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COMMENTARY

EDITOR'S NOTE

With this issue we are inaugurating a new feature in *Medical Anthropology*—a section devoted to discussion and commentary of important issues. The primary purpose is to provide an opportunity for amplification and debate concerning articles published in the journal. We will also consider short research reports or discussion of current and important topics. This first “Commentary” section contains discussions and research reports related to the question of milk insufficiency and infant feeding practices. Readers are referred to *Medical Anthropology*, 4(2) 1980 for the article, “The Insufficient Milk Syndrome: A Biocultural Explanation,” by Judith Gussler and Linda Briesemeister, which initiated the commentary presented here.

The Insufficient Milk Syndrome: An Alternative Explanation

**TED GREINER, PENNY VAN ESTERIK,
and MICHAEL C. LATHAM**

“Insufficient milk” has long been cited as a major reason given by women for the termination of breast feeding, which many call “sevrage.” While most authors have maintained either a skeptical or a bewildered stance toward such data, some appear to assume simply that many women cannot produce sufficient breast milk.

Since one of the implications of this assumption is that a substitute for human milk is a widespread necessity, even in early infancy, this view is attractive to the infant formula companies who have stressed the importance of *insufficient milk* in their writings. One such company, Ross Laboratories, has been especially active in this regard, both in published papers (Cox 1972 and 1980; Benson 1976) and in their film, “Mothers in Conflict, Children in Need.” David Cox, Chairman of Ross, wrote (1972) that “Although some breast-feeding failures may be due to desire on the mothers’ part not to breast feed, the great majority have been quite conclusively shown

to derive from drying up of a mother's milk supply or from milk of inadequate quality to satisfy her infant's hunger needs."

Dr. Judith Gussler (a medical anthropologist at Ross Laboratories) and co-author Linda Briesemeister have made a valuable contribution to the literature on breast feeding by providing a detailed discussion of the important question of "insufficient milk" as a stated reason for termination of breast feeding (Gussler and Briesemeister 1980). Their major arguments are that (1) "insufficient milk" is by far the major cause of early termination of breast feeding, at least in urban areas; (2) "insufficient milk" is a "real" phenomenon, not simply an excuse given by mothers to cover up other reasons for termination of breast feeding, and (3) "insufficient milk" is caused largely by a lack of constant contact between mother and infant.

The authors hypothesize that a "pattern of scheduled and widely spaced feedings at the breast produces several pathways to real or perceived milk insufficiency" (p. 158). They bring together good evidence suggesting that many factors associated with modernization and urbanization act to place a distance between mother and infant, thus reducing sucking and potentially leading to "insufficient milk." These include hospital maternity ward practices, methods of transporting infants, sleeping arrangements, and various parental attitudes toward child care. The authors also argue that baby and mother need constant contact. As evidence they cite first the composition of human milk, supposedly of "dilute, low fat, relatively low protein content," and second, the fact that human beings are primates and therefore, "Their feeding pattern should be similar to that of other primates" (p. 151). Additional evidence comes from "traditional-physiological" feeding patterns, particularly in hunter-gatherer societies.

If these hypotheses are correct, they have far-reaching implications. If constant maternal-infant contact is virtually a precondition for an adequate supply of breast milk, societies whose child care patterns result in less maternal-infant contact than that found among primates or certain "hunter-gatherer" societies would appear doomed to a high prevalence of "insufficient milk." Thus, supplementation or substitution of breast milk would appear to be an inevitable outcome in urbanizing areas.

Our primary purpose in writing this response is to communicate what we believe to be a substantially more optimistic picture about breast feeding than that presented by Gussler and Briesemeister.

Their stress on the constant contact necessary between mothers and infants could further discourage women from breast feeding or perhaps even adopting a mixed feeding pattern. Urban working women in particular recognize their inability to maintain close contact with their infants. By stressing the difficulties in biological breast feeding, the authors leave the impression of an inherent incompatibility between breast feeding and urban life styles.

We do believe that many mothers both in industrialized and developing countries give "insufficient milk" as the reason why they discontinued breast feeding. We are especially concerned when this reason is cause for sevrage in the first six months of life in poor families in developing countries because of the disastrous consequences for the infant. But we also have some concern for the earlier than desirable termination of breast feeding in older infants and in other circumstances. As stated, we appreciate that a diminishing amount of breast milk production nearly always precedes sevrage, but we believe that it is triggered by a period of reduced nipple stimulation, often because alternative feeding has replaced breast feeding to a variable degree. The question at issue is why mothers increase alternative feedings to replace breast milk. We advocate frequent and close contact between the mother and her infant both to allow for adequate breast feeding and also for other reasons, but we do believe that successful breast feeding and adequate lactation are possible without "constant contact" between baby and mother.

