CHAPTER 3.

WHY DON'T MEN BREAST-FEED THEIR BABIES?

The Non-Evolution of Male Lactation.

Section 2.

During adolescence the visible differences between the mammalian sexes increase under the influence of a mix of hormones from the gonads, adrenal glands, and pituitary gland. Hormones released in pregnant and lactating females produce a further mammary growth spurt and start milk production, which is then reflexively stimulated by nursing. In humans, milk production is especially under the control of the hormone prolactin, while the responsible hormones in cows includes somatotropin, alias "growth hormone" (the hormone behind the current debate over proposed hormonal stimulation of milk cows). It should be emphasized that male/female differences in hormones aren't absolute but a matter of degree: one sex may have higher concentrations and more receptors for a particular hormone. In particular, becoming pregnant is not the only way to acquire the hormones necessary for breast growth and milk production. For instance, normally circulating hormones stimulate a milk production, termed witch's milk, in newborns of several mammal species. Direct injection of the hormones estrogen or progesterone (normally released during pregnancy) triggers breast growth and milk production in virgin female cows and goats—and also in steers, male goats, and male guinea pigs. The hor-monally treated virgin cows produced on the average as much milk as their half-sisters that were nursing calves to which they had given birth. Granted, hormonally treated steers produced much less milk than virgin cows; you shouldn't count on steer's milk in the supermarkets by next Christmas. But that's not surprising since the steers have previously limited their options: they haven't developed an udder to accommodate all the mammary gland tissue that hormonally treated virgin cows can accommodate.

There are numerous conditions under which injected or topically applied hormones have produced inappropriate breast development and milk secretion in humans, both in men and in non-pregnant or non-nursing women. Men and women cancer patients being treated with estrogen proceeded to secrete milk when injected with prolactin; among such patients was a sixty-four-year-old man who continued to produce milk for seven years after hormonal treatment was discontinued. (This observation was made in the 1940s, long before the regulation of medical research by human subjects protection committees, which now forbid such experiments). Inappropriate lactation has been observed in people taking tranquilizers that influence the hypothalamus (which controls the pituitary gland, the source of prolactin); it also has been observed in people recovering from surgery that stimulated nerves related to the suckling reflex, as well as in some women on prolonged courses of estrogen and progesterone birth-control pills. My favorite case is the chauvinist husband who kept complaining about his wife's "miserable little breasts," until he was shocked to find his own breasts growing. It turned out that his wife had been lavishly applying estrogen cream to her breasts to stimulate the growth craved by her husband, and the cream had been rubbing off on him.

At this point, you may be starting to wonder whether all these examples are irrelevant to the possibility of normal male lactation, since they involve medical interventions such as hormone injections or surgery. But inappropriate lactation can occur without high-tech medical procedures: mere repeated mechanical stimulation of the nipples suffices to trigger milk secretion in virgin females of several mammal species, including humans. Mechanical stimulation is a natural way of releasing hormones by means of nerve reflexes connecting the nipples to hormone-releasing glands via the central nervous system. For instance, a sexually mature but virgin female marsupial can regularly be stimulated to lactate just by fostering another mother's young onto her teats. The "milking" of virgin female goats similarly triggers them to lactate. That principle might be transferable to men, since manual stimulation of the nipples causes a prolactin surge in men as well as in non-lactating women. Lactation is a not infrequent result of nipple self-stimulation in teenage boys.

My favorite human example of this phenomenon comes from a letter to the widely syndicated newspaper column "Dear Abby." An unmarried woman about to adopt a newborn infant longed to nurse the infant and asked Abby whether taking hormones would help her to do so. Abby's reply was: Preposterous, you'll only make yourself sprout hair! Several indignant readers then wrote in to describe cases of women in similar situations who succeeded in nursing an infant by repeatedly placing it at the breast.

Recent experience of physicians and nurse lactation specialists now suggest that most adoptive mothers can begin producing some milk within three or four weeks. The recommended preparation for prospective adoptive mothers is to use a breast pump every few hours to simulate sucking, beginning about a month before the expected delivery of the birth mother. Long before the advent of modern breast pumps, the same result was achieved by repeatedly putting a puppy or a human infant to the breast. Such preparation was practiced especially in traditional societies when a pregnant woman was sickly and her own mother wanted to be ready to step in and nurse the infant in case the daughter proved unable to do so. The reported examples include grandmothers up to the age of seventy-one, as well as Ruth's mother-in-law Naomi in the Old Testament. (If you don't believe it, open a Bible and turn to the Book of Ruth, chapter 4, verse 16.)

