

Historical Perspectives on Breastfeeding

*Two essays by
Sara F. Matthews Grieco
and Carlo A. Corsini*



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Preface

According to that wise, if somewhat overused, adage: those who ignore the lessons of history are condemned to repeat its errors. Indeed, Winston Churchill once claimed that “The only thing man learns from history is that man does not learn from history.” Increasingly, it appears that repeating the errors of the past is a common trait in human society. But that should provide no excuse for relaxing our efforts to do better, as Churchill would surely have agreed.

One of the most basic of all human practices is the breastfeeding of infants. By and large, throughout human history, both biology and medical authority — ‘modern’ as well as traditional — have reinforced this practice. But social and economic pressures, well back into recorded history, have often forced mothers to abandon breastfeeding or to exclude it as an appropriate option for infant feeding. What is more surprising, in our supposedly enlightened contemporary world, medical opinion and hospital practices have often been a major obstacle to the initiation or proper continuation of breastfeeding.

The ongoing decline in the practice of breastfeeding in most countries of the world has prompted UNICEF and the World Health Organization (WHO) to organize a major ‘Global Initiative’ to promote breastfeeding during this decade of the 1990s. Following a technical meeting hosted by WHO in Geneva in June 1990, a Policymakers’ Meeting was held in Florence at the *Spedale degli Innocenti*, 30 July – 1 August 1990, with the sponsorship of these two United Nations agencies, the United States Agency for International Development (USAID) and the Swedish International Development Authority (SIDA). The meeting was chaired by the Minister of Health of Nigeria, Dr. Olikoye Ransome-Kuti, and senior officials from 30 industrialized and developing countries participated. A copy of the **Innocenti Declaration** adopted at that meeting is included as an appendix to this volume.

Under an appropriate sub-title of “Back to Basics”, the documentation for the meeting in Florence concluded:

Breastfeeding is an essential part of child survival and development. But with the influence of modern maternity-care procedures, commercial promotion of artificial infant formulas and urbanization, its practice has been declining in most countries. Studies indicate that more than 1 million infants and young children die every year from diseases that can be prevented with adequate breastfeeding. In addition, thousands get malnourished as its practice continues to decline...

The benefits of breastfeeding are well documented. It uniquely enhances a child’s psychological, nutritional and immunological needs. Especially in areas of extreme poverty, in the worst of conditions, infants who are exclusively breastfed through the first 4 to 6 months of life thrive better than those who are not. Breastfeeding is also beneficial to mothers. By suppressing ovulation, it contributes significantly to child-spacing.

The two papers included in this volume were commissioned as part of the contribution to the Policymakers' Meeting in Florence by the UNICEF International Child Development Centre and the *Istituto degli Innocenti*. This publication represents one of our efforts to take advantage of the lessons of history, including the extraordinary historical heritage of Florence and its famous foundling hospital, the *Spedale di Santa Maria degli Innocenti*,* to help us achieve a better understanding of the complex social issues surrounding attempts to improve the well-being of children.

During this hospital's experience of over five centuries of caring for abandoned and other children in need, an extraordinarily rich heritage has evolved. One especially relevant example, nine decades before the UNICEF/WHO meeting in Florence last year, was another major conference on breastfeeding hosted at the Spedale degli Innocenti: the *Secondo Congresso per L'Igiene dell'Allattamento*, (October 1901). It is remarkable how similar the topics reviewed at that Congress, both by scientists and policymakers, were to those on the agenda of the 1990 meeting. Of particular interest to these early 20th century authorities were the policy measures required to support mothers in their efforts to breastfeed their infants and particularly to address the needs of women from the poorer strata of Italian society.

Those same concerns have now moved to a larger and considerably more challenging global agenda. We are pleased to present this volume, a contribution bearing lessons from history, which we hope will prove useful in encouraging the Global Initiative to promote 'Breastfeeding in the 1990s'.

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President
Istituto degli Innocenti

James R. Himes
Director
UNICEF International
Child Development Centre

* Referred to in the body of the text as 'Spedale degli Innocenti' or 'Spedale'.

Introduction

Historical research on breastfeeding patterns, which was first carried out in the 1960s and early 1970s, was largely spurred by contemporary concerns about the potentially devastating effects of a massive shift from breastmilk to artificial means of infant feeding, especially in the Third World. Evidence from Chile, Mexico, the Philippines, Singapore and other developing countries showed that the proportion of urban women who breastfed their infants for prolonged periods was decreasing dramatically. This raised considerable alarm about the consequences that the decline of breastfeeding might have on the health of infants and young children. Indeed, there were reasons to fear that these changes would result in significantly higher rates of infant mortality. On the other hand, in view of the well-established contraceptive effect of breastfeeding, it could also be expected that such a shift would substantially increase fertility, and would thereby contribute to an increase in population growth rates.

As John Knodel pointed out in his influential review of the subject published in the American journal *Science* in 1977,¹ any realistic assessment of the impact of the decline of breastfeeding on population growth requires that fertility and mortality implications be considered jointly. Unfortunately, at that time there were only a few studies of the effects of feeding practices on infant mortality in contemporary Third World countries. This suggested the opportunity of turning to the past and making use of the historical documentation available for the United States and for a number of European countries.

One remarkable result which emerged from this historical research was that, although prolonged breastfeeding appeared to have prevailed in much of Europe's population until quite recently, there were nevertheless important exceptions. Accurate information about the proportion of children reported to be breastfed as well as on the duration of breastfeeding was to be found in medical reports and official surveys dating back to the late 19th and early 20th centuries. They indicated that in many regions of central and eastern Europe infants were breastfed for only a short time or not at all. In place of breastmilk they were generally fed meal paps and sugar water. A spate of detailed statistical analyses, including the work by Knodel himself on Bavaria, established the existence of a strong correlation between regional differences in breastfeeding and infant mortality rates, which in late 19th century Europe still ranged from less than 100 per 1,000 in Sweden to over 400 per 1,000 in some parts of Germany. Even more decisively, a number of half-forgotten studies published since the end of the 19th century afforded direct comparison of the mortality risks for breastfed and artificially fed infants. Although their data were not always directly comparable in all respects, they consistently showed that the chances of surviving to age one were substantially higher for

breastfed than for artificially fed infants. In some cases, mortality rates among the latter could be six times higher than among the former.

The empirical results yielded by this first wave of historical studies of the effects of varying infant feeding practices proved very valuable to demographers, economists and other social scientists interested in modelling the potential demographic impact of the decline of breastfeeding in contemporary Third World countries. But they also raised questions of considerable interest for social, demographic and economic historians. Recent work in historical demography had revealed that in pre-industrial times Europe displayed a number of demographic systems which were very different in their causes, formal properties and historical consequences. It was clear, in particular, that some parts of Europe had been characterized by relatively low levels of both fertility and mortality and that this 'low-pressure' demographic regime had allowed these societies to achieve a more favourable balance of population and resources than other European societies with higher levels of fertility and mortality. There could be little doubt that in some cases these differences largely depended on variations in nuptiality. But levels of marital fertility and, of course, infant mortality could also vary quite significantly, which suggested that breastfeeding might have played a much more significant role in the demographic and economic history of Europe than had been previously realized.

These questions have produced a second wave of historical investigations of infant feeding practices, which differ from the previous studies both in their methodological features and in their broader scope of inquiry. The earlier studies had mostly concentrated on a comparatively recent period, namely the late 19th and early 20th centuries, and on particular sources, namely census returns, official surveys and medical reports, all providing aggregate data. In the last ten or fifteen years, technical advances in historical demography have opened up new avenues of research. Of special relevance is the method known as 'family reconstitution', which allows the historical demographer to reconstruct the whole reproductive career of a married couple through the nominal linking of birth, death and marriage registers, and to thereby calculate very precise measures of infant mortality. Micro-level reconstitution studies offer two significant advantages over the more conventional approaches that focus on published macro-level data covering the broader population. Since they are typically based on parish registers, family reconstitution studies can extend coverage further into the past for periods when census and vital statistics data are generally not available. Moreover, the detailed examination of the reproductive histories of women made possible by the use of nominal reconstitution methods can allow a more sophisticated quantitative analysis of the relationship between breastfeeding and fertility. Accurate measurements of the difference between the average length of the first and second birth intervals, for instance, can be used to produce estimates of the average length of the period of post-partum non-susceptibility.

However, in order to understand why different populations in the past adopted the varying patterns of breastfeeding which led to such dramatic consequences in fertility and infant mortality, the quantitative methods of historical demography are unlikely to suffice. An important and in many ways essential complement to their efforts can be expected to come from the relatively new but already thriving field of the social history of women and childhood, where increasing attention is being devoted to the study of the social, economic and cultural context of infant feeding and weaning practices in the past.

The main results achieved by scholarly research in this new field of historical study are ably surveyed by Sara Matthews Grieco in her wide-ranging essay on breastfeeding and wet nursing in Europe from the 15th century to the end of the *ancien régime*. One of the principal merits of this paper is that it reminds us that in historic Europe artificial feeding was by no means the only alternative to maternal breastfeeding. In many past societies the crucial alternative was rather between maternal breastfeeding and 'mercenary' breastfeeding by wet nurses. As the rich material presented by Matthews Grieco shows, wet nursing was especially widespread in France, Italy and other Mediterranean countries, where popular beliefs, socio-economic and cultural factors, and sometimes even medical theory all contributed to a generalized rejection of maternal breastfeeding, particularly among the upper strata of the population. For reasons that could range from the inconvenience of a temporary withdrawal from social duties to anxieties about the aesthetic consequences of nursing, women of any status at all rarely breastfed their offspring. They preferred to send their newborn sons and daughters to wet nurses, preferably to women living in the country as they were believed to have more abundant and healthier milk than their urban counterparts.

It should be noted, however, that a large number of infants were sent to wet nurses not only by well-to-do parents, but also by working mothers whose contribution to the household economy could not be spared, and by officials in charge of foundling hospitals where infants were abandoned by unmarried mothers or by presumably poor parents who could not afford to bring them up. The relationship between the spread of wet nursing and the spread of foundling hospitals is itself intriguing. One major question still open in the history of charity and assistance to infancy in Europe is why large foundling homes were to be found much more frequently, and at a much earlier date, in southern Europe than in the northern countries. Many explanations have been put forward, but it is worth mentioning that one of the leading authorities on this subject, the British historian Brian Pullan, has recently suggested that large-scale foundling hospitals must have flourished more naturally in societies given to wet nursing because they offered the poor analogous though inferior facilities to those paid for by better-off people.² Be that as it may, there can be little doubt that the importance of wet nursing was far from negligible among large sectors of both urban and rural populations in many parts of southern Europe. This means that several feeding and weaning patterns could coexist in the same area. Some infants were breastfed by their mothers, others were breastfed by wet nurses, and a few might not be breastfed at all. To detect and measure the differentials which in all likelihood separated these three categories of infants is clearly an important task for the historical student of breastfeeding.

This is exactly what Carlo Corsini has attempted to do in his essay, which is for the most part based on a painstaking analysis of documentary evidence preserved in the historical archives of the Spedale degli Innocenti of Florence, one of the oldest and largest foundling homes in Europe. A certain lack of access to the archives of foundling hospitals has perhaps meant that they have not yet been fully exploited by historians. They have mainly been tapped in order to derive figures on the extent of child abandonment and to calculate rates of infant mortality. But the material contained in these archives can be used for many other purposes. A careful inspection of the administrative records can make it possible, for instance, to relate changes in infant mortality rates to regulations issued by the foundling hospitals themselves or by higher authorities, as many of these regulations would obviously concern

infant feeding practices. An instructive case is presented here by Corsini, who demonstrates that new rules introduced in Florence in 1805, which prescribed that foundlings should be breastfed throughout the first twelve months of their life, resulted in substantial changes in the patterns of infant and child mortality.

What makes Corsini's paper especially valuable is, however, the fact that he has been able to link his data from the Spedale degli Innocenti archives to a family reconstitution study of two rural areas near Florence which were under the jurisdiction of the Spedale as far as the care of foundlings was concerned. This ingenious exercise reveals that mortality curves for foundlings, besides being decisively shaped by the regulations on infant feeding set by the Spedale degli Innocenti, also differed significantly from those for infants fed by their own mothers in the Tuscan countryside. This is strongly suggestive of the existence of remarkably different breastfeeding and weaning patterns, and sheds very interesting light on their effects. Moreover, Corsini has been able to locate a number of 'reconstituted' families which had taken in one or more infants for wet nursing and to analyse in depth the effects of the ensuing prolongation of breastfeeding on the fertility of the wet nurses.

The first wave of historical studies of breastfeeding was instrumental in allowing economists, social scientists and decision-makers to gauge the order of magnitude of the potential demographic effects of changing infant feeding patterns that were apparently under way in many Third World countries. In the past ten years or so, much more information has become available on the effects of feeding patterns on infant mortality in developing countries, and spectacular advances have been made in the study of the relationship between breastfeeding and fertility. Nevertheless, the two studies presented here, which are representative of the two main strands of historical research in this field today, show that there are still interesting lessons to be learnt from the past. The analysis of historical material can make a significant contribution to both demographic and biological research on breastfeeding by providing long-term evidence on both fertility and infant survival. Perhaps more importantly, a blending of quantitative and qualitative evidence can contribute to a better understanding of behavioural dilemmas which were as relevant to Renaissance and early modern women as they are to women in developing countries today. Moreover, it can also help us to assess the impact of innovation and official intervention — 'social policy' in today's language — on the survival chances of infants and young children.

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¹ Knodel, J., "Breast-Feeding and Population Growth", *Science*, vol. 198, no. 4322, Dec. 16, 1977, pp. 1111-1115.

² Pullan, B., *Orphans and Foundlings in Early Modern Europe*, (The Stenton Lecture 1988), Reading, Univ. of Reading, 1990.



Hans Weidytz the Younger, 1530, *A fertile mother*, woodcut illustration for the *Trostspiegel*.

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Breastfeeding, Wet Nursing and Infant Mortality in Europe (1400-1800)

by SARA F. MATTHEWS GRIECO

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Introduction: Over 400 Years of European Experience

...how great were the similarities between pre-industrial British and European infant-feeding practises and those of Third-World countries today. Like the latter societies, all aspects of feeding, other than maternal breastfeeding and some conscientious wet nursing, were associated with increased risk of morbidity and death. The errors in infant nutrition made during the industrialisation of western societies are being repeated today. Even though we have the knowledge and expertise to prevent the diseases associated with malnutrition, and to correct the ignorance of health measures that could prevent them, the infant mortality in Third-World societies today is identical to that of 18th-century London...

Valerie A. Fildes, *Breasts, Bottles and Babies. A History of Infant Feeding*, Edinburgh, 1986.

Although history may not repeat itself, it is to be hoped that a knowledge of history can help guarantee the present from repeating the mistakes of the past. As Valerie Fildes points out in the conclusion of her book on the history of breastfeeding, many of the causes of child mortality related to infant feeding practices in pre-industrial Europe continue to plague developing countries today.¹ This is no coincidence: tragically high mortality rates were, and continue to be, the consequence of a series of problems ranging from improper breastfeeding practices to a lack of hygiene and nutritional deficiencies in mixed or alternative feeding.

This essay proposes to examine the reasons why maternal breastfeeding, wet nursing and weaning practices in Europe sometimes succeeded but more often fell lamentably short of their objective – child survival – up until the end of the 18th century. What factors contributed to this failure in a period in which breastmilk was considered the best food for children until two years of age, and how can a knowledge of these factors help modern policy-makers better understand the multitude of variables which still work against successful breastfeeding in many parts of the world today?

For example, European medical doctors have urged mothers to nurse their own children since Classical Antiquity, but their advice had little impact on urban populations until the end of the 18th century, and even then it was restricted to the extreme ends of the social scale: the educated elites and those (much more numerous) who were so very poor that they had no

other option. Why did 'scientific' teachings have so little impact on a population for whom demographic decline was a permanent concern? Popular beliefs, socio-economic factors and, paradoxically, even medical theory itself contributed to a rejection of maternal breastfeeding among the middle and upper classes, giving rise to a number of built-in failure factors in a world where children died from improper feeding practices as much as they did from hunger, sickness and disease.

However, some 100 years before Pasteur's discoveries would lower the risks attached to bottle feeding, maternal breastfeeding came back into fashion much as it has come back into fashion in the Western world today. What stimuli caused these changes, and why has urban Europe repeatedly swung from maternal breastfeeding to wet nursing to artificial feeding and back again? And why, even when breastfeeding (be it maternal or 'mercenary') was in vogue, did this best-of-all infant feeding practice fail to save more children?

This essay will attempt to answer these questions, drawing upon recent research in the relatively new field of the history of breastfeeding, wet nursing and weaning practices in Europe. As research in this area is as yet sporadic, limited to institutions such as foundling homes, to medical theory in specific periods, to demographic data on the family or to scattered information on the history of wet nursing in various countries, the mosaic picture of European practice since the 15th century is still missing a number of pieces.² Nonetheless, the existing picture describes, over and above a variety of infant feeding practices particular to different regions, social groups and chronological periods, a 'European' experience whose failures are as instructive as its successes in the struggle for child survival.

Maternal Breastfeeding: Social, Economic and Medical Deterrants

We beg and exhort the most noble women to...(feed)...her infant her own milk, for it is very important that an infant should be nourished by the same mother in whose womb and by whose blood he was conceived. No nourishment seems more proper, none more wholesome than that same nourishment of body that glowed with greatest life and heat in the womb and should thus be given as a known and familiar food to newborn infants...Women ought to consider it best, very honorable, and commendable to suckle their own children, whom they should nourish with great love, fidelity, and diligence...

Francesco Barbaro, *De Re Uxoriorum*, Venice, 1416.

From moralists writing treatises on the duties of wives to medical doctors writing on the care of children, all 'authorities' in late medieval and early modern Europe urged maternal breastfeeding as the best start in life for infants. Yet the very insistence with which maternal nursing was encouraged underscores the fact that for the middle and upper classes this practice was the exception rather than the rule. Excluding some areas in central and northern Europe, where hand-feeding was widespread, maternal breastfeeding was largely limited to rural populations and to those urban dwellers who could not afford the relative luxury of a wet nurse.

Why would a mother deprive her infant of the nourishment which all authorities since Classical Antiquity had agreed to be the best suited for children? There are a variety of reasons why a mother would not breastfeed, one of the most weighty being the fact that the decision was usually not hers to make. It was generally the father who decided whether to send his children out to a wet nurse or not, and in his mind there were a number of considerations which could easily outweigh the consensus of centuries of medical advice.