Our interpretation of the literature and our own field experience suggest that successful breast feeding is possible within a variety of social and cultural environments providing a wide range of intensity of maternal-infant contact. In this paper we present evidence to suggest that Gussler and Briesemeister have overstated the case for all three of the arguments listed above: the prevalence of "insufficient milk," the extent to which it is a "real" phenomenon, and the frequency of lack of constant maternal-child contact as a cause of "insufficient milk."

We have conducted a literature search for additional articles on "reasons for weaning" and include in our appendix, arranged similarly to Gussler and Briesemeister's (pp. 165-67), all of the additional studies that we have found. These data are not strictly comparable to theirs, since they concentrated mainly (though not exclusively) on "early" termination of breast feeding and on urban areas. We included all studies with relevant evidence on reasons for

termination of breast feeding regardless of the age termination of breast feeding occurred, and also included several studies, appropriately labelled, in which reasons were given for starting bottle feeding rather than terminating breast feeding. In many cases, authors provided raw data rather than percentages, and the sample sizes to which their data were applicable were uncertain. In such cases, we calculated the percentage of responses accounted for by "insufficient milk" or related reasons. When it was uncertain which sample size was applicable we chose the smaller one. This would have the effect of maximizing the percentage of "insufficient milk" responses. Nevertheless, we find the prevalence of "insufficient milk" to be somewhat less, in general, than that suggested by the studies cited by Gussler and Briesemeister. They listed six studies (14 percent) of the studies cited in their appendix) in which "insufficient milk" accounted for less than 20 percent of the reasons for termination of breast feeding. We found twenty-six such studies (50 percent of those we cite). The figure increases to 54 percent when studies reporting "reasons for starting bottle" are omitted.

We suspect that in many, if not most, cases mothers genuinely believe they have "insufficient milk," whether they do or not. When they do have "insufficient milk," no doubt the major cause is a physiologically mediated reduction in breast milk quantity due to inadequate sucking stimulation to the nipples. As pointed out earlier, this is often due to replacement of breast milk with formula or with some other breast milk substitutes. At least among exclusively breast feeding mothers, Gussler and Briesemeister may be right that this often is caused by factors associated with urbanization and modernization, which increase the separation of mother and infant. However, this cannot be as important as they posit simply because "insufficient milk" does not appear to occur to any great extent in many modernizing areas. This may be true in modern China, where nearly all mothers return to work relatively soon postpartum (Wray 1975). Though their infants are usually close by so they can breast feed during the day, they clearly cannot maintain constant contact with them. Yet the little information which is available from China suggests that exclusively breast-fed infants grow as well as, or better than, those on artificial or mixed feeding regimes (Shanghai Child Health Care Coordinating Group 1974).

Gussler and Briesemeister argue that "insufficient milk" is a "real" phenomenon, not merely a rationalization given by women who do not want to breast feed. They argue that "insufficient milk" is a transcultural phenomenon, and that it would appear unlikely

that so many women from so many cultures would create the same rationalization. Furthermore, they point out, many women who are highly motivated to breast feed give up because of “insufficient milk.”

In fact, there can be little doubt that “insufficient milk” is given as the reason for termination of breast feeding by many women who know that they have enough milk or could have enough if they wanted to breast feed. Certainly, either the motivation to breast feed or much basic knowledge must be lacking among women who do not initiate breast feeding or who stop in the first three days and give “insufficient milk” as the reason. It is not uncommon for health professionals to encounter a situation in which a mother who claims that she has *no* breast milk is found to have copious amounts upon a brief examination. This may account for the tendency among medical practitioners to dismiss “insufficient milk” as a “real” phenomenon. Unfortunately, we know of no research on the prevalence of this phenomenon, nor of attempts to ascertain mothers’ reasons for claiming not to have milk when in fact they do.