Breast development occurs commonly, and spontaneous lactation occasionally, in men recovering from starvation. Thousands of cases were recorded in prisoners of war released from concentration camps after World War II; one observer noted five hundred cases in survivors of one Japanese POW camp alone. The likely explanation is that starvation inhibits not only the glands that produce hormones but also the liver, which destroys those hormones. The glands recover much faster than the liver when normal nutrition is resumed, so that hormone levels soar unchecked. Again, turn to the Bible to discover how Old Testament patriarchs anticipated modern physiologists: Job (chapter 21, verse 24) remarked of a well-fed man that "His breasts are full of milk."

It has been known for a long time that many otherwise perfectly normal male goats, with normal testes and proven ability to inseminate females, surprise their owners by spontaneously growing udders and secreting milk. Billy-goat milk is similar in composition to she-goat milk but has even higher fat and protein content. Spontaneous lactation has also been observed in a captive monkey, the stump-tailed macaque of Southeast Asia.

In 1994, spontaneous male lactation was at last reported in males of a wild animal species, the Dyak fruit bat of Malaysia and adjacent islands. Eleven adult males captured alive proved to have functional mammary glands that yielded milk when manually expressed. Some of the males' mammary glands were distended with milk, suggesting that they had not been suckled and as a result milk had accumulated. However, others may have been suckled because they had less distended (but still functional) glands, as in lactating females. Among three samples of Dyak fruit bats caught at different places and seasons, two included lactating males, lactating females, and pregnant females, but adults of both sexes in the third sample were reproductively inactive. This suggests that male lactation in these bats may develop along with female lactation as part of the natural reproductive cycle. Microscopic examination of the testes revealed apparently normal sperm development in the lactating males.

Thus, while usually mothers lactate and fathers don't, males of at least some mammal species have much of the necessary anatomical equipment, physiological potential, and hormone receptors. Males treated either with the hormones themselves, or with other agents likely to release hormones, may undergo breast development and some lactation. There are several reports of apparently normal adult men nursing babies; one such man whose milk was analyzed secreted milk sugar, protein, and electrolytes at levels similar to those of mother's milk. All these facts suggest that it would have been easy for male lactation to evolve; perhaps it would have required just a few mutations causing increased release or decreased breakdown of hormones.

Evidently, evolution just didn't design men to utilize that physiological potential under normal conditions. In computing terminology, at least some males have the hardware; we merely haven't been programmed by natural selection to use it. Why not?

To understand why, we need to switch from physiological reasoning, which we have been using throughout this chapter, back to the evolutionary reasoning that we were using in chapter 2. In particular, recall how the evolutionary battle of the sexes has resulted in parental care being provided by the mother alone in about 90 percent of all mammal species. For those species, in which offspring will survive with zero paternal care, it's obvious that the question of male lactation never arises. Not only do males of those species have no need to lactate; they also don't have to bring food, defend a family territory, defend or teach their offspring, or do anything else for their offspring. The male's crass genetic interests are best served by chasing other females to impregnate. A noble male carrying a mutation to nurse his offspring (or to care for them in any other way) would quickly be outbred by selfish normal males that forewent lactation and thereby became able to sire more offspring.

Only for those 10 percent of mammal species in which male parental care is necessary does the question of male lactation even deserve consideration. Those minority species include lions, wolves, gibbons, marmosets—and humans. But even in those species requiring male parenting, lactation isn't necessarily the most valuable form that the father's contribution can take. What a big lion really must do is to drive off hyenas and other big lions bent on killing his cubs. He should be out patrolling his territory, not sitting home nursing the cubs (which the smaller lioness is perfectly capable of doing) while his cubs' enemies are sneaking up. The wolf father may make his most useful contribution by leaving the den to hunt, bringing back meat to the wolf mother, and letting her turn the meat into milk. The gibbon father may contribute best by looking out for pythons and eagles that might grab his offspring, and by vigilantly expelling other gibbons from the fruit trees in which his spouse and offspring are feeding, while marmoset fathers spend much time carrying their twin offspring.