The Mother's Health and Beauty

To begin with, until the 18th century maternal breastfeeding was considered to be physically debilitating and even dangerous for the mother. The majority of texts written for midwives and doctors referred, directly or indirectly, to a famous passage in Soranus of Ephesus' *Gynecology* (1st–2nd century A.D.), in which he advocates wet nursing:

...lest the mother grow prematurely old, having spent herself through the daily suckling: for, just as the earth is exhausted by producing crops after sowing, and therefore becomes barren of more, the same happens with the woman who nurses the infant; she either grows prematurely old, having fed one child, or the expenditure for the nourishment of the offspring necessarily makes her own body quite emaciated. Consequently, the mother will fare better with a view of her own recovery and further childbearing, if she is relieved of having her breasts distended too.³

The higher her social rank, the more delicate her constitution was supposed to be and the less it was expected to withstand the demands of lactation. Even those medical authorities who urged maternal nursing cautioned full repose and recuperation (generally until the post-partum flux had ceased and the mother had been ritually 'cleansed') before undertaking such an onerous task. During this time the child would be fed by a wet nurse or given alternative foods while the mother's first milk would be drawn off by hand or by nursing puppies:

...the mother herself should not give her child suck in the month, by reason she hath been troubled and tired in her lying in, and because she is not as yet well cleansed and purified of her after-purgings, which commonly last a month...In which space she shall let little prettie whelpes sucke her breasts, to make her milk come the better and that it go not away.⁴

Those few middle and upper class mothers who challenged social custom and breastfed their own babies were considered to be almost saintly, sacrificing their health, beauty and peace of mind for the benefit of their children. Scarred and sagging breasts were a reality for all nursing women of this period, as is testified by the many chapters devoted to diseases and damage of the breasts in books on midwifery. It was apparently not unusual for a woman to lose her nipples entirely due to cuts and sores which scarified badly, or due to older children with teeth (nursing generally continued until the child was two or three years of age) who chewed her nipples off completely.⁵ Over and above the effects of breastfeeding on the figure, improper diet and mineral deficiencies could cause hair and teeth loss, not to speak of a fall in body fat, which was considered most unaesthetic at this time. In the year 1700 an Italian physician by the name of Bernardino Ramazzini wrote a treatise on the diseases of workers which sets out the afflictions common to breastfeeding mothers and wet nurses:

The following are ailments from which nurses [and mothers] are commonly afflicted, gradual wasting, hysterics, pustules and scabies, headache, vertigo, respiratory troubles, and weak eyesight, and they are liable to many other disorders, especially in the breasts when milk is too abundant, when it curdles in the breasts, when these become inflamed or suffer from an abscess or cracks in the nipples. It is easy to understand how atrophy and wasting may result from long-continued suckling; for, as the infant grows bigger and sucks a great deal of milk...the bodies of nurses are robbed of nutritive juice with which they ought to be nourished, and so from exhaustion they gradually become thin and reedy...⁶

Not only would a nursing mother thus risk a premature passing of her health and beauty, but she would also risk displeasing her husband. The fashion was to have fine breasts, as is evident in the *décolletage* of portraits from the 16th to the 18th century. Upper class women (and those who imitated them) thus went through elaborate procedures to drive back milk after the birth of a child, applying ointments spread on lint or hareskin to their bosom. Breasts treated in this way often became inflamed or developed tumours, but all this was endured because the breast had become less a symbol of maternity and more an object of male sexual adulation. Writing at the end of the 16th century, Laurent Joubert accused sensuous husbands of not permitting their wives to nurse "so that their breasts stay more beautiful, because they like to fondle firm breasts, not limp ones; there are others who hate the smell of milk on their wife's breasts. How delicate they are".⁷ Many 17th and 18th century sources continue to emphasize the fact that husbands abused their marital authority by forbidding their wives to nurse, and all this for "the indulgence of...selfish inclinations". As one indignant author pointed out, "many a sensible woman, many a tender mother, has her heart yearning to suckle her child, and is prevented by the misplaced authority of a husband".⁸

Breastfeeding and Sexual Relations

Over and above the aesthetic and physical drawbacks of nursing there were a number of medical prohibitions governing conjugal relations during lactation which caused many husbands to actively discourage maternal breastfeeding. Sexual relations were forbidden during the entire nursing period (18 to 24 months) as it was believed that intercourse would 'weaken and corrupt' breastmilk. Worse still, a new pregnancy would 'poison' the breastmilk, depriving it of its 'substance', so that the nursling would sicken and eventually die. This belief was based on the then current medical theory, which held that breastmilk was really menstrual blood purified and transposed from the womb to the breasts and that women only had enough milk/blood to feed one child at a time. A gestating foetus would 'draw off' the best of the available food supply, thus leaving the nursling with denatured milk.⁹

Although this prohibition (which dated from Galen, 1st-2nd century A.D., who recommended that nursing mothers "abstain from Venus") was certainly not always followed, husbands already had a problem of sexual access to their wives. Medical texts warned that intercourse during a woman's monthly or post-partum flow could be fatal for a man, menstrual blood being considered a potent poison (one drop of which could wither a vine). Theological rulings further restricted the pious. Sexual relations outside of marriage constituted one of the seven deadly sins, and even within marriage sexual intercourse was only authorized as a

remedy for concupiscence or for the purpose of procreation. Furthermore, sex was firmly discouraged on fast days as well as on religious holidays such as Sundays, Christmas, Good Friday, Easter and during Lent.

In addition to the 120 to 140 days of religious observance during which sex was frowned upon if not expressly forbidden, couples were also urged to avoid intercourse during the hot summer months as it was believed that children conceived in conditions of excessive heat would be born mentally deficient or deformed.¹⁰ It is small wonder that husbands who wished to enjoy already limited physical relations with their wives were hardly enthusiastic about the further restrictions imposed by two or even three years of maternal breastfeeding. By sending their children to wet nurse, however, they only transferred the problem to the wet nurse and her husband; thus the preference for widowed and even unmarried women for this position as they ran a smaller risk of getting pregnant.

A Permanent Baby Boom

Another factor which weighed heavily against maternal breastfeeding was the natalist imperative of early modern Europe. Both mothers and fathers were fully aware of the fact that breastfeeding made women "sterile for a time", lactation amenorrhoea being an empirically observed and well-known phenomenon.¹¹ Yet the prime objective of marriage was to have as many children as possible. Children guaranteed the economic strength of a family and ensured the continuation of the blood line and the family name. They were important players in their parents' strategies for social advancement through marriage and business. They were also expected to support their parents and other relatives in their old age. The need and desire for children was further increased by high mortality rates, which meant that a father had to sire some twelve children to ensure the survival of only four to six.

How was a man to maximize his progeny if his lactating wife was sexually taboo and, even if this taboo were ignored, most probably infertile (i.e. not ovulating) as long as she was breastfeeding 'on demand', as was the custom, and with no additional foods being fed to the child? The solution chosen by the majority of those who could afford it was wet nursing; thus the often staggering numbers of children born in wealthy and even moderately well-to-do homes. Fathers could marry two, three or even four wives in succession (most died as a consequence of childbirth or related complications) in order to produce one or two dozen children of whom a mere fraction would reach adulthood. For example, Gregorio Dati, a Florentine merchant (1364–1435), sired no less than 27 children among three of his four wives (one died childless) and a slave girl. Of these 27 children, only six or seven (Dati's diary entries are imprecise) were still living when he registered the birth of his last daughter in June 1431.¹² If the husband were fortunate enough not to lose his wife during her childbearing years, she would bear him an infant every 18 months on the average until menopause or death interrupted her productive record. The wife of Antonio di Ser Tomaso Masi died in 1459 at the age of 57, having produced no fewer than 36 children: 28 of these had been put out to wet nurse and, at her death, nine male children (female children were not considered very important) were still living; the remaining eight children had probably died at birth or soon after, before they could be sent out to nurse.¹³

Social Status and Differential Fertility

The rejection of maternal breastfeeding in favour of wet nursing among the middle and upper ranks of society was also due to a need to keep up appearances. It was considered undignified for a respectable woman to act as a nurse to her child. Nursing was a lower class function, a servant's job, whereas employing a wet nurse was a sign of gentility, a hallmark of prestige and social respectability which both mothers and fathers felt obliged to live up to. An early biographer of the philosopher Marsilio Ficino thus said of his father that although he was poor, "we must believe that he lived decently since he sent his children out of the house to be brought up by *balie* (wet nurses)".¹⁴ Almost 300 years later, Sebastiano Melli criticized the women of his time for bragging about "my *balia*; I have such and such expenses with my *balia*, I am keeping a *balia*, etc."¹⁵

The effect of this widespread custom was a variation in reproductive patterns according to social class. The rich, who abandoned maternal breastfeeding, had short birth intervals and high fertility rates, giving birth to children every 12 to 18 months for the whole of their childbearing years unless illness or complications attendant upon childbirth shortened their lives. Quasi-permanent pregnancy was, however, very fatiguing: "always going to bed, always pregnant, always giving birth" the pious Marie Leczinska sighed. Furthermore, parturition was dangerous. Demographers have estimated that, on the average, one out of ten births entailed maternal death,¹⁶ yet series of 12 to 16 children were not unusual in wealthy families where mothers were well-nourished and relieved of household cares. On the other end of the social scale, the poor, who breastfed both as mothers and as wet nurses and whose fertility often suffered from the effects of poor nutrition and hard labour, tended to have both longer birth intervals (as long as three or four years in this period) and lower fertility rates, averaging six to eight children. Until the middle of the 18th century, when breastfeeding patterns were to change, wealthy women thus tended to be tied to perpetual pregnancy and poor women to perpetual nursing.¹⁷

Breastfeeding in Practice

It is difficult to know exactly how women — mothers or wet nurses — actually breastfed infants in pre-industrial Europe. Medical texts written by doctors and midwives for fellow practitioners abound in advice on what was then considered to be the best nursing technique and on how to deal with any nursing problems which might arise. But to what extent did women follow medical theory as opposed to the advice of their friends and family? It was not until the 18th century that texts on childrearing were written for a feminine audience, and even then this audience was made up of an educated élite. The earliest direct commentaries by women (mostly in diaries and correspondence) who complain of difficulties they are having with nursing or who give advice to sisters, daughters or friends date from this same period and concern the same social élite. What we do know, however, is that advice on breastfeeding techniques remained much the same from the 15th to the middle of the 18th century, and that it was closer to popular beliefs and customs than the more 'scientific' techniques (based on empirical observation rather than on medical theories dating from ancient Greece and Rome) which were to follow.

The medically recommended length of nursing before full weaning ranged from 18 to 24

months of age, although many mothers and wet nurses weaned their charges earlier (generally because of an intervening pregnancy) and some continued until much later (even at three years of age, in order to ensure the child a better chance of survival). Classical authors such as Pliny, Soranus, Galen and Aristotle recommended an average of 22 months, whereas some authoritative, non-Christian religious texts reinforced this advice by specifying the time allotted to breastfeeding in their books of law. The *Talmud* states that "A baby nurses for twenty-four months...the nursing period should not be cut down for the baby may die of thirst", and the *Koran* specifies the same period of time.¹⁸ In Renaissance Florence, legislation controlling the amount of time foundling children from the city orphanages were to stay with a wet nurse gives an idea of the length of time considered advisable for breastfeeding. In 1415, for instance, *balie* who gave up their charges before they were 30 months old were subject to fines or a public whipping.¹⁹

It would seem that most babies were not restricted to any type of feeding schedule, being breastfed on demand. In the second half of the 18th century, however, when women of the privileged classes began to nurse their own children, scheduled feeding was recommended by doctors as being more compatible with the mother's social responsibilities, but there is little information on whether this advice was actually followed. In poorer families, where women worked in the fields or at home, breastfeeding may well have been restricted to intervals determined by the work schedule and alternated with substitute foods introduced fairly early on. Of course, wet nurses who did strenuous physical work or who had dietary deficiencies could also run into the problem of an inadequate milk supply, in which case they were supposed to return their nurslings. Milkless mothers who could not afford wet nurses had to rely upon the good offices of a neighbour, on hand-feeding, or, as an extreme measure, animal nursing.

Unfortunately for many infants, animal milk was frowned upon, it being believed that a child absorbed the characteristics of its nurse through the milk it drank.²⁰ A 14th century Tuscan moralist, Paolo da Certaldo, warned parents:

Be sure that the wet nurse has plenty of milk because if she lacks it she may give the baby the milk of a goat or sheep or ass or some other animal because the child, boy or girl, nourished on animal milk doesn't have perfect wits like one fed on women's milk, but always looks stupid and vacant and not right in the head.²¹

The taboo against animal milk remained strong until the second half of the 18th century, when experience in nursing syphilitic children with animal milk (so that the disease would not be transmitted to the wet nurse) and experiments on formulas for hand-feeding led to the increasing use of cow milk. However, despite the crushing weight of moral, medical and theological restrictions, the food which was always considered best for infants remained breastmilk, even if it was not the milk of the child's biological mother.

Medical Errors and Miscellaneous Complications

Medical theory and popular beliefs were responsible for a great many mistakes in early infant feeding. The prohibition of animal milk, even in a weaning diet, was widespread, although rural mothers who had no other alternative doubtless used sheep or donkey milk

rather than let their children starve. Another unfortunate belief which also carried over into practice was the fear of colostrum.

The mother's first milk — colostrum — was considered a 'bad' milk, of dubious colour and evil properties, to be denied the newborn at all costs. This idea, which is still current in a number of developing countries today,²² was probably due to the yellowish colour and viscous texture of colostrum, which changes within three or four days of delivery to a more normal-looking breastmilk. Yet colostrum has a number of protective and nutritive functions: it aids the evacuation of meconium from the newborn's intestine and it contains important antibodies and proteins which protect against bacterial infections and fungus, especially in the mouth and intestine. Clearly, the infant who was breastfed from the first day by its own mother and who received these important substances stood a better chance of fighting infections in the first week of life than an infant fed with the 'older' breastmilk of a wet nurse (who had been feeding her own child for a number of weeks or months) or an infant fed substitute foods in the poor hygienic conditions of a pre-industrial environment. Some neonates were even haphazardly spoonfed and thus half-starved for the first few days of their existence (wet nurses were not always easy to find), which meant that they were often too weak to suckle properly once their mother's 'good' milk had come through.

Although medical doctors had long noticed that peasant children (who were nursed by their mothers from birth, colostrum and all) seemed to be healthy despite such 'unorthodox' feeding practices, it was not until the early 18th century that medical opinion changed and began to tolerate and even encourage the use of colostrum. Changes in attitudes towards this 'first' milk and in the practice of neonatal feeding were to have important repercussions on infant mortality in the first four weeks following childbirth. Mothers also benefited from this change. Those who breastfed immediately rather than attempting to draw the colostrum off by hand experienced a decrease in the risk of milk fever, a common post-partum complication that was as feared as puerperal fever insofar as it often led to maternal death.

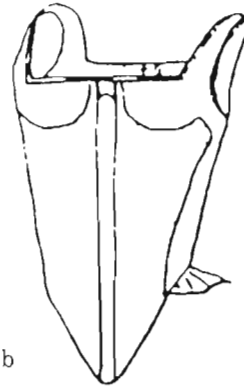
Erroneous medical theories were not the only reason children were deprived of some of the benefits of nursing. Another reason was the social imperative of the corset for all women of fashion. From the 16th to the 18th century corsets were worn from about the age of three years for all of a woman's waking hours. These corsets, which flattened the breasts and compressed the ribcage, were responsible for a high incidence of inverted nipples among the well-to-do as well as for a number of more unfortunate accidents such as lung perforation (from deviated ribs) in children and hard tumours in the breast. Although nipple shields, which were generally used to protect sore or cracked nipples, and sucking glasses (used to relieve engorged or inflamed breasts) could also be adapted to draw milk from inverted nipples, the process was so complicated and uncomfortable that most mothers opted for the alternative of the wet nurse, whose inferior social status usually precluded the luxury of fashion and its attendant anatomical mutations. Once again, social station could play a determining role in a mother's ability or willingness to breastfeed her own child.

Bonding and Other Benefits

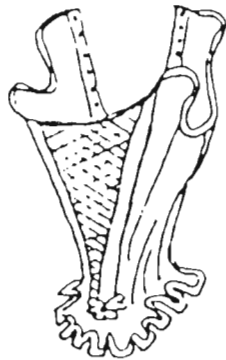
One of the most commonly repeated arguments in favour of maternal breastfeeding was the strong emotional bond which was known to develop between a child and the woman who



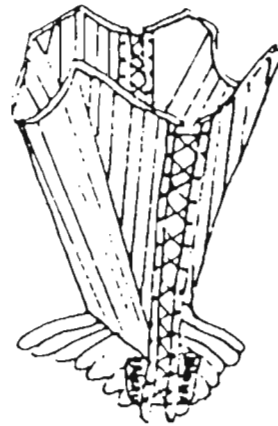
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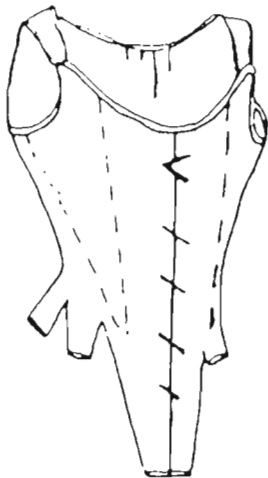
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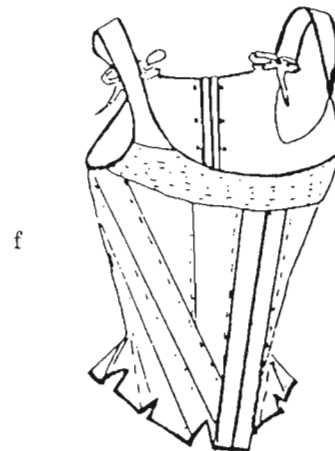
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Corsets of the 16th to the 18th century. These stiffened, tight-fitting garments flattened the breasts, causing a high incidence of inverted nipples among ladies of fashion (and those who imitated them): (a) c. 1530 (b) early 17th century (c) 1650 (d) 1660 (e) early 18th century (f) c. 1775.

fed and cared for it in the first months of its life. Francesco Barbaro, a 15th century Venetian humanist, was of the opinion that this was the work of Nature, which had fashioned women's bodies especially for this purpose:

...Nature has...instilled in women an incredible love and affection for their offspring. Here the special care and diligence of Nature can be observed, for while she has placed the nipples of other animals under their stomachs, in women she has affixed them on their breasts so that they may feed their children milk and fondle them with embraces at the same time, kiss them easily and comfortably, and, as they say, receive them to their bosoms.²³

The importance of early bonding is well known among many species of mammals, where separation of the mother and the newborn at this crucial time can lead to rejection of the young and even to their destruction by the mother. Studies on humans have associated lack of bonding with rejection, child-beating and emotional cruelty. It is now believed that the most critical time for the establishment of maternal instinct are the first 12 hours after birth. Early separation has also been known to cause depression in newborns, and the longer the separation, the greater the chance of a lack of attachment or even indifference in mothers. Needless to say, breastfeeding has been shown to be an important factor in the mother-infant bonding process.²⁴

Yet most infants in early modern Europe were taken away from their mothers for hours or even days to be washed, swaddled and fed by other women while their mothers rested. And even if the mother desired to nurse her own child, she would usually not be allowed to feed it until the colostrum had changed colour (three to four days) or even until she had been ritually cleansed after the cessation of the post-partum flow (*circa* 40 days after birth). The child she would then put to her breast would be a stranger to its mother.

Nursing could also be painful, especially for first-time mothers who experienced problems in learning the techniques of breastfeeding and in dealing with engorged breasts before the child began to suck. Given the difficulties of childbirth in pre-industrial Europe, where maternal rickets made many a labour last for days and many a birth fatal, and where puerperal and milk fevers could be as debilitating (and as deadly) as the birthing process itself, weakened mothers no doubt welcomed a temporary or even permanent respite from the demands of nursing.

It is therefore not surprising that many mothers seemed indifferent to their children, content to put them out to nurse for long periods of time. Historians have hotly debated the existence of a natural 'maternal instinct' in early modern Europe, some even going so far as to affirm that maternal apathy with respect to child survival was so widespread as to have significantly increased mortality figures.²⁵ Others have adopted a different point of view, asserting that high infant mortality caused parents to adopt wet nursing as a kind of emotional 'protection' against grief: by not becoming attached to a child during the first two or three years of its life, mothers and fathers spared themselves a great deal of sorrow were the child to die during this most perilous period of its existence.²⁶ Michel de Montaigne's reaction to his children's death has often been quoted in support of this argument: "I lost two or three [children] at nurse, not without regret but without grief."²⁷ On the other hand, medical doctors, moralists and theologians all pointed out that women who did breastfeed

their infants early on felt a great love for their children and expressed infinite grief at their deaths.

During the 18th century, when maternal breastfeeding was to come back into fashion and when more and more infants were put to their mother's breast within a few hours of birth, attitudes towards children and child survival also changed. Increasing concern for child welfare was to characterize the 18th and 19th centuries, concurrent with a growing consciousness that children were different from adults and thus needed different treatment and special care. There were, of course, other factors at work during this period, but it cannot be denied that changes in neonatal feeding practices not only improved children's chances for survival but also gave an impetus to improved emotional attitudes towards children which, in turn, paved the way for better opportunities for child development both within and outside the home.

Maternal Breastfeeding before 1750: A Losing Battle

Although wet nursing was the rule amongst the middle and upper classes of most countries in Europe from the early 15th to the mid-18th century (and in certain areas even to the end of the 19th century) not all well-to-do mothers followed the same pattern. A Florentine merchant, Antonio Rustici, had 15 children between 1412 and 1436 and sent them all to live with wet nurses immediately after baptism (two to three days after birth). On the other hand, six of the seven children born to Cristofano Guidini, a Sienese notary who died in 1410, were nursed by their mother for at least a short time (two weeks to two months) before being sent out to *balie*, and the last child spent the first and only year of her life at her mother's breast.²⁸

It is impossible to know how many women may have wished to breastfeed their own children but were unable to, either because of problems related to nursing or, doubtless more frequently, because of opposition on the part of their husband. Conflicts between parents on this subject must have been fairly common, to the extent that Fromageau dedicated a special entry to this subject in his theological manual, *Dictionnaire des cas de conscience* (Paris, 1733):

Jeanne, having had a first child by her husband, wishes to feed it herself; but, since her husband wishes to demand of her his conjugal rights [i.e. sexual relations], she asks whether she is obliged to satisfy him during all the time that she is nursing her child, or whether she can refuse him without sinning?