A few studies have probed further in questioning mothers who give “insufficient milk” as the reason for termination of breast feeding. Newson and Newson (1963), in a study in the United Kingdom, found that 55 percent of women who gave “insufficient milk” as the reason for termination of breast feeding actually had not wanted to breast feed and would not have continued to do so even if they had had enough milk. Sjölin et al. (1977) in Sweden found that all but 17 percent of women who gave “milk dried up” as a reason for termination of breast feeding actually gave other reasons on further probing. Huffman et al. (1980) found that 59 percent of women who gave “insufficient milk” as the reason for termination of breast feeding were actually pregnant at the time, and in Bangladesh, where their study took place, this was probably the real reason for termination of breast feeding. Similarly, Greiner and Latham (1981b) found that women in St. Vincent who gave nonspecific reasons for termination of breast feeding were more likely than others to have had another child within several months of the termination of breast feeding. (However, as discussed below, they found almost no cases of “insufficient milk.”) Butz (1979) hypothesized that “It is easier to blame ‘lack of milk,’ ‘child’s unwillingness,’ or ‘sickness’ than to admit a growing interest or economic incentive to spend time in other ways.” (However, he provided no supporting evidence for this.)

Other motivations for supplying a culturally appropriate reason for

for terminating breast feeding have been suggested. Helsing (1978) points out that terminating breast feeding for a socially acceptable reason such as "insufficient milk" does not cast doubt on a woman's quality as a mother. Further, "insufficient milk" might be considered a suitable reason to give to medical personnel. Sjölin (1977) found that, while women gave "insufficient milk" as a reason for their own termination of breast feeding, they attributed much less socially acceptable reasons to other women.

The data in our appendix suggest that the West Indies, the area where Gussler did her research, appears to be the area with the lowest level of reported "insufficient milk." In the case of St. Vincent, two independent studies in different parts of the country done several years apart found almost no mothers complaining of "insufficient milk" or giving it as the reason for termination of breast feeding (Antrobus 1971; Greiner and Latham 1980b). There, as appears to be the case in Barbados and some other West Indian islands, "the baby weaned itself" tended to be a more commonly given reason for termination of breast feeding.

Nearly all of these West Indian studies are in English-speaking countries with similar cultural, economic, and political histories and a similar type of infant feeding pattern. This pattern is typically characterized by nearly universal initiation of breast feeding, the early addition of supplemental liquids, largely from the bottle, followed by several months of "mixed feeding" before breast feeding terminates. The fact that "insufficient milk" is the major reason for termination of breast feeding on some islands, yet almost unknown on others, is hard to explain if Gussler and Briesemeister's hypothesis is correct. A much more plausible explanation is that beliefs about breast feeding are held in common among women of similar cultural background and in geographical proximity to each other. While women on one island may be predisposed to watch for signs of "insufficient milk," women on another island are watching for signs of their babies' weaning themselves.

Thus, we would propose an alternative explanation for the "insufficient milk syndrome" in cases where it is a "real" phenomenon. The cause may vary and, in fact, in many cases there may be several causal factors. It is extremely difficult to distinguish cultural from biological factors when attitudes, beliefs and perceptions directly affect the process of lactation. We suggest that a distinction should be made between the phenomenon when it occurs during exclusive breast feeding, and when it occurs once supplemental

feeding has begun. We suggest that it is largely a cultural phenomenon when it occurs during exclusive breast feeding, and largely a physiological response to reduced nipple stimulation once supplemental feeding has begun.

Among women who are exclusively breast feeding, there are many factors which could lead them to begin supplementation. In a careful prospective study of breast feeding, Sjölin et al. (1979) found that breast feeding was often disrupted by minor or seemingly trivial incidents. There are many normal physiological events commonly associated with lactation which could be interpreted by the mother as signs of diminishing or insufficient milk. These include maternal events such as a reduction in breast size, a disappearance of the feeling of fullness in the breasts, or a temporary inhibition of the ejection reflex. Infants may experience temporary fluctuations in appetite, perhaps associated with a "growth spurt," or may evince crying or other seeming "hunger signals" for many reasons other than hunger. But women who are educated or in some sense "conditioned" to believe that "insufficient milk" is a common problem to which they are susceptible, may be quick to interpret such signs as "insufficient milk." Their concern or fear could occasion a psychologically mediated failure of the milk ejection reflex and lead to the introduction to or increased reliance on supplementary bottles or other feeds. The result would be a reduction in frequency and vigor of sucking and a true hormonally-mediated reduction in milk supply. The insufficient milk syndrome is secondary to the replacement of breast milk with formula or some other breast milk substitute. This leads to less sucking at the breast, less nipple stimulation, lower levels of prolactin, and then reduced breast milk production.

