childhood association: A Chinese brief for Edward Westermarck*. Stanford: Stanford University Press.

———. n.d. "Two kinds of patriarchy: Europe and China," in *Marriage and the family in Eurasia*. Edited by Theo Engelen and Arthur P. Wolf. Stanford: Stanford University Press.

WOLF, ARTHUR P., AND CHUANG YING-CHANG. 1999. "Fraternal fission, parental power, and the life cycle of the Chinese family," in *Jenlei-hsueh tsai Tai-wan te fa-chan* (Anthropology in the development of Taiwan). Edited by Hsu Cheng-kuang and Lin Mei-jung. Taipei: Institute of Ethology, Academia Sinica.

WOLF, ARTHUR P., AND CHIEH-SHAN HUANG. 1980. *Marriage and adoption in China, 1845–1945*. Stanford: Stanford University Press.

WOLF, MARGERY. 1972. *Women and the family in rural Taiwan*. Stanford: Stanford University Press.

YOUNG, ROBERT J. C. 1995. *Colonial desire: Hybridity in theory, culture, and race*. London: Routledge. [ASA]

ZENG YI, TU PING, GU BAOCHANG, XU YI, LI BOHUA, AND LI YONGPING. 1993. Causes and implications of the recent increase in the reported sex ratio at birth in China. *Population and Development Review* 19:283–302. [LS]