Answer. A woman knows by experience that if she renders her conjugal duty at this time, her milk will become corrupted, becoming totally harmful for her child or ceasing to be sufficient to nourish it. Can she, without sin, refuse her husband, and would he incur sin were he to ask it of her? If he finds himself in peril of incontinence [i.e. of extra-conjugal relations or masturbation] the wife must, if she can, put her child out to nurse in order to provide for her husband's infirmity. If, on account of her poverty, she cannot have her child suckled by another, she may refuse her husband, because he has not the right to demand it at the expense of the life or the health of his child.²⁹

Not only did the Church recommend placing a child at wet nurse rather than risking the husband's immortal soul through unrequited lust, but most 'genteel' company found breastfeeding to be a repulsive practice, debasing and unladylike in the extreme. After pointing out

that “Very oft the father is unwilling that his wife should undertake this office”, Henry Newcome’s *Compleat Mother, or an Earnest Persuasive to all Mothers (especially those of Rank and Quality) to Nurse their own Children* (London, 1695) describes the sort of resistance young mothers could encounter should they dare to breastfeed:

I have observed that those ladies, who contrary to this prevailing custom [of wet nursing] have undertaken the nursing of their own babes, have oft met with unhandsome reflections and bitter taunts from others of the contrary practise...A lady that will condescend to be a nurse, though to her own child, is become as unfashionable and ungenteel as a gentleman that will not drink, swear and be profane...and if ever you saw the modesty of such an one assaulted by the railery and scorn of a company of debauchees, when he happens to fall among them; you may imagine the need those few ladies have of courage and resolution, who by nursing their own children, expose themselves to the taunts and derision of the many, who decline that office.³⁰

It is little wonder that those mothers who actually embraced the trials of nursing their own children were seen as examples of self-sacrificing maternal love, a love which was said to last for the rest of the mother’s life. In fact, such was the ‘superior’ affection that women bore for the children they suckled that they often wrote about their greater devotion to them and even left them extra money in their wills. Memorials and tombstones also attest to the laudable — and exceptional — fact of maternal breastfeeding. Thus a monumental brass dedicated to the memory of Lady Essex, Countess of Manchester, in Edwardstone Parish Church (Suffolk) proclaims:

She died the 28 of September, Anno Dom. 1658 & left 8 children 6 sons & 2 daughters 7 of them she nursed with her own breasts. Her children shall rise up and call her blessed.³¹

One of the prize dividends attributed to maternal breastfeeding was the fact that it ‘guaranteed’ filial affection, as opposed to the hostility which many mothers suffered when their children returned to the parental home after two, three or even five years at nurse. And such hostility was not easily forgotten, sometimes continuing even into adult life. In the preface of his treatise on *The Nursing of Children* (London, 1612), the physician James (Jean) Guillemeau attempts to convince mothers of the joys attendant upon suckling by describing the child’s consequent devotion:

...if she [the mother] nurse him, he sucks and draws her own blood. Whereupon grows a familiar inwardness, and the child (when he comes to years of discretion) finds himself bound to his Mother, for many benefits: both in that she hath borne him nine months in her womb, and also because she hath nursed him, watched him, and often made him clean. In recompence whereof, he endeavors to show her a thousand delights, to make her forget or take in good part, so much care and pains, as she hath taken with him. He plays a number of apish tricks about her, he kisseth her, strokes her hair, nose, and ears: he flatters her, he counterfeits anger, and other passions, and as he groweth bigger, he finds other sports with her, which causeth that they bear one another such an affection, as cannot be expressed, & makes that they can never be parted...And hereupon Plato justly said, *That children would never love their parents so well; but that their fathers do often bear them in their arms, and the mothers give them suck at their own breasts.*³²

But, for the most part, this idyllic family picture remained more of a myth than a reality. Middle and upper class women continued to hand their newborn children over to wet nurses, while the urban poor and the peasantry often practised nursing as a lucrative occupation which tended to benefit babies other than their own.

Wet Nursing: The Best Alternative

...if, as often happens, mothers cannot for compelling reasons suckle their own children they ought to give their infants to the care of those who are freeborn, well mannered, and especially those endowed with dignified speech. In this way the young infant will not imbibe corrupt habits and words and will not receive, with his milk, baseness, faults and impure infirmities and thus be infected with a dangerous degenerative disease in mind and body. For just as the limbs of an infant can be properly and precisely formed and strengthened, so can his manners be exactly and properly shaped from birth. Therefore, mothers ought to be especially careful in their choice of nurses for infants...

Francesco Barbaro, *De Re Uxoria*, Venice, 1416.

Wet nursing — the breastfeeding of another woman's child either for payment or out of charity — has occurred in all civilizations where the death of mothers in childbirth or during lactation was relatively common. But this was not the only reason wet nursing was practised. Social, economic and religious factors have always played an important role in determining the extent of professional nursing throughout history.

As has been pointed out, women with any status at all rarely breastfed their own offspring. From the 11th century onwards, the use of wet nurses increased in western Europe, and is probably at the root of the high fertility figures for the well-to-do. Originally restricted to the aristocracy and the wealthy merchant classes, this practice gradually spread to lower groups in society, whose motive for sending their children out to nurse could vary from an imitation of elite behaviour to a need for the wife to continue working. By the mid-15th century in urban Italy, even relatively humble artisans and shopkeepers put their children out to nurse. In England, on the other hand, wet nursing reached its zenith in the 17th and 18th centuries. In France, its popularity continued unabated until the late 19th century.

How to Choose a Wet Nurse

Although medical, moral and religious writers sincerely and consistently believed that mother's milk was the best nourishment for any child and gave many arguments to support this point, failing this ideal the best alternative was always the wet nurse. Until the mid-18th century, authors of treatises on maternity and childcare gave copious advice on the choice, qualities, benefits and dangers of wet nurses, after which period the return of maternal breastfeeding eclipsed the role of the wet nurse in most medical and paediatric texts.

The list of qualities to look for in a wet nurse remained basically unchanged from the ancient world to the dawn of the 20th century. They were first fully described by Soranus of Ephesus (1st–2nd century A.D.)³¹ and continued to appear widely in books on midwifery, surgery, childcare, household management and even in recommended diets for almost two thousand years. The qualities desired in a wet nurse related to her behaviour, health, age, breasts and nipples, complexion and hair colour, general physique, facial appearance, and

speech, because all of these aspects of her physiognomy and character were believed to have an effect on the nursing child. Following in the footsteps of Soranus, Paolo da Certaldo recommended great care in the choice of a wet nurse:

She should be prudent, well-mannered, honest, not a drinker or a drunkard, because very often children draw from and resemble the nature of the milk they suck; and therefore be careful the wet nurses of your children aren't proud and don't have other evil traits.³⁴

The ideal wet nurse should be cheerful and good-humoured, not peevish or quarrelsome, free from passions and worries. She should also be sober and temperate and never over-indulge in food or drink for fear of falling asleep when nursing and smothering her charge. It was best if she already had children of her own, for then she would already have a certain experience with breastfeeding and childcare. Above all, she had to be chaste and not indulge in wanton behaviour or lechery. Country women were preferred because they were believed to have more abundant and healthier milk. Finally, she should be honest, godly and virtuous, for her moral qualities would be passed on to the child, not only through her example but also through her breastmilk.³⁵

Breastmilk and Morality

Not only doctors but also the general public were convinced that the physical and moral characteristics of a wet nurse could be transmitted to a child through her milk. In his *Lives of the Artists*, Vasari quotes Michelangelo (1475–1564) as saying that he had been put out to nurse with the wife of a stone-cutter, and therefore “with my mother’s milk I sucked in the hammer and chisels I use for my statues”.³⁶ One of the most often quoted ‘historical’ examples of the transmission of pernicious qualities through breastmilk was supposed to have occurred in the late 11th century and was repeated, with a number of embellishments, in medical, religious and moral treatises (generally in support of arguments for maternal breastfeeding) up until the 20th century. According to this legend, Yde, the wife of Count Eustace of Bourlogne, breastfed her three sons with unflagging diligence, letting no one replace her in this duty. One day, while she was at mass, her son Eustace awoke and cried incessantly. To calm him, a ‘damsel’ called in a woman to give him the breast. When the Countess returned she asked “wherefore this child hath wetted his chin?”. Upon learning the truth, her reaction was immediate:

Swiftly she flew all trembling with rage and caught the child under the arms...There on a mighty table she bade them spread out a purple quilt and hold the child; then she rolled him and caught him by the shoulders that he delayed not to give up the milk which he had sucked...Then the saintly and devoted Countess laid the child in the place where he should be, and suckled him so long until she had laid him to rest...³⁷

Most chroniclers then go on to recount that this action was too late: the damage had already been done. In later life Eustace proved himself to be hardly the equal of his two other brothers, who had not been ‘corrupted’ by the breastmilk of a social inferior.

The Nurse's Physical Qualifications

The recommended age for a wet nurse was between 25 and 30 years old, although this varied in practice from 18 to 40 years of age. She, her husband and her children should all be in good health, because any disease contracted by one member of the family might be caught by the wet nurse and passed on to the nursling. Her breasts should be of medium size, neither too big (the child would develop a crooked nose from being pressed to a large breast), nor too small (there would not be enough milk and the child would develop sore jaws from sucking too hard). The best complexion for a wet nurse was determined by the humoral theory, which held that a 'sanguine' temperament — manifested by a ruddy or brown complexion and light brown or chestnut hair — was best suited for children. Hair colour was most important in the choice of a wet nurse, and 'extreme' colours such as black, red or white were distrusted. Red hair and freckles were considered especially dangerous in continental Europe, although English medical authors understandably questioned this attitude. Religion was also a consideration: Catholic wet nurses should not suckle Protestant babies, Moslems should not suckle Jews, etc. This last ruling was doubtless determined as much by a fear of 'improper' breastmilk and weaning foods as by a fear of infantile conversion to a religion other than that of the parents.

From the 15th to the 18th century the colour of breastmilk was also important. White was considered the best, and any woman whose milk was streaked or tinged with grey, blue or yellow was never to be retained as these 'unnatural' colours were said to be the sign of some defect. It was also believed that the sex of the nurse's child influenced the quality of her milk. Some authors recommended the milk of a woman who had given birth to a male child: males being considered 'more perfect', the mother would therefore have 'more perfect' milk. Yet other authors recommended that the nurse's child be the same sex as the nursling, otherwise male infants might imbibe feminine characteristics with their nurse's milk and vice-versa. The 'age' of the wet nurse's milk was also taken into consideration: an 'old' milk would not agree with a newborn.

In his *Reggimento e costumi di donna*, Francesco da Barberino (1264–1348) thus sums up the qualities of the ideal wet nurse:

...between 25 and 35 years, as much like the mother as possible, and let her have good colour and a strong neck and strong chest and ample flesh, firm and fat rather than lean, but by no means too much so, her breath not bad, her teeth clean. And as for her manners, guard against the proud and wrathful and gloomy, neither fearful, nor foolish, nor coarse...Let her breasts be between soft and hard, big but not excessive in length, the quantity of her milk moderate, and the colour white and not green, nor yellow and even less black, the odour good and also the taste, not salty or bitter, but on the sweet side, and uniform throughout, but not foamy, and abundant. And note that the best is one who has her own male child. And beware of one who 'goes bad' such as one whom her husband won't leave alone, and one whom you find gravid...¹⁸

Recruiting Problems

All of these beliefs necessarily complicated the already difficult task of finding a reliable wet nurse, and many infants doubtless suffered as a result of well-intentioned but misinformed criteria in the selection of a surrogate mother. Distrust and long delays in the hiring of

a nurse could, in fact, cause a fatal lapse of time between birth and the beginning of breastfeeding, especially if the child was fed with a horn or a spoon and therefore lost the sucking instinct or, more common still, developed diarrhoea as a result of unclean feeding instruments. Thus suffered an infant in the year 1658:

For six days this child was not suffered to suck, and, in the meantime, was unfittingly nourished. The seventh day (and not afore) a nurse endeavoured to give it the breast, but the child had forgotten how to suck and...for want of better care, died about the tenth day...It is not impossible to find in London, or Westminster, honest women and healthful nurses, free from unhandsome diseases. Had the child had such a nurse, that, in due time, might have given the breast, I believe that the child might long have lived. For there was no probable sign indicating the child's death, or any weakness perceived in it, until the last two days. When I moved him [the child's father] earnestly to get a nurse, he replied, and said, that he scorned that his child should suck any pocky nurse in, or about London.³⁹

By the end of the 18th century, however, most of these fears had subsided in favour of one main concern: that the nurse's own child be thriving and healthy, and thus a good advertisement for its mother's milk and the quality of her care.

The Dangers of Wet Nursing

What were the dangers which parents most feared for their children while they were under the care of wet nurses? Some of the more common fears were relatively groundless, based on erroneous medical theory or on equally mythical convictions with respect to the ideal qualities of wet nurses. However, other fears concerning the hygienic conditions of the nursing's environment and the potential transmission of diseases were, alas, all too real.

It has already been mentioned that one of the most widespread medical myths was that which regarded the nurse child as "an extero-gestate foetus to whom the nurse's milk carried all her physical and mental qualities, her emotions, her food and drink and her diseases".⁴⁰ In his 15th century treatise on the family, Leon Battista Alberti thus warned parents against the defects of character which a wet nurse could transmit to her charge:

...besides those illnesses which...can be passed on by bad milk, still more the worthless, immoral nurse can injure the character of the child. She can incline him toward vices and fill his spirit with savage and bestial passions of anger, fear, terror, and similar evils. I think that if the nurse is aflame, by nature or by the use of too heady or too undiluted wines or other stimulants, and her blood is kindled and burned up, it may well be easy for him who has taken this nourishment...to become temperamentally inclined and prepared for anger, cruelty and savagery. Likewise the wetnurse who is discontented, full of resentment and heaviness of spirit, can make a child languid, dispirited and timid.⁴¹

Similarly, the nurse was seen as being the direct cause of most infantile diseases. Whenever a child fell ill, the nurse was not only held responsible but was also treated so that the child would receive the treatment it needed through her milk. Occasionally, the parents gave their sick infant to another nurse, although this was recognized as potentially entailing other problems such as a refusal to suck from a stranger.

Pregnancy and Menstruation

One of the most common accusations against wet nurses was that of becoming pregnant and giving the child 'bad' milk. As breastmilk was believed to be placental or menstrual blood transformed for the continuing nourishment of the child outside of the womb, any demand on this supply was seen as being detrimental to the nursling. It is true that the foetus always has first claim on its mother's bodily resources, and that a woman who was in poor health or undernourished would probably have less breastmilk as her pregnancy developed, but her milk hardly contained the 'harmful substances' which early modern medical authorities warned parents to avoid.

While ostensibly safeguarding the nursing infant, medical advice on this subject unwittingly protected the mother from excessive nutritional demands while exposing the infant to the emotional trauma of a change of wet nurse or, in the case of menstruation, to the dangers of alternative feeding practices for the duration of its nurse's indisposition. So widespread was the belief in the venomous quality of 'pregnant' or 'menstruating' milk that adults blamed health problems in later life on the absorption of this evil substance. For example, the lawyer Sir Hugh Cholmley (born in 1600) had a nurse who concealed her pregnancy:

I was thereby so weakened, as I have heard my father say, when I was a year old, I had not strength to bear up my head...but her being with child being discovered, I was put to another nurse; by which means, and God's blessing, my life was preserved; yet it gave me such a back cast, as I was a weak, sickly child for many years...Before I was ten years old I had the measles and small pox thrice, and very subject to agues and sickness occasioned from the bad nourishment of my nurse's milk whilst she was with child.⁴²

In 15th and 16th century Tuscany, a pregnant wet nurse was not only supposed to give up her charge immediately but was generally expected to return any money which the child's father had paid her during the period she was pregnant.⁴³ In the case of menstruation, there were three options available: the infant could be hand-fed, the nurse changed as soon as possible or, even worse, the child could be prematurely weaned. In 1659, Lord Conway and his wife became worried about the nurse of their three-month-old son. He wrote to his brother that:

The child is very well, and hath passed over the same danger which the nurse had before [i.e. menstruation] without any disturbances; but, however, my wife is informed that the suck of such a woman is dangerous and brings with it many diseases, and therefore I believe she will wean much sooner than she intended.⁴⁴

This passage reveals to what extent popular medical belief and the advice of friends and family could negatively influence a successful breastfeeding experience to the detriment of the child, and this despite empirical observations with respect to the child's continuing health.

The Transmission of Disease

Not all of the fears entertained by parents were necessarily unfounded. One disease which was transmitted by wet nurses to infants and their families (and by infants to wet

nurses and their families) was syphilis, which had appeared in Europe around the year 1490 and spread rapidly, soon reaching epidemic proportions. The foundling hospitals were perhaps the main culprits in the spread of syphilis by suckling. Many of the abandoned infants were the children of prostitutes, camp followers or their clients, all of whom might be carriers of the disease. Yet infected newborns do not generally show signs of the disease until they are about two months old, at which point the nurse has already been infected. A typical case was described by the 16th century French doctor, Amboise Paré:

A certain very good citizen of this city of Paris granted to his wife, being a very chaste woman, that she should nurse her own child of which she was lately delivered, she should have a nurse in the house to ease her of some part of the labour: by ill-hap, the nurse they took was troubled with this disease; wherefore she presently infected the child, the child the mother, the mother her husband, and he two of his children [aged three and four] who frequently accompanied him at bed and board, being ignorant of that malignity wherewith he was inwardly tainted.⁴⁵

The problem of syphilis was thus established as an occupational hazard for both wet nurse and nursling, and was to remain a significant factor in the dynamics of infant feeding practices from the 16th to the 20th century. One reason some wealthy parents preferred to hand-feed their children was their fear of ‘pox’ women and, before the invention of a reliable test for syphilis, most wet nurses had to submit to humiliating physical examinations by the family doctor before they were given a clean bill of health.

Ignorance and Neglect

As potentially dangerous as the transmission of disease through breastmilk was the poverty and lack of hygiene in many a wet nurse’s home. Although it was hardly in a wet nurse’s interest to grossly neglect her charge (for she would not only risk losing her income if it lost its life, but also lose her reputation and thus any prospect of respectable future employ), living conditions in pre-industrial rural areas often left a lot to be desired. In England, burial registers in country parishes where hundreds of infants were sent from London to be nursed often record a high percentage of nursling deaths. The parish of Ware in Hertfordshire, for example, buried over 1,400 children in the course of the 17th century, and the same nurses’ names appear again and again.⁴⁶ In *The Children’s Book* (1563), Felix Wurtz complains about the carelessness of wet nurses who give half-weaned children boiling pap and thus “they burn the children, whereby small blisters on their tongue and lips are caused like to burnt blisters, which are difficult to be healed”. He also accuses them of not swaddling their charges properly so that they grew up crooked (swaddling was believed to be necessary in order to straighten the child’s limbs), of playing so roughly that the child became stupid with fright or was dropped on the floor, of leaving infants in swaddling bands for such a long time without changing them that their bodies became covered with sores, and of keeping toddlers too long in standing stools so that they became overtired.⁴⁷ An 18th century English doctor, William Cadogan, writing in support of maternal breastfeeding, likewise painted a terrifying vision of the fate of an infant sent out to a village wet nurse whose many domestic duties left her little time to devote to her charge. Immobilized in his swaddling bands, the poor child is treated like a package:

At the least annoyance which arises, he is hung from a nail like a bundle of old clothes and while, without hurrying, the nurse attends to her business, the unfortunate one remains thus crucified. All who have been found in this situation had a purple face, the violently compressed chest not allowing the blood to circulate...The patient was believed to be tranquil because he did not have the strength to cry out.⁴⁸

But perhaps the greatest enemy of the child sent out to nurse were the economic dynamics of wet nursing, which meant that children were always nursed by those poorer than their parents. This could even entail the abandonment of children whose mothers could neither afford wet nursing nor reconcile breastfeeding with the need to contribute to their family's income.

Economic and Geographic Dynamics of 'Mercenary' Breastfeeding

Women who were employed as wet nurses were generally married and lived in their own home with their husband and children. A very small number of these women actually lived in their employer's home. Live-in wet nursing remained relatively rare and restricted to the rich, who had both the money and the space (living space was at a premium in the crowded cities of early modern Europe) to attract a reliable wet nurse. At any rate, most urban parents believed that country air was best for infants, a conviction which both incited and justified them in sending their babies out of the city shortly after birth.

For the most part wet nurses usually came from the poorer classes of rural society where their contribution to the domestic economy and family life could be ill-spared. The occupation of wet nursing thus represented a kind of 'cottage industry', a form of employment which was not only compatible with their daily activities but which also brought in some income. In the case of women who practised 'successive nursing' — who nursed several children in a row over a period of years or who gave each of their successive children out to another woman to nurse in order to take in a paying child — the occupation of wet nursing could constitute a lucrative and desirable career.