Among infants who are not exclusively breast fed, the factors discussed above may come into play, as may many others, but the most parsimonious explanation for "insufficient milk" is that supplemental feeding is causing a reduction in sucking stimulation of the nipples. Several studies have found an association between the initiation of bottle feeding and the termination of breast feeding. Two of these are in West Indian populations where an extended period of mixed feeding is standard practice. Thus, whereas mothers usually are not introducing the bottle with the intention of replacing breast milk, let alone terminating breast feeding, statistically bottle feeding would appear to be having this effect (Gueri et al. 1978; Greiner and Latham 1971a). Unfortunately, this issue has

not received the detailed research it deserves. It is interesting to note that ongoing Cornell research in North Yemen has found that many women who gave "insufficient milk" as the reason for termination of breast feeding felt themselves that the introduction of the bottle was the cause.

A corollary to the hypothesis discussed above is that there are two crucial factors that determine whether "insufficient milk" is likely to be prevalent in a community. First is the pattern of supplemental feeding: the earlier its initiation, the larger its quantity, and the more it is fed by the bottle, the greater will be its impact on breast milk supply. The second factor is maternal attitudes toward breast feeding and in particular socially agreed-upon perceptions about the local prevalence of "insufficient milk."

But no matter what the cause of "insufficient milk," it need not lead to termination of breast feeding or even to the initiation of bottle feeding. *Increasing milk production can usually be achieved by putting the infant to the breast more often and having confidence that this will succeed.* Ongoing research in Yemen suggests that rural mothers know this much more often than urban mothers. In Thailand, too, rural mothers confidently took successful steps to increase their breast milk whenever necessary, while 65 percent of a sample of urban professional women said they would deal with the problem by supplementing with infant formula (Van Esterik 1977).

A belief system which predisposes women to "insufficient milk" may be spread through interpersonal channels and passed from generation to generation, similar to many belief systems. However, often it may be initiated or furthered through contact with inadequately trained health professionals or by promotional activities of companies marketing infant foods or feeding bottles. Examples of past infant food advertising based on such themes as "when breast milk fails" or "when nature is inadequate" are given in Greiner, 1975 and 1977.

Critics of infant food companies generally acknowledge that the companies' promotional activities are only one of many factors responsible for the decline of breast feeding. Other factors playing a role include the often negative attitude of the medical profession, Western influence, including the view of the breast as a sex object, unnecessary difficulties for women when they enter paid employment away from home, and more. *But the promotional activities of companies marketing infant formula do deserve to be included*

among causes of "insufficient milk," despite their exclusion by those with vested interest. It is difficult to avoid viewing the article by Gussler and Briesemeister in this light, given the fact that they not only failed to discuss the role of infant food company promotional activities, but also completely ignored the role of bottle feeding as a cause of "insufficient milk." Furthermore, among the social and institutional changes necessary for successful breast feeding (p. 162), they might have included restrictions on marketing and promotion of infant formula such as those in the international code of ethics recently adopted by the World Health Organization (WHO 1979).

Including these factors would provide a more realistic and complete picture of infant feeding practices, and add at least three pathways to "insufficient milk" in Gussler and Briesemeister's figure on p. 158. First, "insufficient milk" can result from infant food company promotional activities that undermine a mother's confidence in the quality or quantity of her own milk, especially when these promotional efforts are channeled via trusted health professionals. Second, promotional activities can help create and extend socially held beliefs about the likelihood of a woman suffering from "insufficient milk." Again, this can be especially powerful if health professionals as well as mothers are anxiously waiting for the slightest sign of "insufficient milk." Third, infant food companies can extend the availability and awareness of their products to ever wider markets. This is often combined with promotional activities to ensure that the response to "insufficient milk," when perceived, is to supplement rather than attempt to increase the volume of breast milk.

Gussler and Briesemeister's article is a significant contribution to lactation studies and we share many of the views expressed in it. In this paper we have concentrated on areas where we disagree or where we think that their interpretation is not fully supported by fact. We do this not in order to be combative but because we believe that such discussions can be constructive. We hope that their paper and ours will stimulate research to answer some of the many questions raised. Good studies are needed which can help all of us in the difficult task of improving the nutritional status and health of infants and young children in the developing countries. In the meantime, while we await the results of research, we should encourage programs which are supportive of breast feeding and which combat those factors known to hasten its decline.