In France and Italy wet nursing was a highly organized industry, controlled by the state as early as the 13th century. It remained, however, a man's business, the wet nursing contract usually being drawn up between the child's father and the nurse's husband. Foundling hospitals also hired wet nurses, although these were usually less qualified women (unwed mothers, destitute widows, lactating slaves hired out by their owners and poor peasants) who could not find a job working for a private client. For 'respectable' families, suitable wet nurses were not always easy to find. In early 15th century Prato, Margherita Datini, wife of the wealthy merchant Francesco Datini, had difficulty in finding a wet nurse for a friend:

They seem to have vanished from the world for none has come into my hands. And some I had at hand, whose babies were at the point of death but now they say they are all well again...I have found one...whose milk is two months old; and she has vowed that if her babe, which is on the point of death, dies tonight, she will come, as soon as it is buried.⁴⁹

Margherita Datini's letter points out one of the ineluctable facts about wet nursing: it was based on the death of the nurse's child, on the farming out of the nurse's child to a poorer

woman who was paid out of the wet nurse's salary, on the risky alternative of substitute feeding, or even on the abandonment of the wet nurse's child to a foundling home. It was not until the late 18th century that women were permitted to take in more than one child or to nurse both their own child and that of another woman. And even then this practice was avoided by all those who could afford to purchase the wet nurse's exclusive attentions. In the meantime, the fate of many children was to be denied their mother's milk. In the late 16th century Michel de Montaigne attributed this practice to an absence of maternal affection:

It is easy to see from experience how this natural affection, in which we invest so much authority, has such superficial roots. Every day, in exchange for a small profit, we tear children from their mothers' arms and make them take ours instead; we make them abandon their offspring to some emaciated wet nurse, to whom we would never give our own child, or to some goat.⁵⁰

Whatever the reasons, the figures for children at wet nurse reached staggering proportions. In Paris in the year 1780, a police lieutenant by the name of Lenoir declared that out of the 21,000 children who were born each year in that city, only 1,000 were nursed by their mothers and another 1,000 by live-in wet nurses; all the others were sent out to the country.⁵¹ Although these figures cannot be taken literally, they do translate the massive nature of the wet nursing phenomenon, which descended the social scale as far as a family's status or the mother's labour made it worthwhile. Even the wives of bakers, butchers and silk weavers found it economically viable to hire a wet nurse, and many women who exercised other professions — embroiderers, market vendors, peddlars — could not afford to abandon their jobs as the money they would save by not sending their children out to nurse hardly compensated them for their lost income.⁵² And even within the urban working classes, it was only in homes where women were restricted to unskilled and poorly paid jobs (generally on account of guild restrictions), and/or where the salary paid out to the wet nurse would have made a dent in the family budget superior to whatever income the mother brought in, that women actually practised maternal breastfeeding. Throughout the early modern period, the pattern was not only for the rich to breed and the poor to lactate, it was also for the cities to send their children out to nurse and for the country to feed and care for them until they were two or three years old.

The Wet Nursing Hierarchy

As was the case with most health-care occupations in early modern Europe, wet nursing was generally a low-prestige and poorly paid job.⁵³ With the exception of live-in wet nurses, whose salary and status often placed them above even the most privileged domestic servant, those who nursed their charges in their own homes and those who hired themselves out to foundling hospitals participated in the graded hierarchy which characterized the wet nursing business. At every level, mothers gave their own children out to poorer and often less healthy women in order, ultimately, to serve the rich. At the very end of the wet nursing chain were destitute women who were obliged to divest themselves of their offspring in order to survive. Thus did two mothers justify the abandonment of their infants to officials of the Florence Spedale degli Innocenti in 1433 and 1435:

She could not feed her, and she wanted to hire herself out as a wet nurse to be able to live.



In 14th and 15th century Italy, most middle and upper class homes featured a painting or terracotta statue of the Madonna and Child. It is a historical irony that these evocations of doting motherhood should have become popular at the same time as the practice of wet nursing spread throughout these same social classes. Ambrogio Lorenzetti (active 1319-1347), *Madonna del Latte*.

The father did not want to do anything. It was necessary for her to hire out as a wet nurse if she wanted to live, because she was dying of hunger.⁵⁴

Although some mothers who abandoned their offspring subsequently applied to the foundling hospital in the hope of being given their own child to suckle for wages, others doubtless sought pregnancy in order to find work, as the demand for wet nurses always exceeded supply. The survival of some poor mothers was thus bought at the risk of their children's lives: given mortality figures for foundling hospitals in most of Europe, the abandonment of an infant was often little more than a form of delayed infanticide. At the root of this problem was, of course, the fact that women were considered incapable of nursing two children at the same time as well as the fact that hand-feeding was to remain even less successful than wet nursing until the late 19th century.

The Effects of Wet Nursing on the Child's Emotional Development

The employment of a wet nurse to bring up children no doubt tended to distance the mother from her infant emotionally as well as geographically. Once the child had passed the most dangerous years of infancy and returned to the paternal home, both mother and father could invest more in their offspring. But children cannot live and thrive in an emotional wasteland. A good affective relationship and early bonding are as necessary for a successful nursing experience as the quantity and quality of the food the infant ingests. Thus, the wet nurse necessarily assumed an emotional as well as a physical load when she took over a nursing infant. It was she who invested love as well as care in the baby suckling at her breast, it was she who earned its first affection and gratitude, and it was she who bore the disappointment and grief when her nursling died.

The nurse-child bond, which was often greater than, or even replaced, the mother-child bond, was a strong and constant feature of the wet nursing system. Sometimes nurse children so loved their nurses that they kept them as constant companions even into adulthood, providing for them in their old age and even testifying on their gravestones to their special relationship. Thus Alexander Pope, in the early 18th century, erected an epitaph to his devoted nurse:

To the memory of Mary Beach,
who died Nov. 25, 1725, aged 78.
Alex. Pope, whom she nursed in infancy,
and constantly attended for twenty-eight years,
in gratitude to a faithful old servant erected this stone.⁵⁵

Other children regarded them as their true mother, disliking and reproaching their biological mother for her lack of love. From the 16th to the 18th century, morality tales and conduct books reproached mothers for 'abandoning' their offspring to wet nurses who would then become the object of the child's affections. Hence the speech attributed to a child by Stefano Guazzo in 1581:

You bore me but nine months in your womb, but my nurse kept me with her teats the space of two years; that which I hold of you is my body, which you gave me scarce honestly, but that which I have of her proceedeth of her affection. And moreover as soon as I was born, you deprived me of your company, and banished me your presence; but she graciously received me...between her arms and used me so well, that she has brought me to this you see.⁵⁶

There is evidence that wet nurses became very attached to their charges as well. In some cases they were reluctant to return children to their parents or even offered foundling hospitals an arrangement by which they would apprentice the nurse child to the husband's trade. Presumably, if the wet nurse's own child was abandoned or dead, the foster child could provide an emotional substitute and breastfeeding could cement a strong affective bond. Nurses were also known to continue breastfeeding a child without pay and to dread being separated from it once it was weaned. When Francesco di Marco Datini's illegitimate daughter (his only child by a slave) came 'home' in 1395 after six years with a *balia*, the wet nurse's husband wrote saying that he and his wife loved the child like a daughter, and "because she is a good girl and very fearful", he hoped they would be kind with her.⁵⁷

Instability and Distance

Not all children were so fortunate as to have a permanent surrogate mother to lavish love and attention on them in the formative early years of their lives. Although a change of wet nurse was known to affect a child's willingness to suckle, children often had two, three, four and even more nurses in their early years. In 15th century Florence, for example, children remained only ten months, on the average, at the same nurse. Out of 100 infants, 33% went on to a second nurse, 8 to a third, 3 to a fourth and almost 2 to a fifth.⁵⁸ In the 16th century this pattern was to be somewhat attenuated, although a change of wet nurse always occurred if the nurse became pregnant or if the child became ill and its ailment was attributed to the nurse. Nonetheless, from the 16th to the 18th century there seems to have been a general tendency to try and keep a healthy child with the nurse it was used to, feeding it on substitute foods should she become ill or during her menstrual flow. In the story of his life the Milanese physician Girolamo Cardano (1501–1576) recounts a typical experience with a series of *balie*:

I lost, in the very first month of my life, my wet nurse on the day she fell ill, so they tell me, of the plague; and my mother returned to me...When my second month was not yet run, Isidoro...of Pavia took me naked from a warm vinegar bath and gave me over to a wet nurse. The latter carried me to...a village seven miles from Milan...There my body wasted, while the belly grew hard and swollen. When the reason was known — that my nurse was pregnant — I was transferred to a better nurse, who suckled me until I was three.⁵⁹

One of the problems with the wet nursing system was that the distance of the wet nurse's residence from the parents' home was compounded by poor travel conditions, and thus often precluded frequent visits to see the child. From the late 17th century, medical writers urged parents (and especially mothers) to visit their children at nurse, and this preferably without warning so that they could see the true care given to their child. Such advice, regularly repeated in all literature on nursing at the time, tends to underscore the fact that regular

parental visits and close supervision were the exception rather than the rule. Further confirmation can be found in the commonly felt phobia with regard to changelings (i.e. another child substituted for a dead or damaged nursling); such fears would hardly have existed if mothers visited their children with enough frequency to be able to recognize them. In the late 16th century, the children of John Dee were visited by their parents only once every one or two months.⁶⁰ Two centuries earlier Lapo Mazzei, a poor notary of Prato and father of 14 children, was certainly no exception to the rule when he wrote to the godfather of his newly weaned son: "Your godson, *whom I have seen only once before*, has come back to me from his wet nurse in the hills, the finest little curly badger that I have ever had".⁶¹

Wet Nursing: Purgatory or Paradise?

Without regular supervision, what kind of care did these children actually receive? If a mother was obliged to abandon her own infant in order to find employ as a wet nurse, would she resent her new charge? What kind of treatment did the newcomer receive from the nurse's older children or from her husband, given the fact that his wife's employ was largely dependent on his curtailing sexual relations? For some children, the years spent at the wet nurse's home were a purgatory. Pagolo Morelli was sent out to nurse in the Mugello region north-east of Florence where he stayed to the age of ten or twelve years. His mother had died soon after his birth and his father, who already had a number of grown sons, may have had little desire to have a youngster in his home. Whatever the reason may have been, he was left in the hands of a peasant woman who beat him "like the most bestial woman who ever was" and, even as an adult, the mere thought of her cruelty put him into such a rage that he would have liked to kill her.⁶²

Even if the child's relationship with the wet nurse was emotionally satisfactory, the abrupt return of the nursling from the only 'home' it knew to a totally different household peopled by quasi-strangers (and all this often accompanied by the trauma of weaning) could hardly have been a stabilizing experience. Some historians have pointed out a possible link between infant insecurity and adult male misogyny in early modern Europe, as the frequent change of wet nurse and the virtual absence of the biological mother until two or three years of age could prevent small children from forming satisfactory emotional relationships with women. For boys, this unstable female presence would then continue as, in middle and upper class families, male children were removed from their mother's care at five to seven years of age in order to begin their formal education. Infantile feelings of being repeatedly 'abandoned' by women may therefore have reinforced the widespread male conviction that female nature was basically untrustworthy.⁶³ Other historians have attributed retarded motor development, weaning trauma and emotional handicaps to an infancy spent with a wet nurse who neglected the physical and emotional needs of her charge. Fed, often insufficiently, in function of the nurse's workday schedule rather than on demand, swaddled so tightly that they could hardly breathe let alone move, left alone and lying in their excrement for long hours, many children doubtless suffered from wet nurses who were neither "good, nor careful, nor attached" to their nurslings.⁶⁴ On the other hand, a number of scholars have pointed out that wet nurses, like mothers, could be loving, or indifferent, or cruel, or incompetent.⁶⁵ There exist enough documents referring to strong bonds of love and gratitude between nurslings, wet nurses and

parents to balance out any accusations against the effect this institution might have had on the emotional development of children. The drawbacks lay far more in the area of infant mortality, where the poor organization of wet nursing services and well-intentioned but mistaken medical theories combined to create a number of high risk factors destined to take a heavy toll of infant lives.

The Impact of Maternal Breastfeeding and Wet Nursing on Infant Mortality

He [the Duke of Buckingham, father of the child] would not let it suck from the apprehension he had that there was no sound woman to be met with, nor be fed with a spoon, because he had designed the Duchess, when she was well enough, should give it suck herself. So he had the invention of a sucking bottle, which was so managed, in short, the child was starved. Then they went in hunt for a nurse. (It was too late, the child died.)

J. Cartwright (ed.), *The Wentworth Papers*, London, 1883.

How successful was maternal breastfeeding as opposed to wet nursing? Scholars differ in their evaluation of the wet nursing profession as a valid substitute for mother's milk and care in the context of a population's strategies for infant survival. Yet they all agree that the results obtained by conscientious wet nursing were far superior to those obtained by hand-feeding in those countries where all three methods of infant feeding were practised.

What were the figures for infant mortality in early modern Europe? On the average, children had one chance out of two or three to reach adulthood, and urban populations were especially at risk due to contaminated water. In London in 1764, 49% of all recorded live births ended in death by the age of two, and 65% by the age of five.⁶⁶ Mortality was highest in the first years of life when, according to the context in which the child was brought up, its chances for survival could vary anywhere from 85% to 10%. Those nursed by their mothers or by a live-in wet nurse at home had a much better chance than those sent out to nurse, whereas infants who were abandoned to foundling homes had a more precarious fate, these institutions often being subject to a shortage of wet nurses and thus obliged to resort to bottle or spoon-feeding.

Foundling Hospitals: A Form of Delayed Infanticide?

The earliest foundling homes were set up by the Church at the end of the Middle Ages to care for babies abandoned by their mothers. By the 15th and 16th century, however, secular authorities had also founded a number of orphanages in most of the larger European cities in order to counteract what seemed to be a staggering increase in infanticide and infant abandonment. The Spedale degli Innocenti, for example, was built by the Commune of Florence in conjunction with the Silk Guild specifically in order to handle a growing popula-

tion of abandoned infants which existing hospitals could no longer house. When threatened with closure in 1484 because of a lack of funds, this institution warned of the infamy and "great inconveniences" that would occur if the home were closed: "Many children would soon be found dead in the rivers, sewers, and ditches, unbaptized" – a visible testimony to a high rate of illegitimacy, a source of shame for the city of Florence, and a serious problem for the Church insofar as unbaptized infants were condemned to an eternity without God.⁶⁷

Run by religious orders, for the most part, almost all of these hospitals relied upon wet nurses to feed their charges.⁶⁸ Some kept wet nurses in the institution to suckle infants as soon as they were admitted, but as there were always few lactating women who could be induced to leave their homes and families in order to live in the hospital most foundlings were sent out to the countryside to be nursed there. A number of institutions tried repeatedly to use animals to suckle their babies (such as the Hôtel Dieu in Paris) or to feed them with pap, gruel or animal milk via a rudimentary feeding bottle or sucking horn, but such experiments inevitably resulted in high mortality and were resorted to only when there was a shortage of wet nurses. Experience proved, time and time again, that the lowest mortality was achieved when lactating women were employed, even if these women were recruited from the bottom rungs of the wet nursing hierarchy.

The nurses who worked for foundling homes were usually poorer, possibly less healthy and at any rate less 'qualified' (according to the criteria of the time) than those who worked for private families, where the pay was better but the conditions of employment also stricter. In societies where the practice of 'mercenary' breastfeeding was common, women only accepted the lower-paid, lower-status job of nurse at a foundling hospital if they were unable to find employ with a private family or to 'keep up their milk' between jobs. In Renaissance Florence, the women who served as wet nurses to foundling homes ranged from impoverished peasants to unmarried mothers, poor widows, and the slaves or servants *cum lacte* of private citizens who hired them out for this purpose. Yet, under optimum conditions (i.e. the good health of the foundling when received and prompt consignment to a *balia*) the wet nursing system saved lives.⁶⁹

The number of infants received by foundling hospitals varied from year to year, being highest at times of epidemics, war, and famine. Infant mortality rates in these institutions also followed general population curves, and were worst when adverse conditions obliged parents to abandon children they might otherwise have been able to keep. Although most of the children abandoned tended to be either newborn or at any rate under weaning age, the ages of the children handed over to these homes also tended to rise as their parents' ability to care for them in times of hardship declined. When the Spedale degli Innocenti opened in Florence in the year 1445, the mortality rate for foundlings remained at about 26.6% for the next two years. These were relatively 'good' years, however, as famine, epidemics and military operations rapidly made the rate rise to 50.6% by 1451. A lack of hospital funds could also stop payments to wet nurses, who would then return their charges, condemning them to an almost certain death. In 1451, for example, the Florence Commune stopped paying the Spedale degli Innocenti the interest due on the hospital's investment in the public debt. The result was that 456 wet nurses stopped breastfeeding because they were not being paid and that many new admissions died for lack of breastmilk.⁷⁰ This was not necessarily an expression of extreme venality on the part of the nurses. Given their subsistence-level salaries, they

could hardly manage to survive in famine conditions without pay, let alone care for an unweaned child.

High Mortality Rates for Foundlings

However, even in the best of circumstances, the mortality rates for foundling hospitals were double those of children sent out to nurse by their own family. What caused this difference in mortality despite the conscientious use of wet nurses by most foundling homes? First of all, the children who ended up at these homes were often the fruit of illegitimate unions, compressed in the womb by corsets to hide the pregnancy, then born in secret and without adequate medical care. By the time they reached the foundling hospital, they were often very close to death. A baby girl who arrived at the Spedale degli Innocenti in 1445:

...was put naked in the hole in the wall unbaptized, a newborn child all full of blood on the head and on the rest of her back. Her umbilical cord had not been tied, and we could neither see nor know who had brought her; he had fled away. The said girl had been born in that instant...frate Mariano baptized her in the house, because it seemed to us that she would die. We did everything to warm her head and dry out all her parts. We had her umbilical cord tied and we washed away all the blood with warm white wine.⁷¹

Some of these children were also affected by syphilis, especially those who were born of prostitutes or servants infected by their masters. But even if they were born healthy and sound, the age of the child at the moment it was abandoned, the length of the trip to the foundling home, the sojourn in the institution and then the time it took to travel from the hospital to the wet nurse's home all constituted a considerable risk to the infant's life.

In the second half of the 18th century, the Hôtel Dieu in Paris lost 82% of its children under the age of one month. In Reims, between 1779 and 1789, the number of foundlings who died in the course of their first year of life varied between 45% and 47%, but those abandoned in the first four weeks of life always had the least chance of survival. In Rouen, between 1783 and 1789, 16.8% of infants abandoned at birth or shortly thereafter died during the first week at the hospital, 28.3% during the second week, and 69.8% before the end of the first month.⁷² And these figures do not take into consideration the many children who died before they even reached the foundling homes.

Mothers who lived far from foundling institutions would abandon their infants at the door of a church or a shop, or in front of a local hospital which was not organized to receive infants. The child would then be sent on to a foundling home, often without any nourishment other than a little sugared water or wine to sustain it until it reached its destination. If the infant survived the trip by cart or in a basket slung on the back of a donkey, often in conditions of extreme heat or cold, it still ran the risk of being received by an institution which was not able to provide proper care. In 1720, no less than 30 children arrived at the Hôtel Dieu during the night of the 20th of April. The resident wet nurses could not furnish the necessary supply of milk, and the weaker infants died. Those who survived were pushed around the city in a cart the next day accompanied by a crier who called upon nursing mothers to spare "a few drops of milk to save a poor child".⁷³ And even if there were enough wet nurses to feed the newcomers, foundling homes were chronically overcrowded and understaffed, presenting all the problems

of cleanliness and ventilation that haunted hospitals in pre-industrial Europe. In the Hôtel Dieu of Toulouse, illegitimate and abandoned children were crowded 80 or 100 to a room, four or five to a crib. It is little wonder that epidemics and dysentery regularly carried off 80 to 90% of the children housed in such conditions.⁷⁴ Those who were eventually sent off to wet nurses in the country had to face the risks of yet another trip which could take as long as three days.

If the foundlings did not die of starvation or of exposure in the course of their transportation, the next hurdle to be faced was adjusting to the wet nurse and her milk. It was not easy to achieve a proper 'match' between a baby and a new nurse's milk, and if a proper nursing bond could not be created, the child would soon weaken and die.⁷⁵ Some nurses continued to breastfeed their own child while attempting to raise the foundling mainly on substitute foods such as animal milk and cereal pap, with all the hazards of alternative feeding before the discovery of milk pasteurization and utensil sterilization. In the 18th century, babies more easily became the victims of avid nurses insofar as women were permitted to take in more than one child in addition to their own. In a village near Lyons in 1759 there were only 16 births, but no less than 21 families took in 26 nurslings. In times of crisis the number of village nurslings also increased — in this same village it rose as high as 39 in 1767 — although the nurses were probably less well fed in those years and would most likely have had less milk than usual. Although it is true that some women developed affection for their charges and tried to keep them even after they were weaned, it seems that many wet nurses in this period witnessed the death of a foundling without much emotion and regarded the nurslings basically as a source of revenue.⁷⁶ Controls and checks on the wet nurses were few, if any, and distance contributed to the seeming indifference of the foundling hospitals to the fate of these babies, abandoned by their parents and farmed out by institutions to the mercy of country women upon whose milk and care their fragile lives depended.

Mortality at Wet Nurse

If, even in optimum conditions, the wet nursing of foundlings was still twice as dangerous as that of children sent out to a private nurse, how and why did these relatively 'privileged' children fare so much better?

In 15th century Florence, mortality of children sent out to nurse by their families hovered around 17.9% whereas that of foundlings averaged around 50%.⁷⁷ In 18th century Rouen, where more children were raised by their mothers and those sent out to nurse tended to be the children of relatively poor working women, the mortality of children cared for by their mothers was 18%, that of legitimate children sent out to nurses 38%, and that of foundlings 90%!⁷⁸ Gross neglect and starvation were more easily reserved for those children who had been abandoned by their parents, whereas the mortality figures of children at nurse fluctuated in terms of the socio-economic conditions of their families.

What were the variables of outnursing directly related to breastfeeding which could adversely affect the life of an infant? Inadequate nourishment and especially a lack of breastmilk between abandonment and arrival at the wet nurse's home constituted a first threat to a nursling's life, compounded by a lack of immunities within a new (and unhygienic) environment. This bad start could then be further jeopardized by an inadequate feeding

schedule due to the nurse's agricultural and domestic duties, the risk of overlaying when sleeping next to the nurse in her bed, and the introduction of foods other than breastmilk. Although all of these potential dangers were aggravated in the case of abandoned children, they nonetheless threatened nurslings from all levels of society.

Lack of Immunities

Over and above the aforementioned fear of colostrum, which deprived newborns of important immunities, an infant transported from its biological mother's environment to that of a surrogate mother would be exposed to pathogens *en route* against which it had no protection. This is because breastmilk contains immunoglobulins (IgA) relevant to the environment in which a lactating woman lives, but does not necessarily protect against 'foreign' pathogens to which she has not been exposed.⁷⁹ Therefore, neither its mother's milk nor its nurse's milk would necessarily be able to protect a child against all the possible infections encountered on the trip from its birthplace to its new 'home'. A further danger lay in the fact that the passive, transplacental immunity which protects a newborn for the first weeks after birth is also conditioned by the diseases to which its mother has been exposed and the environment in which she lives. If the infant is sent miles away into the country where different strains of micro-organisms exist, then the temporary immunity acquired from the mother during uterine life would not protect it against organisms with which the mother had never had any contact. In addition, the wet nurse's house was most probably less clean than that of its mother (animals commonly shared living space in the poorer peasant households). All these factors contributed to making newborns particularly vulnerable to gastro-intestinal complaints. When the child then returned to its parents some two or three years later, it would have developed its own immunity against organisms and diseases in the home in which it had lived, but would not necessarily have retained resistance to those of its parents' house. The danger of gastro-intestinal and other problems at this age would pose less of a threat than to a newborn, but their frequency, generally associated with weaning, may have been partly due to the change of environment which occurred at this same time.

The Wet Nurse's Labour Competes with Childcare

The wet nurse's labour was an indispensable element of her own domestic economy, and thus it often took precedence over the nursling's needs. These women were often accused of neglect (a 'neglect' which was relative insofar as, in most cases, they probably believed they were doing the right thing and treated their own offspring in the same way) when they left swaddled babes to scream themselves hoarse while they went about their chores. The worst moments in the agricultural schedule were those of intensive labour, such as harvesting wheat or raising silkworms, which usually coincided with the hottest period of the year. Left to suffer thirst and hunger in the relative cool of the house or taken to the fields (still wrapped in swaddling bands which ensured their immobility) in the heat of the day, these unfortunate children were fed only when the exhausted nurse could tear herself away from the labours which her entire family depended on for their living. Late summer and early autumn were

also the two periods of the year in which infants suffered the most from illness and gastrointestinal upsets, both in the country and in the city, doubtless due to contaminated water and an increase of bacteria in the home environment. A relaxing of standards in childcare and feeding in these hazardous months could only make children more vulnerable to sickness and disease, not to speak of the risk of dehydration and even starvation.

Overlaying

Worn out from her labours in the fields and around the home, the rural wet nurse slept as soundly as the overfed and pampered live-in wet nurse of wealthy urban families. Night feedings were often done in bed, where the child would lie alongside the nurse and suckle while the nurse dozed, often falling asleep again next to the infant. Even when the child normally slept in a cradle, this habit of breastfeeding in bed was fatal for many a child who was smothered when the nurse turned over on it in her sleep.⁸⁰ In fact, whenever a child died in unexplained circumstances, away from home, it was usual to assume that it had been inadvertently smothered by the nurse, although many accounts of such deaths sound suspiciously like the 'cot deaths' or 'sudden infant death syndrome' of today. Some of these unexpected demises may also have been due to rapid infections affecting the respiratory apparatus, some of which were undetectable even a few hours before causing death. Both mothers and wet nurses were warned repeatedly by preachers, moralists and physicians not to sleep in the same bed as their nurslings, and in several countries Church law even made overlaying an offence for which women had to publicly atone. Some historians have suggested that overlaying may have been a form of infanticide, but this is difficult to assess. Well-paid wet nurses surely had nothing to gain from smothering their charges, and although a few mothers may have 'accidentally' done away with an extra mouth to feed in a large family, for the most part such deaths were accepted by both parents and the law as being accidental.

Although overlaying was a problem throughout Europe, especially where the institution of wet nursing was highly developed, it seems that Florence was the only place where a protective device was invented so that the child could be suckled in the wet nurse's bed without danger of suffocation. The *arcutio* or *arcuccio* was a wooden frame with an arch above it and depressions or holes on the sides for the wet nurse's breasts to pass through. It thus enclosed the infant, making a kind of tent of the bedclothes so that the child would stay warm but not suffocate. Whenever it was hungry, the nurse had only to place her breast in the hole and turn the child so that it could nurse. Around the year 1500, ecclesiastical authorities in Florence began to threaten parents and wet nurses with excommunication should they be guilty of smothering an infant, and later even extended this threat to cover women who took infants into bed with them without using an *arcuccio*. The problem remained, however, for nurses who were not provided with a cradle and an *arcuccio* by the infant's parents who most probably did not possess their own. And even those who were fully equipped by the child's parents were hardly likely to get out of bed on a cold night in a poorly heated room to nurse a child, let alone use the bulky and uncomfortable *arcuccio*. In 15th century Florence, 15% of deaths at nurse under six months of age were attributed to overlaying by the wet nurse (or, more rarely, by her husband). Biagio Buonacorsi lost two children in this way: in 1517 a baby girl died when only eight days old, suffocated by the *balio*

(the *balia*'s husband), and seven years later his one-month-old son was overlaid by the nurse while she was suckling him. In 1474, a live-in nurse suffocated the daughter of Filippo Strozzi "in the bed", and in 1515 a *balio* refused to be paid the eight months due him for his wife's milk because the child had been overlaid by the nurse.⁸¹

The Introduction of Mixed Feeding

While overlaying remained a serious threat for the first six months of a child's life at nurse, the next major threat it would encounter was the introduction of foods other than breastmilk. Medical authorities and custom both decreed that sustenances other than milk should not be introduced until the child's first teeth had come in (about six or seven months old), although rural wet nurses were known to introduce cereal pap as early as three months of age. Weaning, however, was to wait until the child had all of its teeth (around two years of age), this being 'nature's sign' that the child was ready for solid food. However, unsuitable foods, unsterile feeding vessels and unclean water regularly gave rise to complications, not only at the moment supplementary nourishment was introduced but also, in the case of nutritional deficiencies, over a period of time.

There were two main infant foods used for mixed feeding in the early modern period.⁸² Pap consisted of a liquid (usually milk), a cereal or grain, and an additive for flavouring or extra nourishment (such as spices, sugar, honey, butter or eggs). Panada consisted of a liquid (usually meat or pulse broth), breadcrumbs, and various additives. Vegetables other than pulses were not used in either of these recipes as they were believed to be an 'unhealthy' and unsubstantial food, fit only for the very poor.

Initially, recipes for these two preparations were fairly wholesome, since the only essential element consistently lacking or poorly supplied was vitamin C. Panadas, however, consistently omitted milk or dairy products and thus tended to be deficient in vitamins A and D. In the 17th century, a decreased use of eggs and meat broth began the slow decline in the nutritional value of infant foods. In the 18th century, 58% of recipes for pap or panada contained no milk or dairy products and, of these, 34% contained no animal protein, no vitamins A, D or C, and were doubtless also low in fat, calcium and iron. Thus, over 300 years, from the 16th to the 18th century, the foods recommended or commonly given to children — sometimes from birth and often as a substitute for the breast — became less and less nutritious. The earlier these foods were introduced and the less a child breastfed, the greater were its chances of developing rickets (a great killer of adult women in childbirth), infantile scurvy, bladder stones and other ills, all of which became even more widespread as the age for weaning progressively diminished from three to two and even below one year of age.

Problems due to inadequate nutrition afflicted all children who were insufficiently breastfed in the mixed feeding period, and especially those who were introduced to alternative foods before six months of age. And yet, despite the concerted advice of medical manuals and experienced midwives, busy wet nurses and mothers tended to try and free themselves from the burden of exclusive breastfeeding as soon as possible.⁸³ The hazards of mixed feeding were also further compounded by a lack of cleanliness in feeding vessels such as sucking horns, rudimentary feeding bottles with cloth teats and long-spouted cans, all of which were difficult to wash properly, and even then impure water could render the most thorough

scouring useless. It is little wonder that a number of gastro-intestinal afflictions were associated with the introduction of foods other than breastmilk, and that the best known cure for 'weaning diarrhoea' should have remained a temporary return to the breast.

The Importance of Gender and Birth Order

A significant variable in the life expectancy of infants at nurse was their gender and their birth order with respect to their siblings. To begin with, girls were considered less important and less desirable than boys. This social prejudice translated into preferential treatment for boys at wet nurse.

In 14th and 15th century Florence, for example, weaning was either abrupt, coinciding with the return of the child to its paternal home, or gradual, spread over some six months so as to spare the child the trauma of simultaneous privation of the breast and its familiar nurse. Although parents realized that abrupt weaning was less desirable than gradual weaning, Florentines more readily agreed to pay for this supplementary period at the wet nurse for their sons than for their daughters: 74% of girls were weaned abruptly, with no transition period, as opposed to 59% of their brothers.⁸⁴ Girls also tended to be kept a shorter time at nurse than boys, averaging 18 months as opposed to 19.4 months at the breast. Yet city statutes, periodically renewed since the 13th century, proscribed a minimum length of contract for a wet nurse to be 30 months, and contracts could only be cut short by the death of the nursling or by a decision on the part of the parents.

It was thus parents who adjusted the child's stay at nurse according to the importance they invested in the child and in function of their pockets. Whereas wealthy parents tried to keep their children at nurse for up to three years and more, the popularization of wet nursing resulted in relatively premature weaning for a lot of children whose families could not afford a longer nursing period. Thus Tribaldo dei Rossi, around 1500, complained that his poverty had forced him to break off the breastfeeding of his last daughter, Maddalena, at one year of age, whereas her older siblings had not returned until they were between 17 and 20 months old. Poor Maddalena suffered the accumulated disadvantages of her birth order and her sex. When the household was already full of children, and when the nursling was a girl, the financial burden of paying a wet nurse became unbearable and, contrary to then current usage, Maddalena was weaned at twelve months.⁸⁵

This practice was entirely in harmony with both medical teachings and convictions of that time as to the relative worth of the two sexes. Physicians did not hesitate to recommend that boys be weaned six to twelve months later than girls, although reasons varied from Michele Savonarola's "males live longer than females" to Bernard of Gordon's "woman is only a guardian of the house...and therefore needs less strength than man".⁸⁶ Differential treatment also appeared in well-to-do families in Tuscany where, between 1300 and 1530, 23% of boys were entrusted to live-in wet nurses as opposed to only 12% of girls. Conversely, 68.5% of girls and 55% of boys were sent out into the country, and the girls were usually sent farther from home. The parents' preferences leave no room for doubt: it was far easier for them to separate themselves from a female baby than it was from a little boy and future heir.⁸⁷ Similar situations were to be found all over Europe. In 16th century France, for example, girls were weaned at 18 to 20 months whereas boys benefited from breastmilk up to the age of 24

months. This was justified by the fact that girls were believed to be more 'humid' than boys, and should thus be weaned earlier so as not to absorb too much 'humid' milk.⁸⁸

The (mis)treatment of girls in terms of the length of their stay at wet nurse and abrupt or early weaning was only one symptom of a society which systematically undervalued females. Foundling homes also tended to receive more abandoned girls than boys: 60% to 70% of the inmates of 15th century Florentine foundling hospitals were female,⁸⁹ and this ratio was to characterize infant abandonment throughout the early modern period. Death rates for these infant girls were also disproportionately high, partially because boys were kept more easily with supervised wet nurses who resided in the hospital itself whereas girls tended to be sent far out into the country to reside with unsupervised rural nurses.⁹⁰ Society's basic attitude towards the feeding and maintenance of girls was summed up by the Tuscan Paolo da Certaldo (14th century) in his advice to fathers:

Feed the boy well and dress him as well as you can, I mean in good taste and decently...Dress the girl well but as for eating, it doesn't matter as long as it keeps her alive; don't let her get fat.⁹¹

Changes in Breastfeeding and Infant Mortality after 1750

Infant mortality figures were to diminish slightly in the 18th century, and especially after 1750. There are a number of explanations for this improvement in an infant's chances for survival, most of which are directly related to breastfeeding practices. Although each of these explanations is important in itself, their very number demonstrates the extent to which successful breastfeeding relied on a complex interaction of social and economic factors, popular ideas and medical beliefs.

To begin with, changes in social attitudes put more value on the life of individual members of the family. A sentimental vision of marriage and conjugal affection made maternal health, happiness (and survival) more important than chronic childbearing. Children also began to be seen as unique individuals, no longer replaceable by other siblings. Family strategies ceased to be based on creating a maximum number of children in the hope that some would survive, but rather on ensuring the survival of those who were born. All of these changes contributed to a return to maternal breastfeeding — long known to be the best guarantee for infant survival — for women of the more educated classes who had the leisure to suckle their children.

Among the other changes which helped promote a return to maternal breastfeeding and a consequent improvement in children's chances for life, the most important were the following:

- The belief that colostrum was beneficial rather than harmful appeared around the end of the 17th century and slowly gained ground in the course of the 18th century, parallel to a return to maternal breastfeeding in the middle and upper classes.
- At the end of the 17th century, increasing deaths at wet nurse had given rise to a rash of experiments in hand-feeding in order that children could be raised at home and their well-being supervised by their parents. Although this method failed to substantially improve the nursling's chances for survival, parents had become used to the idea of keeping their children with them throughout infancy. It was thus only one step to the mother actually taking over the feeding of the child herself.



Jean-Jacques Rousseau's *Emile* (1762) contributed significantly to the new fashion of maternal breastfeeding in the 18th century. In his treatise on education, Rousseau advocated a return to nature, advising that infants should be born and brought up in the country, suckled by their mothers, and kept free of swaddling clothes. Augustin le Grand, Paris, end of the 18th century, *Jean-Jacques Rousseau "Il rendit les mères à leurs devoirs et les enfants au bonheur"*, copperplate engraving.

- As of 1750, writers of popular medical books began to address themselves directly to mothers, as opposed to the more specialized audience of physicians and midwives generally addressed by medical texts. One of the most successful of these books was William Cadogan's *Essay upon Nursing and the Management of Children, from their Birth to Three years of Age* (1748), which was translated into all of the major European languages.

- These popular medical books not only pointed out the advantages of maternal breastfeeding to mothers as well as to children. Improved maternal health due to natural birth spacing and close mother-infant bonding which would guarantee filial affection in adult life were the two arguments which seemed to carry the most weight.

- There is evidence that women in the middle and upper classes were making the decision whether or not to breastfeed rather than their husbands.

- Although the majority of poorer women breastfed their babies as a matter of course, changes in the habits of wealthier families doubtless played a role *vis à vis* the intermediary classes, whose social aspirations could easily lead them to follow 'fashion' and choose maternal breastfeeding over wet nursing.

- Finally, the 18th century Enlightenment was particularly concerned with Nature and the pursuance of 'natural' methods in areas such as infant feeding. Up-to-date mothers were urged to imitate the animal world and feed their babies themselves.

This return to maternal breastfeeding was, however, more a fashion than a lasting change. Social commitments conflicted with the obligations of regular nursing: many women resented this disruption of their normal lives, and this ill-feeling hardly benefited their infants. In the 1770s one young mother confessed:

It was fashion in that time for fine mothers to suckle their own children; so much the worse for the fine brats. Fine nurses never made fine children. There was a prodigious point made about the matter; a vast deal of sentiment and sympathy, and compliments and enquiries. But after the novelty was over, I became heartily sick of the business; and at the end of three months my poor child was sick too — I don't like much to think of it — it died. If I had put it out to nurse I should have been thought by my friends an unnatural mother, but I should have saved its life.⁹²

Unfortunately for many children, maternal breastfeeding had not come to stay. The 19th century was to bring about the demise of wet nursing, but not necessarily a return to the mother's breast. For reasons of convenience or economic necessity, artificial feeding was to definitively supplant wet nursing towards the end of the century, when pasteurization and improved infant formulas made bottle feeding 'safe' for the first time. Nonetheless, poverty, ignorance, and impure water were to continue to demonstrate the inferior results of alternative feeding among sectors of the population which, like many social groups in developing countries today, were unable to provide either adequate amounts of nutritional food or basic hygiene for the preparation of their children's bottles and first solid foods.⁹³ The superior results of maternal breastfeeding continued to be quoted by medical and health authorities well into the 20th century, but it is only recently that maternal breastfeeding has come back into 'fashion' among educated women in Europe. Will it survive and expand to other social strata, or will it succumb, as happened in the last century, to the 'convenience' of artificial feeding for working mothers with all its contingent dangers for child survival and development?



Summary and Conclusion: The Teachings of the European Experience

On the whole, early modern Europe considered that breastmilk was the only food for babies: mother's milk was best, followed by that of the wet nurse. Experience taught that alternative foods were hazardous to children's health (causing gastro-intestinal and other afflictions) and that only breastmilk could effectively counteract this hazard. Thus, exclusive breastfeeding was recommended until infants had their first teeth (*circa* six months of age) and weaning was not supposed to be completed, at the very earliest, until the child had all of its teeth (*circa* two years old).

Practice, however, did not always follow theory. Despite centuries of medical advice, moral pressures and religious urgings, wet nursing continued to be preferred to maternal breastfeeding in the middle and upper classes. On the other end of the social scale, economic imperatives could force women of the lower classes to adopt less than optimal nursing solutions. Obligated to wean their babies far too early or to send them out to poorly-paid wet nurses in order to be free to work, mothers could even be reduced to abandoning their own offspring in order to earn a meagre living nursing the children of those wealthier than they.

This essay has tried to account for the real constraints to maternal breastfeeding in a variety of socio-economic groups, both urban and rural. It has also tried to explain why parents systematically subjected their babies to other nursing arrangements, many of which were known, even then, to be far from the best solution for their child.

Briefly, the major variables which worked for and against successful breastfeeding in Europe from the end of the Middle Ages until the end of the 18th century can be summarized in the following points:

N.B. Many of these variables are similar to those which affect families in developing countries today, where artificial feeding continues to supplant breastfeeding, despite persistent popular belief in the advantages of breastmilk, the advice of health workers, and widespread medical propaganda:

1. Economic considerations: In early modern Europe mothers fell into three basic social groups, each of which had a different approach toward maternal breastfeeding:

i) On the bottom of the social scale, poor urban women and those living in rural areas tended to nurse their own children, usually because they could not afford to do otherwise. Given the importance of women's work within the chronically unstable domestic economy of the labouring and agricultural classes, many of these infants suffered from a lack of adequate care during moments in which their mother was obliged to work intensely, either inside or outside the home. Many of these women supplemented their domestic duties with some form of remunerated activity, such as spinning or wet nursing. Thus it was from this same group of women that wet nurses were drawn to feed the children of the following two social groups.

ii) The wives of artisans and shopkeepers, who were obliged to supplement their families' income by working and whose tasks were incompatible with the responsibilities of breastfeeding and infant care, were often obliged to send their babies out to wet nurse (in most countries hand-feeding was considered too

A satire on the fashion for maternal suckling. The fashionable mother offers her child a hasty feed before departing for her evening's entertainment (note the coachman anxiously waiting for her outside). James Gillray, 1796, *The Fashionable Mamma*, copperplate engraving.

dangerous). As they often could not afford to hire good nurses living close enough to the city to be regularly visited, and as family finances usually obliged them to wean their offspring as soon as possible, their children suffered many of the drawbacks of the wet nursing system. It was this same social group which, in the industrialized 19th century, resorted to hand-feeding for the very reasons they had resorted to wet nursing in previous centuries, and with the same disastrous results.

iii) The only group which really had a choice in the matter was the wealthy aristocratic and merchant classes. These women, who had the leisure to devote themselves to breastfeeding should they choose to do so, generally preferred wet nursing for reasons of convenience, family strategy, marital pressure and/or prestige. It was this same group that was to practise 'dry nursing' (i.e. hand-feeding by a governess or servant) in the late 19th century.