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Mothers' Expressed Reasons for Termination of Breast Feeding (TBF)
Focusing on "Insufficient Milk" (IM)

<u>Researchers</u>	<u>Country</u>	<u>Rural/ Urban</u>	<u>Reasons for TBF</u>
CENTRAL AND SOUTH AMERICA; CARIBBEAN			
Sousa, et al.	Brazil	Urban	31% IM, 18% refused breast
Antrobus	St. Vincent	Rural	1% IM, 37% illness of baby, 29% weaned self
Greiner (1977b)	St. Vincent	Small towns	1% IM, 32% weaned self
Reddy	Jamaica and Barbados	Both	18% IM (reason for starting -bottle)
Bramble (1969)	Montserrat	?	23% IM
Larkin	Dominica	Urban	35% IM (reason for starting bottle)
Mata	Guatemala	Rural	3% IM, 60% pregnancy
DeMorales and Larkin	Jamaica	Urban	17% IM, 25% weaned self, 15% pregnancy
Gueri, et al.	Trinidad	Urban	36% IM, 13% baby not satisfied (reasons for starting bottle)
Gibbons	Barbados	Both	6% IM, 42% weaned self, 24% right age
PAHO	Barbados	Both	8% IM, 34% weaned self, 13% right age
Almroth and Latham	Jamaica	Rural	17% IM, 35% weaned self (reasons for starting bottle: 11% IM, 20% breast milk alone not enough, 28% get baby used to the bottle)
EUROPE			
Bacon and Wylie	U.K.	Urban	42% IM
Buzina	Yugoslavia	Both	45% IM
Klackerberg and Klackenberglarsson	Sweden	Urban	About 33% IM

(Continued)

<u>Researchers</u>	<u>Country</u>	<u>Rural/ Urban</u>	<u>Reasons for TBF</u>	<u>Researchers</u>	<u>Country</u>	<u>Rural/ Urban</u>	<u>Reasons for TBF</u>
FAR EAST AND PACIFIC							
Chen	Malaysia	Urban	67% IM	Huffman, et al.	Bangladesh	Rural	18% IM (but 59% of these were pregnant), 53% pregnancy
Jimeno	Philippines	Rural	7% IM, 32% right age, 18% mother's work	Karkal	India	Rural	83% IM
Platt and Gin	China	Urban	16% IM, 50% pregnancy (1938 study)	Ahmad, et al.	Bangladesh	Rural	6% IM, 55% right age, 25% pregnancy
Millis	Malaysia	?	58% "lactation failure"	Bornstein	Yemen Arab Republic	Urban	27% IM
Paredes, et al.	Philippines	Urban	54% IM	Bansal, et al.	India	Both	17.5% IM, 71% right age
Consumers Assoc. of Penang	Malaysia	Both	1% IM (7% IM once mother returned to work), 36% convenience (reasons for starting bottle)	Vijayadurgamba and Geervani	India	Urban	23% IM, 50% pregnancy
Kalaw	Philippines	Both	4% "no more milk", 40% right age, 18% pregnancy	Al Rady, et al.	Iraq	Urban	70% IM (reason for starting bottle)
Tan, et al.	Indonesia	Rural	IM not listed (<16%), 27% right age, 15% pregnant	Kamel	Egypt	Rural	2% IM, 67% pregnancy, 23% right age
Surjono, et al.	Indonesia	Both	26% IM, 15% breast milk never came	Kuwait Unit of Nutrition	Kuwait	Both	63% IM in upper class sample 28% IM in lower class sample
Guthrie, G., et al.	Philippines	Urban	10% IM, 29% pregnancy (percentages calculated from combined samples)	NORTH AMERICA			
Guthrie, 1962	Philippines	Urban	9% IM, 18% pregnancy, 15% right age	Bramble (1978)	Canada	Urban	28% IM (33% of reasons for starting bottle)
Guthrie, 1964	Philippines	Both	7% IM, 37% pregnancy, 26% right age	Ladas	United States	Both	Among La Leche League members, 3% IM; others, 22% IM
Guthrie, 1967	Philippines	Rural	12% IM, 36% right age	French	United States (Navajo)	Rural	41% IM
Guthrie, 1967	Philippines	Urban	20% IM, 23% right age	Mohrer	United States	Urban	<6% IM (not listed) (reason for starting bottle)
Guthrie, 1968	Philippines	Urban	14% IM, 69% right age	Cole	United States	Urban	34% IM
NORTH AFRICA, MIDDLE EAST, SOUTH ASIA							
Mamatbachi, et al.	Libya	Urban	32% IM	Alakija and Ukoli	Nigeria	Urban	56% IM (reasons for starting bottle)
Kamal, et al.	Egypt	Urban	25% IM (77% IM reason for starting bottle)	Drejer	Cameroon	Urban	59% IM (reasons for starting bottle)
SUB-SAHARAN AFRICA							
				Namboze	Uganda	Urban	18% IM, 58% right age, 14% pregnancy

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