2. Breastfeeding and social status: Urban women of superior social status (and those that imitated them) were believed to have a more delicate constitution than their rural sisters, whose poverty and low status were compensated by a supposedly superior health and a more abundant flow of milk. As breastfeeding was believed to be debilitating for weak constitutions, country wet nurses were employed to suckle children from birth or shortly thereafter. Of course, one of the drawbacks to this system was that having a wet nurse for one's offspring came to be a sign of social superiority in itself, so that women dared not risk the opprobrium of their friends and neighbours by suckling their children themselves. On the other hand, when maternal breastfeeding came into 'fashion' in the second half of the 18th century, women who had the leisure to nurse their own children felt obliged to do so for fear of being considered unloving mothers.

3. Medical theory and popular beliefs: Well-meaning though mistaken infant nursing practices were responsible for significantly lowering many infants' chances for survival:

i) A mistrust of colostrum deprived the child of important immunities and exposed its mother to the risk of milk fever.

ii) Taboos on the use of animal milk for nursing newborns also subjected them to unsuitable alternative foods should breastmilk not be available.

iii) The belief that breastmilk was menstrual blood transformed and purified caused children to be taken from the breast should their nurse menstruate or become pregnant (any loss of blood or foetal demands on the mother's supply was said to alter or even 'poison' her breastmilk). Hand-feeding, a change of nurse or abrupt weaning were the most common solutions. Such extreme measures, however, had two significant drawbacks: they could expose the child to unnecessary psychological trauma (with attendant feeding problems) or to the dangers of weaning without the usual transitional period during which breastmilk still provided some protection.

iv) When a child fell ill, the cause was believed to lie in the wet nurse's milk. For this reason the wet nurse was either changed or treated herself for the child's malady so that the child would supposedly receive treatment through the wet nurse's milk.

v) The belief that lactating women only had enough blood/milk for one child at a time not only obliged pregnant women to cease breastfeeding (a practice which no doubt protected the mother but put the infant at risk), but also caused poor women who hired themselves out as wet nurses to farm their children out to even poorer nurses, to prematurely wean their own offspring, or even to abandon their infants to foundling homes where their chances of survival were, at best, only half what they would have been at nurse.

vi) Many doubtless suitable wet nurses were not employed to suckle infants because both medical treatises and popular beliefs advised hiring only women who had pure white milk and brown or chestnut hair. 'Coloured' milk and red, black or white hair were indicative of 'impurities' in the woman's constitution and thus disqualified her from all but the most menial wet nursing situations (nursing the children of other wet nurses or those from foundling homes).

4. Breastfeeding and sexual relations: Husbands objected to their wives breastfeeding on a number of grounds:

i) It was believed that the breasts would sag and the body would become emaciated, prematurely 'old'

and unaesthetic. This transformation would not only be unpleasant for the husband but also adapted poorly to fashions of the time, which required plump figures and half-revealed breasts.

ii) Medical theory taught that sexual relations would alter the milk and make it taste bad so that the child would not nurse.

iii) Sexual relations were also supposed to be avoided for the entire nursing period in order to avoid the risk of a new pregnancy, which would oblige the parents to either seek a wet nurse or prematurely wean the child.

iv) Christian doctrine also restricted a husband's sexuality. He was forbidden from indulging in non-procreative sex (even withdrawal was a sin), from masturbation and from having sexual relations out of wedlock. The only alternative to two or three years of continence while waiting for his child to be weaned was to send the infant out to nurse.

v) Until the end of the 17th and early 18th centuries, religious doctrine did not give wives the right to refuse husbands their 'conjugal due'. In practice, this meant that a wife did not have the right to refuse should her husband wish to recommence sexual relations, in which case the child had to be sent out to nurse.

5. The natalist imperative of the middle and upper classes: The wealth and strength of families was based on the number of (male) children who reached adulthood, when they could participate in the consolidation of their family's status and fortune via marriage strategies and professional activities. High infant mortality rates obliged parents to produce two, three, and sometimes even four children for every one that would reach 20 years of age. It was therefore not unusual for fathers to sire between 12 and 24 children, especially as wives who died in childbirth were quickly replaced. This natalist imperative precluded the long 'sterile' periods necessary for mothers to breastfeed and wean their own children. Thus, one of the main attractions of wet nursing was that it permitted upper and middle class urban parents to have children every 12 to 18 months. The rural poor, on the other hand, suckled their own children as well as those sent out to nurse, and therefore had longer birth intervals, averaging three to four years, and a correspondingly lower fertility rate.

6. Decision-making: husband or wife?: Until the second half of the 18th century, it was the husband who decided whether or not his wife was to breastfeed their child. It was the husband who recruited the wet nurse, and it was the husband who decided, in function of the child's age, health and the state of the family finances, when a child should be weaned. In the course of the 18th century, however, more women began to make this decision for themselves. This change was due to a number of factors: the greater education of women at this time, the growth of popular medical publications aimed at feminine audiences, and the intensification of family sentiment.

7. Health of the mother versus that of the child: For as long as the child was believed to benefit from breastfeeding at the expense of the mother's health and beauty, women who suckled their own children were considered to be heroic and self-sacrificing models of maternal devotion, laudable exceptions to the rule of outnursing. However, when 18th century medical writings began to insist upon the positive effects of natural birth-spacing due to lactation, on the strong emotional bond which developed between breastfed children and their mothers, and on the child's better chances for survival if raised at home, many mothers opted for a choice which benefited them as much as the child. In this context, the practice of obliging mothers to rest for 40 days after giving birth doubtless contributed to the success of maternal breastfeeding. Not only did the mother have an opportunity to regain her strength, but her milk supply could become well-established and her enforced leisure could create optimal conditions for establishing a strong mother-infant bond.

8. Psychological considerations: High infant mortality rates not only affected children, they also influenced attitudes to children. One of these was a form of emotional self-defence on the part of the parents and wet nurses. How could a mother, a wet nurse or even an orphanage lavish attention and care on an infant whose chances for survival were only one in two or three? Wealthy parents protected themselves by sending their children out to nurse and only bringing them back into the family when they had survived the first, most

perilous years before weaning. Furthermore, frequent changes of wet nurse or mistreatment by wet nurses could result in children who were incapable of forming any close attachments to other people. The often cold, uncaring adult personalities common to early modern Europe may have been the result of parental mismanagement or indifference during the nursing years.

9. The 'sentimental' concept of the family: The new concept of the family and family relations which developed in the late 18th century placed more emphasis on the unique nature of each loved family member. Wives were no longer automatically replaceable should they die, worn out by numerous pregnancies or as a result of childbirth. Children were also considered unique individuals, no longer easily substituted by the birth of another sibling. Their survival was now better ensured by quality care in the parents' home rather than by a quantity of infants sent out to wet nurses of whom only a fraction would return.

10. Symbolic implications: The 'cult' of maternal breastfeeding which was in fashion in middle and upper class circles in the second half of the 18th century was reinforced by a 'cult' of nature and the animal world similar to that which currently characterizes the latter decades of the 20th century. It is hardly a coincidence that in our present period of ecological concern maternal breastfeeding has also undergone a considerable comeback. Yet many cultures, both in the past and the present, have considered breastfeeding to be an 'animal' activity, degrading for the upper levels of society and therefore fit only for those lowest on the social scale. Given these observations, a number of questions arise concerning the importance of symbolic associations (animal/human, nature/culture) for the promotion of maternal breastfeeding:

i) To what extent is a rejection of maternal breastfeeding a characteristic of cultures which seek to distinguish themselves from nature?

ii) To what extent does an increase in wet nursing and/or artificial feeding characterize highly mobile societies in which elite behaviour is quickly imitated by those who aspire to rise in status?

iii) Finally, how can 'fashion', reinforced by media coverage, buttress the teachings of medical propaganda in order to reassure women as to the 'humanity', the 'modernity' and the 'desireability' of maternal breastfeeding?

This brief survey of over 400 years of European experience in breastfeeding and wet nursing demonstrates the complexity of a phenomenon whose success or failure depended on a variety of factors ranging from the household economy to husband-wife relations and popular medical beliefs. Even though maternal breastfeeding had long been deemed the most successful of all infant feeding methods, neither medical advice, nor moral propaganda, nor religious remonstrance managed to sway urban parents in favour of this practice. Changes in breastfeeding and wet nursing customs only came about as a result of change in a multitude of areas: social, medical, religious and cultural even more than economic.

Attempts to promote breastfeeding in today's world will doubtless have to deal with a similar complexity of determining factors. It is to be hoped that the teachings of history will serve to make policy-makers, field workers and support groups even more aware of the fact that a mother's decision to breastfeed is rarely hers to make alone. Her family, her friends and her professional environment can either impede or facilitate this choice. Breastfeeding is seldom a 'natural' option: it is a socially, economically and culturally determined practice which currently benefits all too few children and their mothers. And for those mothers who, for whatever reason, are unable to or do not want to breastfeed, might not one alternative be a revival of wet nursing, an institution which not only flourished for centuries but also continued in some countries (such as France and Italy) well into the 20th century? Wet nursing, if properly organized and supervised in the interests of both infant and nurse, might

well provide a viable alternative to hand-feeding, especially in areas where poor sanitation, contaminated water and improper use of industrially prepared foods make substitute or mixed feeding as dangerous as it was in Europe until the end of the 19th century.

Supplementary Tables

Table 1 - The proportion of 32 medical authors who stated some common reasons why women did not breastfeed their own children, 1500–1800.

Reason	16th century (<i>n</i> = 6)	17th century (<i>n</i> = 10)	18th century (<i>n</i> = 16)	Total (<i>n</i> = 32)
Mother's health/shape/dress	0.33	0.60	0.44	0.47
Husband's influence	0.33	0.50	0.25	0.34
The fashion or custom	0.33	0.20	0.38	0.31
Mother's (social) pleasures	—	0.50	0.31	0.31
Religious factors	—	0.50	—	0.16
Mother's lack of skill/care/mother- liness	—	0.30	0.06	0.13
Persuasion of others	—	0.20	0.06	0.09
Contraception	—	0.10	—	0.03
Other factors affecting mother *	0.17	0.50	0.56	0.47
Others **	—	0.20	0.19	0.16

* These included: laziness; because it was troublesome; to ensure undisturbed nights; and want of luxury.

** Included: gain, because it was cheaper to put a child out to nurse than to breastfeed at home and hire help; ignorance of the harm it caused; because it was considered indelicate; and that taking a nurse into the home justified the mother not feeding.

(Source: V. Fildes, 1986, Table 3.1).

Table 2 - Duration of breastfeeding by sex (Florence 1340–1530).

	1340–1399	1400–1469	1470–1530	Total 1340–1530
Males				
number	13	35	19	67
age *	23.2	21.6	18.5	21.0
Females				
number	12	39	13	64
age *	20.8	20.4	16.5	19.6
Both sexes				
number	25	74	32	131
age *	22.0	21.0	17.7	20.4

* Child's age in months at the time of his return from the nurse or of the nurse's departure from the household.

(Source: C. Klapisch-Zuber, 1985, Table 7.7).

Table 3 - Reasons for termination of contract for wet nursing: Florence 1340–1530, from 84 family memoirs mentioning 462 wet nurses and infants.

A. <i>Change of nurse</i>	(1)	(2)	(3)	(4)
Without explicit reason	88	24.7%	56.1%	
Because of weaning	3	0.8	1.9	4.4%
Lack of milk, 'old' milk	11	3.1	7.0	15.9
Nurse's pregnancy	25	7.0	15.9	36.2
Nurse's illness	10	2.8	6.4	14.5
Bad care, bad conduct of nurse	7	2.0	4.5	10.1
Illness of the child	7	2.0	4.5	10.1
Nursing couple's refusal to continue	3	0.8	1.9	4.4
Child sent to foundling home	1	0.3	0.6	1.4
Death of an older sibling	1	0.3	0.6	1.4
Return to the mother (for breastfeeding?)	1	0.3	0.6	1.4
	157	44.1%	100.0%	100.0%
B. <i>Definitive end of breastfeeding</i>				
Weaning and return to parental household	126	35.4%	92.0%	
Weaning justified by:				
birth of a younger sibling	5	1.4	3.7	
death of the nurse	1	0.3	0.7	
nurse's pregnancy	5	1.4	3.7	
	137	38.5%	100.0%	
Death of the child				
by sickness, accident, no given reason	53	14.9%	85.5%	
by suffocation	9	2.5	14.5	
	62	17.4%	100.0%	
Total explained terminations of contract	356	100.0%		
	(77.1%)			
C. <i>Outcome or conditions of the ending of breastfeeding unknown or unclear</i>	106			
	(22.9%)			
General total of contracts for wet nursing	462			
	(100.0%)			

(1) Total number of wet nurses mentioned.

(2) Percentage of all known reasons (A, B and C).

(3) Percentage of reasons in each section (A or B).

(4) Percentage of explicit reasons.

(Source: C. Klapisch-Zuber, 1985, Table 7.4).

Notes

- ¹ Fildes, 1986, p. 401.
- ² The best surveys of this subject to date are two books by Valerie Fildes (1986 & 1988). There still exist a number of lacunae in the chronological and geographic picture of infant feeding practices in Europe. On the historiography of this subject see Fildes, 1986, pp. xix – xxxviii.
- ³ Quoted by Fildes, 1988, p. 16.
- ⁴ Guillemeau, p. 18 (spelling modernized).
- ⁵ Fildes, 1986, p. 101.
- ⁶ Fildes, 1988, pp. 101-102.
- ⁷ Quoted by Knibielher and Fouquet, p. 88.
- ⁸ Trumbach, p. 202.
- ⁹ Maclean, chs. 2 and 3 *passim*.
- ¹⁰ Flandrin, 1981, ch. 10.
- ¹¹ Alberti, p. 53, McLaren 1979 & 1985.
- ¹² Dati *passim*, and Rudy-Welch, appendix 1.
- ¹³ Klapisch-Zuber, 1985, pp. 151-154.
- ¹⁴ Quoted by Pitkin, p. 217.
- ¹⁵ Barbagli, p. 375.
- ¹⁶ Flandrin, 1976, p. 217.
- ¹⁷ McLaren, 1979 & 1985 *passim*.
- ¹⁸ Quoted by Fildes, 1988, p. 23.
- ¹⁹ Trexler, "Infanticide" p. 100.
- ²⁰ Fildes, 1986, pp. 119-120 & 1988, pp. 45-46.
- ²¹ Ross, pp. 186-187.
- ²² Quoted by Fildes, 1986, p. 81.
- ²³ Barbaro, pp. 221-222.
- ²⁴ Quoted by Fildes, 1986, p. 90.
- ²⁵ Badinter, *passim*.
- ²⁶ Flandrin, 1981, ch. 10.
- ²⁷ Quoted by Aries, p. 187.
- ²⁸ Ross, p. 187.
- ²⁹ Flandrin, 1976, p. 206; Knibielher and Fouquet, p. 91 (my translation and adaptation). Cf. also Flandrin, 1981, pp. 193-201.
- ³⁰ Quoted by Fildes, 1988, p. 85.
- ³¹ Monumental brass illustrated in Fildes, 1988, p. 100.
- ³² Guillemeau, Preface (spelling modernized).
- ³³ Quoted by Fildes, 1988, p. 16.
- ³⁴ Quoted by Ross, p. 185.
- ³⁵ The above and following from Fildes, 1986, ch. 6.
- ³⁶ Quoted by Ross, p. 188. By 'mother' Michelangelo here means 'milk mother'. Cf. Klapisch-Zuber, 1985, ch. 7.
- ³⁷ Quoted by Fildes, 1988, pp. 42-43.
- ³⁸ Quoted by Ross, p. 190.
- ³⁹ Quoted by Fildes, 1988, pp. 90-91 (spelling modernized).
- ⁴⁰ Fildes, 1986, p. 203.
- ⁴¹ Alberti, p. 53.
- ⁴² Quoted by Fildes, p. 96.
- ⁴³ Ross, *passim*; Klapisch-Zuber, 1985, ch. 7 *passim*.
- ⁴⁴ Klapisch-Zuber, *Ibid.*, note 50.
- ⁴⁵ Quoted by Fildes, 1988, p. 72 (spelling modernized).
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- ⁴⁶ *Ibid.*, p. 97.
- ⁴⁷ Quoted by *Ibid.*, pp. 70-71.
- ⁴⁸ Quoted by Stone, p. 425. Cf. also Badinter, pp. 112-118, Knibielher and Fouquet, pp. 222-224.
- ⁴⁹ Quoted by Ross, p. 189.
- ⁵⁰ Quoted by Badinter, p. 55.
- ⁵¹ Lebrun, p. 126; Badinter p. 57.
- ⁵² Lebrun, p. 127; Badinter, pp. 58-64.
- ⁵³ Wiesner, ch. 2.
- ⁵⁴ Quoted by Trexler, "Foundlings", pp. 274-275.
- ⁵⁵ Fildes, 1986, p. 202 & 1988, p. 100.
- ⁵⁶ Quoted in De Mause, p. 310.
- ⁵⁷ Quoted by Ross, p. 195.
- ⁵⁸ Klapisch-Zuber, p. 144.
- ⁵⁹ Quoted by Ross, p. 192.
- ⁶⁰ Quoted by Fildes, 1986, pp. 158-159.
- ⁶¹ Quoted by Ross, p. 190.
- ⁶² Herlihy, p. 561.
- ⁶³ Pitkin, ch. 8.
- ⁶⁴ Fairchilds, pp. 194-200.
- ⁶⁵ Especially Fildes, 1988, *passim*.
- ⁶⁶ Stone, p. 68.
- ⁶⁷ Trexler, "Infanticide", p. 100.
- ⁶⁸ For the following: Fildes, 1988, pp. 44-45 and 64-67.
- ⁶⁹ Trexler, "Foundlings", p. 276.
- ⁷⁰ *Ibid.*, p. 278.
- ⁷¹ Quoted by *Ibid.*, p. 269.
- ⁷² Armengaud, pp. 105-106.
- ⁷³ Gelis, p. 427.
- ⁷⁴ Armengaud, pp. 108-109.
- ⁷⁵ Fairchilds, pp. 197-198.
- ⁷⁶ Flandrin, 1976, p. 203.
- ⁷⁷ Klapisch-Zuber, 1985, p. 151.
- ⁷⁸ Shorter, 1975, p. 225.
- ⁷⁹ For this discussion of immunological problems: Fildes, 1986, p. 200.
- ⁸⁰ On this subject: Fildes, 1986, pp. 195-196 & 1988 pp. 45-47 and 62-66.
- ⁸¹ Klapisch-Zuber, 1985, pp. 146-148.
- ⁸² For the following: Fildes, 1986, pp. 218-219.
- ⁸³ Margolin and Sauzet, pp. 61 and 78-79.
- ⁸⁴ For this and following: Klapisch-Zuber, p. 155.
- ⁸⁵ *Ibid.*, p. 158.
- ⁸⁶ Fildes, 1986, p. 48.
- ⁸⁷ Klapisch-Zuber, pp. 138-139.
- ⁸⁸ Margolin and Sauzet, p. 79.
- ⁸⁹ Herlihy and Klapisch-Zuber, p. 338.
- ⁹⁰ Trexler, "Infanticide", pp. 105-109.
- ⁹¹ Quoted by Ross, p. 205.
- ⁹² Quoted by Stone, p. 431.
- ⁹³ For an overview of the 19th and early 20th centuries see Fildes, 1988, chs. 12 and 13.
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Breastfeeding, Fertility and Infant Mortality: Lessons from the Archives of the Florence Spedale degli Innocenti

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Introduction: A Twofold Relationship

Some years ago, as part of a series of family planning programmes in developing countries, I.P.P.F. (International Planned Parenthood Federation) produced and distributed a poster recommending that infants be breastfed. The poster stressed two main points: mother's milk provides the best nourishment for babies, and proper breastfeeding requires that pregnancies be well-spaced. In fact, breastmilk considerably reduces the risk of infant mortality, thanks to the defences it transmits to the baby's organism. In populations which have no knowledge of adequate birth control mechanisms, it is the survival of the baby, related to some extent to the duration of breastfeeding, which dictates the interval between pregnancies. As a general rule, increasing the breastfeeding period will (in direct proportion to its duration and regularity) reduce the mortality risk of the infant; and it will also allow the mother longer periods of infertility, resulting in longer intervals between one conception and the next and, therefore, in fewer pregnancies.

This twofold relationship is a matter of common knowledge in many societies today,' although we do not know how widespread this knowledge is in different social classes, nor do we know to what extent it is the result of programmes undertaken by national and international agencies promoting birth control practices and to what extent it is a cultural product of the society itself. Similarly, we still do not know if, and to what extent, this knowledge can condition the practice of breastfeeding in vast sections of societies. Nonetheless, we do know that breastfeeding is on the decline almost everywhere, and in a number of developing countries this is bringing about an increase in fertility levels in communities which are at the same time experiencing an overall reduction in infant mortality rates.

Although only recently substantiated by empirical research, knowledge of the relationship between infant mortality levels, duration of breastfeeding and fertility has existed, at least in general terms, for many centuries; indeed, its deep roots lie in practical, everyday experience. Over the course of the centuries this knowledge has become part and parcel of popular lore through a multitude of cultural attitudes concerning the care of infants on the one hand and the organization of women's productive time on the other. These cultural attitudes related, for example, to the worship of mother's milk as testified to by the various sacred places devoted to fertility in all cultures and societies and the Catholic religion's iconography

Breastfeed your baby for two years.

- Mother's milk is best for your baby.
- For proper breast-feeding you must space your pregnancies.
- For advice and assistance visit the nearest family planning clinic.



An early poster produced by the International Planned Parenthood Federation highlights two important aspects of breastfeeding.

of breastfeeding Madonnas, known as the *Madonne del Latte*. These attitudes may also be seen in the widespread practice of wet nursing, whereby mothers entrusted their children to other women (mothers with adequate milk) when they were unable to breastfeed themselves, for reasons ranging from a lack of milk to work commitments or social and cultural pressures. The reproductive potential of a woman and the survival of her infant are thus closely related through the product of her breasts, her milk, and clearly depend on the duration of breastfeeding and the amount of milk produced.

In this essay I shall attempt to demonstrate how a society which quite obviously had no knowledge of deliberate birth control practices was clearly aware of the nexus between fertility, breastfeeding and infant mortality; and that this awareness, at least as a general perception, was widespread as it developed from everyday experience rather than as the result of theoretical elaborations: it was more a rough empirical awareness than accurate and sophisticated reasoning based on medical research. The information I am dealing with considerably predates the availability of this type of knowledge, for I am referring to Tuscany (in Italy) in the 18th and 19th centuries, a time when an understanding of this relationship had not yet been formulated in any precise way (though it should be mentioned that even today several very important pieces in the complex mosaic of relations among the various factors involved are still missing). Some of these data have already been published on different occasions,² but this study has enabled me to review them within a more complex framework. I should add, by way of explanation of the title I have given this essay, that the results I shall be illustrating are the product of micro-demographic research carried out for the most part in the archives of the *Istituto degli Innocenti* in Florence, formerly the *Spedale di Santa Maria degli Innocenti*, a foundling home dedicated to the care of abandoned children. Beginning with the relationship between breastfeeding and fertility, I will then move on to the relationship between breastfeeding and infant mortality, although I am fully convinced (and I will later explain the reasons for my conviction) that all three factors, or phenomena, are interdependent in a broader framework which is subject to the influence of many other elements that for the moment escape our observation.

Breastfeeding and Fertility

Breastfeeding delays menstruation, as it appears to inhibit the return of ovulatory cycles, thereby reducing the probability of conception. On the other hand, breastfeeding has a decisive influence on the length of the interval between pregnancies since if the woman stops breastfeeding, post-partum amenorrhoea comes to an end, ovulatory cycles begin again and, if no contraceptive method is used, an early conception takes place.

This relationship may easily be measured in contemporary populations, both because we have highly sophisticated clinical investigation techniques to detect the actual rhythm of ovulatory cycles in women after childbirth, and, more importantly, because it is possible to interview those same women and determine the exact duration of breastfeeding, recording also the influence of other factors such as the resumption of sexual relations or the use of birth control methods, even though the mechanics of the synergy between breastfeeding and fertility is not entirely clear.³ Furthermore, as a rule, the interviewed women form a representative sample of the population. As far as populations of the past are concerned,

however, such detailed information is not available; nonetheless, collating data from different sources, it is possible to analyse the relationship between breastfeeding and fertility, though the data in this case, as we shall see, refer to selected groups of women which cannot be considered representative samples of the overall population they belonged to.

The data I have used for this study come from two different sources:

a) The archives of the *Istituto degli Innocenti* in Florence contain data on all the infants that were admitted to the Spedale degli Innocenti. This detailed information enables us to reconstruct the fundamental steps in the lives of children from their arrival at the Spedale until they left its guardianship, which may have been due to death or because they returned to their natural parents, were entrusted to a foster family, had come of age, or were to marry. The information recorded varies according to the legitimacy of the child as it was reported to the institution at the time the infant was admitted. In the case of children reported as being legitimate, the documents contain their date of birth and baptism, the parish where the baptism took place and the names of the parents. There is also a distinction on the basis of the child's sex: according to the regulations, boys were officially 'dismissed' from the Spedale degli Innocenti in their eighteenth year (although by the age of 10 they had already been entrusted to foster families, either craftsmen or farmers), whereas the girls, unless they married, remained under the guardianship of the institution until the age of 35. For every child the documents report the full date of admission to the Spedale, the declared age (in months and days, although frequently we have the date of birth or baptism), and a number of other important facts, such as the date the infant was entrusted to a wet nurse. Thus, we know the length of each period of breastfeeding. Wet nurses were paid on a monthly basis; if the child died, the Spedale would pay their wages only for the actual period that breastfeeding had taken place; if the child survived for the entire period of breastfeeding, it would normally be given to a different family (or stay with the same one), but as weaning had been completed, families received a lower monthly wage. Until the end of the 18th century the normal period of paid breastfeeding was 18 months; however, in the new regulations drawn up by the Spedale in 1805, this period was reduced to 12 months, in line with common practice as it had developed in most families. We can assume (but as we shall see later no specific instructions or rules stated the fact) that infants were nourished exclusively on human milk for at least the first six months of life.

b) The other major documentary source is the evidence provided by my own 'family reconstitution' study of two Tuscan localities, Fiesole and San Godenzo, between the mid-17th and mid-19th centuries. Both localities were under the administration of the Spedale degli Innocenti of Florence as far as the care of foundlings was concerned, and the Spedale entrusted infants to nurses from these areas (while ensuring that no child was taken to a wet nurse in the area he or she had originally come from). Since the historical archives of the Spedale contain lists recording parish by parish the families to whom foundlings had been entrusted, I was able to locate those 'reconstituted' families in Fiesole and San Godenzo which had taken in one or more infants for wet nursing before 1799. The documents record every wet nurse's date of marriage, usually her age, and the entire history of her fertility (the date of birth of each of her children) during which time she breastfed infants from the Spedale.

Collating the data from these two sources by means of nominal linkage, I obtained the elements necessary for a study of the relationship between the fertility of wet nurses and the

duration of breastfeeding. Since a wet nurse was normally given a foundling only if her own child had died, the length of time she was paid by the Spedale degli Innocenti for breastfeeding a foundling (or foundlings, as in some cases women received more than one infant) added to the amount of time she had breastfed her own child (the period between the date of birth and the date of death) gives us the total period of time that a wet nurse breastfed after childbirth.

My reasons for stating that this is a highly selected group should now be clear: it consists exclusively of women who were paid to act as wet nurses. It may be that women breastfed their own legitimate children for shorter and less regular periods than they did for foundlings accepted from the Spedale, but no information is available in this regard. Nonetheless, there are no important differences between these wet nurses and the other women whose histories I have reconstructed: their average age at marriage is 24.6 years, the average time-lapse from marriage to first childbirth is 15.6 months (both those women who gave birth within the first eight months of marriage and those who gave birth after the 41st month have been excluded from these calculations), and on average they had a total of 6.4 children.

Table 1 illustrates the first results of this exercise: the data refer to a group of 263 wet nurses for whom I calculated the intervals between the birth of one child and the conception of the next (Ic), and the total duration of breastfeeding (A) (according to the method outlined above); they are divided into categories on the basis of parity, i.e. the number of children they already had at the time. I marked with an asterisk (*) those wet nurses, 122 in all, who continued to breastfeed the infants in their care until the end of the period agreed upon with the Spedale degli Innocenti (i.e. the infants survived until they were weaned). The number of women in each parity class is also indicated (n). The interval between the birth of one child and the conception of the next (which I calculated at nine completed months prior to the recorded date of birth) is included in order to highlight the importance of the duration of breastfeeding on the length of the interval itself. Obviously, these are conceptions that lead to full-term pregnancies, that is to the birth of a living child.

Table 1 - Average interval between the birth of one child and the conception of the next and average duration of breastfeeding according to parity (number of children previously born).

Parity	Total wet nurses			Wet nurses(*)		
	n	Ic	A	n	Ic	A
1-2	42	18.2	10.5	18	22.5	15.1
2-3	43	20.1	12.4	27	22.3	15.6
3-4	38	21.4	11.5	20	25.2	15.6
4-5	20	23.3	13.9	15	23.7	16.6
5+	27	22.4	15.3	18	24.8	17.0
Unknown	93	19.7	11.7	24	28.0	18.3
Total	263	20.3	12.1	122	24.5	16.3

As a rule, the length of intervals between the birth of one child and the conception of the next increases in a fairly regular manner. This is exactly as one would have expected, since it is a natural phenomenon connected to the reproductive process; it is also normal to find shorter intervals between birth and conception in later pregnancies (those referred to as 5+) in populations where no deliberate birth control methods are used. As the duration of breastfeeding increases, so too does the length of the interval between birth and the following conception, confirming the existence of a positive relationship between the two events. The duration of breastfeeding is less regular in cases influenced by behavioural factors (presumably later-born children were weaned at an earlier age) and by the incidence of mortality: only in the case of (*)wet nurses do both I_c and A exhibit a more regular progression, and this is obvious since the (*)wet nurses form an even more highly selected sub-group, in the sense that they were able to make full use of their lactation potential as the foundling entrusted to their care survived. By the same token, the data could suggest that, precisely because the infants did survive, these women continued to breastfeed them as long as possible in order to continue receiving payments from the Spedale degli Innocenti. As the table shows, the group of (*)wet nurses has longer breastfeeding periods, but obviously also has longer I_c intervals.

The death of a foundling, as with the death of a natural child, before the end of the planned breastfeeding period (which we will consider as the number of months paid for by the Spedale degli Innocenti) reduced the birth-conception interval; but this was also the case whenever a foundling was returned to the Spedale before the end of the established period. Foundlings were returned for a variety of reasons, usually because the wages paid by the Spedale were considered of less value than the contribution the woman could give to the family economy with her work, especially in certain periods of the year, such as harvest time for farming families. In other words, the 'economic' (or psychological) allocation of the wet nurse's time played a very important role both in the decision to take in a foundling and in the decision to return it to the Spedale before the agreed breastfeeding period had been completed. (If information were available for a larger group of wet nurses, it would be interesting to make a more in-depth study of these socio-economic issues in order to examine their influence on the practice of breastfeeding itself and, at the same time, on fertility and infant mortality.)

Overall, 18.3% of wet nurses conceived while still breastfeeding, but the rate is higher among the (*)wet-nurses (27.0%) than it is among those who suspended breastfeeding before the end of the prescribed period (10.6%). And this difference is noticeable despite the fact that the breastfeeding period is almost identical for the two groups: 11.6 months overall, with an average of 11.8 months for (*)wet nurses, and 11.2 for the others. It is almost as though there were a small sub-group of women with a higher fertility level (that is, who were capable of conceiving earlier), regardless of whether the breastfeeding of the foundling was followed through to the end of the agreed period or not. As is well known, breastfeeding as such does not offer women a fail-safe protection against conception. Yet we also know that for a period following childbirth, which may vary from three to six months, all mothers are completely infertile, whether they are breastfeeding or not. If a woman does not breastfeed her baby, the risk of conceiving will depend on when she resumes sexual relations. On the other hand, there appears to be a breastfeeding threshold for women who do breastfeed, a minimum length of time during which conception does not take place; this threshold depends on a number of

factors which are not all easy to detect and survey in 'historical' populations such as the one we are examining.

Despite the fact that in 18th century Tuscany, cultural, religious and medical precepts forbade sexual intercourse during breastfeeding, a certain number of women did conceive while still breastfeeding. They may have conceived in the period between the death of their own child and the arrival of the foundling, or in the interval between one foundling and the next in the case of those wet nurses who cared for more than one child. These cases should no doubt have been isolated, but the numbers available for study would then have become even smaller. As far as the existence of sexual taboos during breastfeeding periods are concerned, it is worth noting that wet nurses were recommended to the Spedale degli Innocenti by their local parish priests, who then made sure that the women performed the duties they were being paid for with care. In fact, the documents list several cases in which foundlings were taken back by the Spedale after the parish priest reported that the wet nurse had become pregnant again.

These results confirm the existence of a further relationship, which is common knowledge in contemporary populations: a prolonged period of breastfeeding results in longer periods of post-partum amenorrhoea. But it is also well known that this is not a functional relationship, in the sense that breastfeeding cannot indefinitely delay the return of ovulatory cycles. Broadly speaking, in populations characterized by natural fertility (i.e. no deliberate birth control methods are practised), the duration of secondary infertility appears to be fairly constant and (all other things being equal) lasts for about 18 to 24 months in women who breastfeed regularly for between 12 and 18 months. The results presented in this study broadly confirm these data.

The interval between childbirth and the following pregnancy, and the total breastfeeding period (i.e. the natural child until its death and the foundling entrusted to her care) are known for each woman. I thus calculated the number of wet nurses (out of 1,000 women considered from the time of giving birth prior to receiving a foundling for breastfeeding) who had still not conceived again at the beginning of each birth-conception interval (N), and of those who at the beginning of the same intervals were still breastfeeding (N_a). I thus followed a cohort of women which gradually decreased in size over time for two distinct reasons: either because they conceived again or because they stopped breastfeeding. I could have (or should have) considered these two causes together, thereby setting up a complete life table, but my data were insufficient for such an in-depth analysis. The results are illustrated in *Table 2*, which records the total number of wet nurses (columns 1); the proportions of wet nurses who breastfed their foundling until it was weaned, i.e. for the entire period agreed upon with the Spedale degli Innocenti (columns 2); and those who suspended breastfeeding, either because the foundling died or because it was returned to the Spedale prior to completion of the breastfeeding period (columns 3).

Figure 1 presents the distribution of the total number of wet nurses and those who suspended breastfeeding (the (*)wet nurses seen earlier).

It is clear from these data that the (*)wet nurses who breastfed their foundling right up to the time it was weaned have a longer period of post-partum amenorrhoea (i.e. normal ovulatory cycles resume later than in the other women). Infertility and breastfeeding appear to proceed together, with the same rhythm, at least until the twelfth month following

Table 2 - Proportions of wet nurses who have still not conceived and of those who are still breastfeeding (by months after previous childbirth).

Duration (months)	Still infertile (N)			Still breastfeeding (Na)		
	1	2	3	1	2	3
0	1000	1000	1000	1000	1000	1000
3	996	1000	993	886	1000	787
6	943	992	901	772	992	581
9	848	926	780	662	910	447
12	749	861	652	551	836	305
15	654	795	532	411	647	206
18	532	713	376	194	303	99
21	437	615	284	91	147	42
24	373	516	248	61	98	28
27	285	410	177	23	49	—
30	198	295	113	23	49	—
33	160	246	85	15	33	—
36	110	164	64	8	16	—
42	46	82	14	—	—	—
average	20.1	24.4	16.4	11.6	15.8	8.0
median	18.3	24.1	15.2	12.4	15.4	6.6

(¹) Total proportions of wet nurses.

(²)(*)Wet nurses who breastfed for the entire period.

(³) Wet nurses who suspended breastfeeding prior to completion of the agreed period.

childbirth; after this time, the proportion of wet nurses who continue to breastfeed (Na) is quite different to the distribution of women who have still not conceived (N).

The median figures are very interesting: overall, 50% of these women have still not conceived after 18.3 months, with a period of breastfeeding lasting 12.4 months; in those women who continued to breastfeed right up to the end of the allotted period, however, the figures change to 24.1 months before the next conception, after a median period of 15.4 months breastfeeding.

With regard to the group of wet nurses who stopped breastfeeding before the end of the agreed period, the proportion of women who have still not conceived again decreases considerably after 9 months, in direct relation to the suspension of breastfeeding. For this group of women, the median values are 15.2 months (delay) for conception and 6.6 months of breastfeeding.

Figure 2 gives us an even more interesting overall picture: it illustrates the figures from *Table 2* in terms of the Na/N ratio for each of the three groups of women; that is, the percentages of women still breastfeeding and still infertile (stretching the meaning slightly, it could be said that they are infertile because they are still breastfeeding) at the beginning of each interval, in the first two years following childbirth. The upper and the lower curves

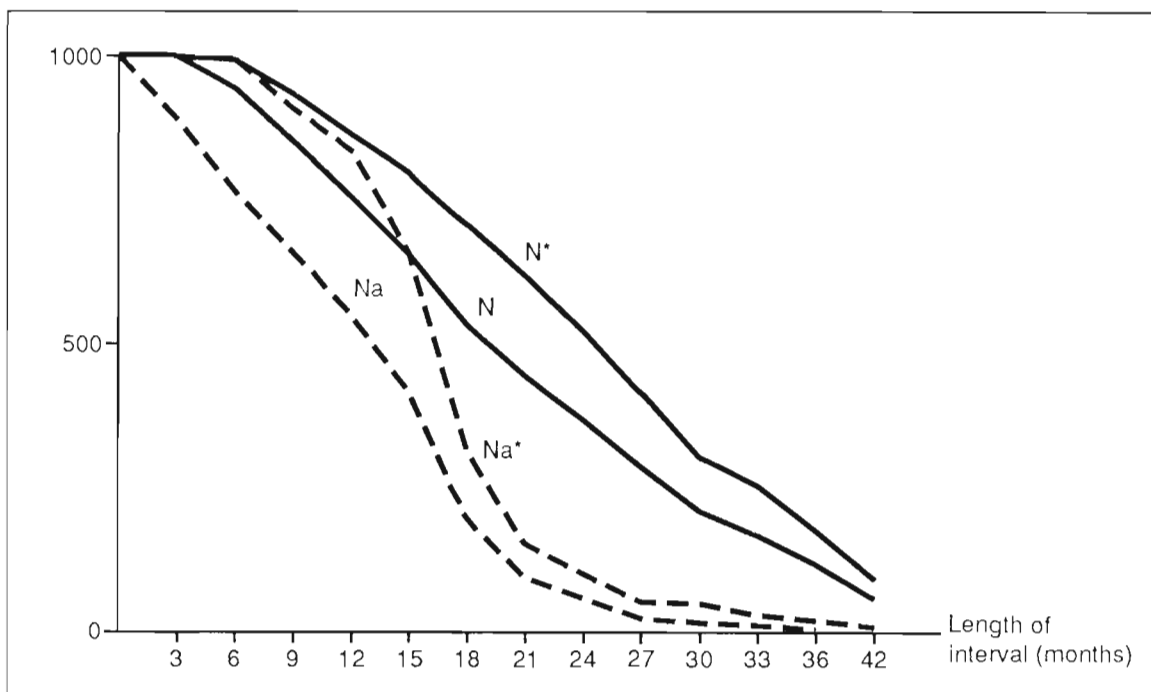


Figure 1 - Proportions of wet nurses who have still not conceived (N, N*) and wet nurses who are still breastfeeding (Na, Na*) (by length of interval from previous childbirth).

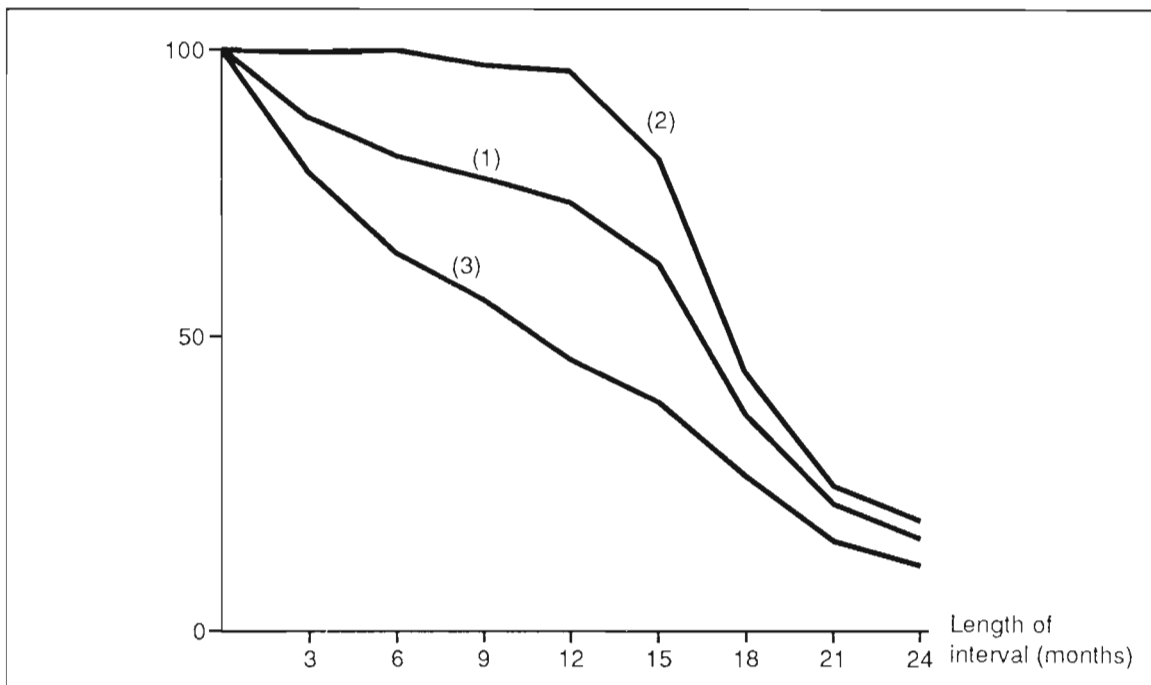


Figure 2 - Proportions of wet nurses who are still breastfeeding per 100 wet nurses who have still not conceived (Na/N).

stress how different the situation is for those women who make the most, so to speak, of the protection afforded by breastfeeding, and those who do not. The differences along the vertical axis could, in other words, be seen as the varying contraceptive effectiveness of breastfeeding according to its duration.

Clearly, these figures are influenced not only by behavioural and cultural factors (the existence of sexual taboos during breastfeeding, for example, or decisions based on economic considerations relating to the allocation of the woman's time which meant that the foundling might be returned to the Spedale before the agreed period was over), but also by biological factors related to the woman's age and the number of children she already had at the time of taking on the foundling. A further biological factor to be considered is intra-uterine mortality, i.e. the possibility that women who breastfed for long periods could also be subject to higher intra-uterine mortality rates (again connected to age and number of previous children), and this would of course make the intervals between pregnancies appear to be much longer by 'hiding' conceptions. Furthermore, it should be recalled that lactation itself (i.e. the production of milk by a woman who has given birth) varies from woman to woman; in the group of wet nurses who stopped breastfeeding there may well be some who, despite continued attempts to breastfeed, no longer produced milk and were therefore compelled to stop.

As we have already seen from the figures in *Table 1*, the duration of breastfeeding increases with the number of children, but this depends on the age of the woman; the process whereby the number of wet nurses decreases in the main group, as shown in *Figure 1*, is related to the underlying and quite separate process of the return of ovulatory cycles which occurs more slowly in older women. Therefore, we see that the average duration of breastfeeding in 20–24 year-old (*)wet nurses is 13.8 months; it increases to 15.5 months in the 25–29 age group, to 17.1 months in the 30–34 age group, and reaches 18.7 months in those aged between 35 and 39. And it is interesting to note that the proportion of time that breastfeeding takes place over the entire birth–conception interval (Ic) in each age group increases uniformly from 66.3% to 70.1%, 71.7%, and finally to 74.5%. Once again, the influence of behavioural factors cannot be ruled out (sexual relations decrease with age, for example, regardless of sexual taboos); nor can we ignore the influence of biological factors for older women, such as intra-uterine mortality and the lengthening of post-partum amenorrhoea due to the increase in anovulatory cycles after childbirth.

As we know the entire reproductive history of this group of wet nurses, it is possible to assess the contribution of 'mercenary' breastfeeding on the Ic interval between the childbirth after which the woman takes on a foundling and the following conception. This may be seen in a broader setting by comparing it to the same woman's previous and following Ic intervals. In order to be able to study as large a number of women as possible, I grouped together those women who received a foundling between their first and second children (only live births are considered) with those who took on foundlings between their second and third children; I then placed the women who had taken on a foundling between their second and third childbirths with those who had done so between their third and fourth, and so on. I was thus able to allow for the influence of the 'natural' lengthening of Ic intervals due to the number of previous children (and age). For each group, i.e. for each parity class, I then calculated both the duration of breastfeeding (A) and the length of the birth–conception interval (Ic) in months. The results are recorded in *Table 3*.

Table 3 - Average Ic intervals in months according to parity.

Parity	$n-2, n-1$	$n-1, n$	$n, n+1$		$n+1, n+2$
	Ic	Ic	Ic	A	Ic
1-2, 2-3	—	18.4	23.3	15.5	21.5
2-3, 3-4	15.9	19.8	24.9	16.3	21.2
3-4, 4-5	17.8	20.1	25.4	15.8	23.5
4-5, 5-6	19.6	19.5	24.9	16.3	29.5
5+	18.8	21.3	26.6	17.0	28.0
Total	18.2	19.9	24.7	15.9	23.2

These data refer to all the women, regardless of whether they completed the breastfeeding period with the foundling as agreed upon. For a more sophisticated comparison of data, I would have had to take into consideration several other factors, such as, for example, the total number of children born to each wet nurse, grouping the women according to age; but this would have meant that the number of cases for study would have been too limited.

On average, in the group as a whole, the Ic interval increases from 18.2 to 19.9 months going from parity class $n-2$ to class n (n is the parity class at which the wet nurse takes on the foundling); but it increases sharply to 24.7 months when the wet nurse breastfeeds the foundling after breastfeeding her own child (the total duration of breastfeeding is 15.9 months), while it decreases to 23.2 months in the following parity class.

As the duration of breastfeeding for legitimate children (measured according to the average age of death of the natural child) hardly varies at all across the different parity classes, about 5.2 months in the $n-1$ parity and 5.5 months in the $n+1$ parity, we can clearly observe the influence of this prolonged ‘mercenary’ breastfeeding on the Ic interval. As we saw earlier, the lengthening of Ic intervals with an increase in parity (examine the figures vertically) fits into a general trend which is related to the age of the woman; on the other hand, the increase in the Ic interval for the same woman according to parity seems to be somewhat larger (the figures horizontally, from $n-2$ to $n+2$). Is this increase due to a different behaviour pattern (longer periods of breastfeeding for the natural child born after the wet nursing experience), or is the combined action of socio-cultural and biological factors still at play? In any case, the individual conception potential is never totally uniform in any group of women.

Breastfeeding and Infant Mortality

Breastfeeding does not only provide the newborn child with essential nourishment, it is also the main means by which an infant is integrated into its family and into society (nowadays the term ‘socialization’ would be used). In all cultures, and in all historical periods, the mother’s breast has always assumed this significance: one need only think of the way it has been idealized in art and literature from the earliest times. The *Madonne del Latte*

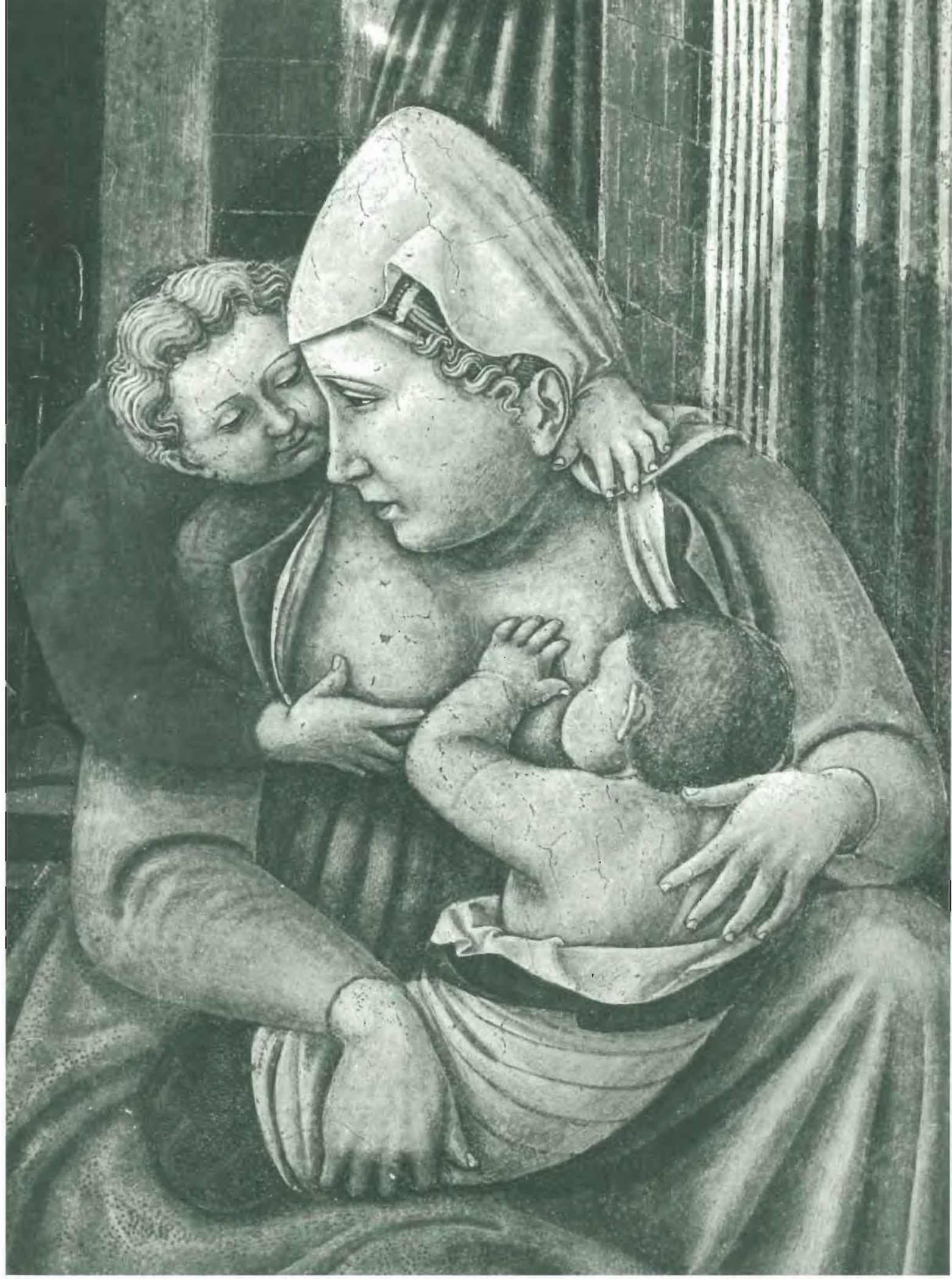
mentioned earlier, the images of the Virgin breastfeeding Christ, also contained this twofold meaning, and their message reached all social classes. The breast did not necessarily have to be a mother's breast; it could also belong to a wet nurse, as the illustration taken from a fresco in the *Spedale di S. Maria della Scala* in Siena testifies: the full breasts of the wet nurse reflect the rounded features of the child. (Notice too the similarity with the I.P.P.F. poster.) The entire life story of foundlings (in an idealized version, naturally) from the moment they arrive at the Spedale, to the care they are given and the education they receive, right until the time they marry and leave the institution's guardianship, begins with the wet nurse's breast. There was no more effective way of 'building' a person than with a woman's milk: "Since we know so well that breastfeeding brings twofold benefits, to the child and to the mother".⁴

This notion, reinforced by experience, has been common knowledge for centuries. However, it was not set down in any systematic or empirically verified manner in Italy until the late 19th century. And this came about not only because infant mortality rates were so alarmingly high, but also largely as an indirect effect of a growing social awareness of the need to protect working mothers. Scientific treatments of the subject, especially in medical treatises, began to appear in the second half of the 18th century, when certain branches of the medical profession began to specialize in infant diseases and their prevention in an attempt to combat the extremely high infant mortality rates: this developing interest eventually led to the birth of modern paediatrics.⁵

The most significant advances were made with the discovery that colostrum, "that whitish lymph which flows from the mother's breast immediately after childbirth", actually contains "many qualities, and each one alone would be sufficient to recommend its use".⁶ This lymph, which until that time had been considered useless, if not actually harmful, was found to be necessary "to prepare the infant's body for a more substantial nourishment",⁷ even if only because it possessed purgative qualities. There was thus a clear awareness that breastfeeding an infant "from the day he is born" would equip him with defences against the initial causes of death. This new attitude spread throughout Europe. The most famous physicians of the age studied the problem of how to provide the best care for infants (this was part of the new ideal vision of the population as a nation's true wealth), and their writings were translated into several languages, with the information thus reaching larger audiences. For example, in Italy the most frequently quoted authorities were medical writers such as J. Ballexerd, J.G. Roederer, G. Armstrong, A. Wilson and N. Rosen de Rosenstein, whose works were translated into Italian in the last quarter of the 18th century.⁸ In 1772, Ballexerd was awarded a prize by the Academy of Sciences, Letters and Arts in Mantua for his treatise on "*What are the main reasons that cause a large number of Men to die in their infancy, and what are the simplest and most effective remedies to preserve their life*". And several Italian authors also published detailed studies on the subject during the same period.⁹

Basing their ideas on direct experience, these physicians all agreed on the need for breastfeeding to begin immediately after birth by the mother herself. There was also general

A wet nurse feeds her well-nourished charge. Detail from a fresco by Domenico di Bartolo detto il Vecchieta, *Affreschi del Pellegrinaio*, Spedale di S. Maria della Scala, Siena.



DISSERTAZIONE

SOPRA IL QUESITO

Quali fiano le cause principali, per cui una gran
parte d'Uomini muore nell' infanzia, e quali
i rimedj più semplici, ed efficaci per
conservar loro la vita

P R E S E N T A T A

D A L S I G N O R

JACOPO BALLEXSERD

CITTADINO DI GINEVRA

Al concorso dell'anno 1772.

E C O R O N A T A

DALLA REALE ACCADEMIA DI SCIENZE
E BELLE LETTERE DI MANTOVA.

IN MANTOVA, MDCCLXXIII.

Per l'Erede di Alberto Pazzoni, Regio-Ducale Stampatore.

C O N L I C E N Z A D E' S U P E R I O R I .

Frontispiece of an early treatise on the problem of infant mortality written by medical author, J. Ballexerd, and published in 1772.

agreement that breastfeeding should continue for the first year of the child's life, and that gradual weaning using easily digestible foods could begin in the sixth month.

It took many years for these recommendations to be accepted. And before they could begin to have a noticeable effect on infant mortality levels in the general population other developments were needed: new attitudes regarding infant care, which were based on the professional training of physicians, obstetricians and midwives, as well as the creation of specialized institutions. Formal recognition of obstetrics and its growth as a specialization was undoubtedly the most important instrument in combating infant mortality, but it was only when fertility began to decrease that there was an effective reduction in infant mortality.

Apart from these suggestions and recommendations formulated by physicians (ideas which spread very slowly for lack of adequate means of dissemination), once again, we have no

direct and accurate data to assess the relationship between breastfeeding and infant mortality. It is clear that the relation exists and that it is due to the specific anti-infective properties of mother's milk and especially to the fact that colostrum is very rich in immunoglobulins: breastfeeding sets up a kind of barrier against some of the illnesses of early infancy, especially intestinal and respiratory diseases. But it is equally clear that we cannot neglect the influence of other pathogenic factors associated with the environmental and sanitary conditions in which infants live; nor should we underestimate the importance of each society's specific cultural traditions regarding infant care.

When studying a population of the past, even if we have a detailed knowledge of the infant mortality pattern, it is difficult to make an adequate assessment of the relationship between breastfeeding and mortality unless we also have information on the duration and intensity of breastfeeding as well as on the social and geographical variations in breastfeeding patterns. It is, in fact, well known that infant mortality, as with any other demographic phenomenon studied in a historical population, varies considerably according to social classes and geographical zones. Similarly, variations in the pattern and figures of infant mortality over time cannot be fully understood unless we are aware of any changes that have taken place in that society's cultural attitudes to infancy during the same period. Clearly, not all social classes had access to the latest developments in medical research. In practice, the duration of breastfeeding was determined by the following pregnancy, for there was a widespread belief that to continue breastfeeding could be harmful for the foetus; the notion that it was necessary to abstain from sexual relations while breastfeeding was based on this belief. But the duration of breastfeeding was also conditioned by the mother's need to work, the allocation of her time, as we saw earlier. Once again, psychological and cultural motivations merged with economic considerations and biological factors.

The same sources we used to study the relationship between breastfeeding and fertility can provide us with some interesting information on the relationship between breastfeeding and infant mortality. The documents in the Spedale degli Innocenti archives give us an analytical account of the early infancy (the first two years of life) of each foundling, and this allows us to measure the mortality rates. *Table 4* is a life table which refers to two cohorts of foundlings (admitted to the Spedale in 1762–64 and in 1809–11 respectively) and two cohorts of legitimate infants (the infants born alive in Florence in 1809 and the infants born alive between 1800 and 1835 into a group of reconstituted families in the parishes of Fiesole and Empoli). I followed these infants for the first two years of their lives in order to construct a more complete picture of the incidence of mortality and the influence of breastfeeding on survival probability.

The cohort of infants born alive in Florence in 1809 came from the general population of the city. They were followed from the day they were born until the day they died by means of nominal linkage between the registers of births and deaths. These registers, now held in the State Archives in Florence, recorded the births, deaths and marriages of all inhabitants of Tuscany, community by community, from 1808 to 1865. The figures referring to the reconstituted families suffer from the well-known limitations of this method (also based on nominal linkage between the births and deaths registers) as far as mortality is concerned, for we have no data on those children who were born in the parish but may have died in a different parish. The data referring to the foundlings only concern infants admitted to the Spedale degli

Table 4 - Infant mortality of foundlings and legitimate infants, by age (months).

Age (x)	Survival (l_x)				Mortality ($q_{x,x+n}$)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
0	1000	1000	1000	1000	187.5	260.5	93.3	86.8
1	809	735	907	913	216.2	189.2	28.4	22.6
3	633	628	881	892	184.8	126.6	31.9	19.9
6	515	548	853	875	92.5	82.3	37.6	20.6
9	466	503	821	857	58.0	74.6	34.2	36.6
12	436	464	793	825	57.1	128.8	26.0	38.3
15	408	403	772	794	71.6	146.1	26.1	30.9
18	372	344	752	769	75.6	89.0	16.8	28.1
21	338	313	739	748	45.9	58.7	10.7	17.9
24	322	294	731	735	—	—	—	—

(¹) Respectively l_x and $q_{x,x+n}$ of foundlings from the 1762–64 cohort.

(²) Respectively l_x and $q_{x,x+n}$ of foundlings from the 1809–11 cohort.

(³) *Idem.*, for infants born alive in Florence in 1809.

(⁴) *Idem.*, for infants born alive in the reconstituted families during the years 1800–35.

Innocenti within the first three days of life: they account for 41.1% of the total 2,352 infants admitted during the period 1762–64, and 61.1% of the 2,142 infants accepted in 1809–11.

Overall, the mortality rates are highly differentiated. In the case of the foundlings, mortality in the first year of life shows a decrease from 556.7 per 1,000 in the 1762–64 cohort to 530.3 per 1,000 in the 1809–11 cohort; but this reduction is actually due to a higher mortality rate in the first month (as can be seen in the table) which went from 187.5 in 1762–64 to 260.5 in 1809–11: a considerable increase due to an effectively higher death risk for this group of infants, making the 1809–11 cohort a more highly selected group after the first month than the 1762–64 one. The years 1809–11 marked a turbulent historical period: in 1808 the Grand Duchy of Tuscany had become one of the *Départements* of the French Empire, and it was inevitable that such a radical political transformation would provoke considerable social and economic upheavals. The general living conditions of the population, especially of the poorer classes who far outnumbered other social groups, considerably worsened during this period.

Evidence of these harsh conditions emerges from the fact that the foundlings admitted to the Spedale during this period were comparatively younger than those admitted in 1762–64, as noted earlier; this can be explained both by the increase in the number of illegitimate children born (illegitimate infants account for the majority of those admitted to the Spedale), as well as by the fact that there was an increase in the number of legitimate children being handed over to the institution at birth, registered as children of unknown parents. This was the only way the very poor could get around the new regulations, introduced in 1805, which prohibited the admission of legitimate children; this practice had been allowed previously in cases of abject poverty or illness of the mother, though these legitimate children had of course tended to be older than the others.

We can also observe a considerable change in the mortality figures during the second year: an increase from 227.6 per 1,000 in the 1762–64 group to 362.0 in the 1809–11 group. It would appear that the slight improvement in the mortality rate achieved during the first year is cancelled out in the second, or worse. Children still alive at their second birthday numbered 322 out of 1,000 in the 1762–64 cohort; but they were down to 294 in the 1809–11 cohort. It should be recalled that these figures have already been slightly reduced to take into account the possibility of children being returned to their legitimate parents during the first two years.

Apart from the obvious influence of the age at which an infant was admitted to the Spedale on its survival chances, other factors connected to specific cultural attitudes towards the care of infants during their first two years also had an affect. Certain innovations had been introduced to the standard care afforded to foundlings. The 1805 regulations, passed by the Regent Louisa and based on French rulings of the time, stated that foundlings should be breastfed throughout the first twelve months of their life. Once again, the documents do not tell us whether the wet nurse's milk could be supplemented by other forms of nourishment and, if so, when such alternative feeding could be introduced. The full weaning process, however, was not to begin before the child's twelfth month. Once again, the parish priests were entrusted with the task of ensuring that the rules were followed.

Figure 3 reports the mortality rates for the two cohorts of foundlings: we can see quite clearly that considerable changes have taken place in the probabilities of survival in the first

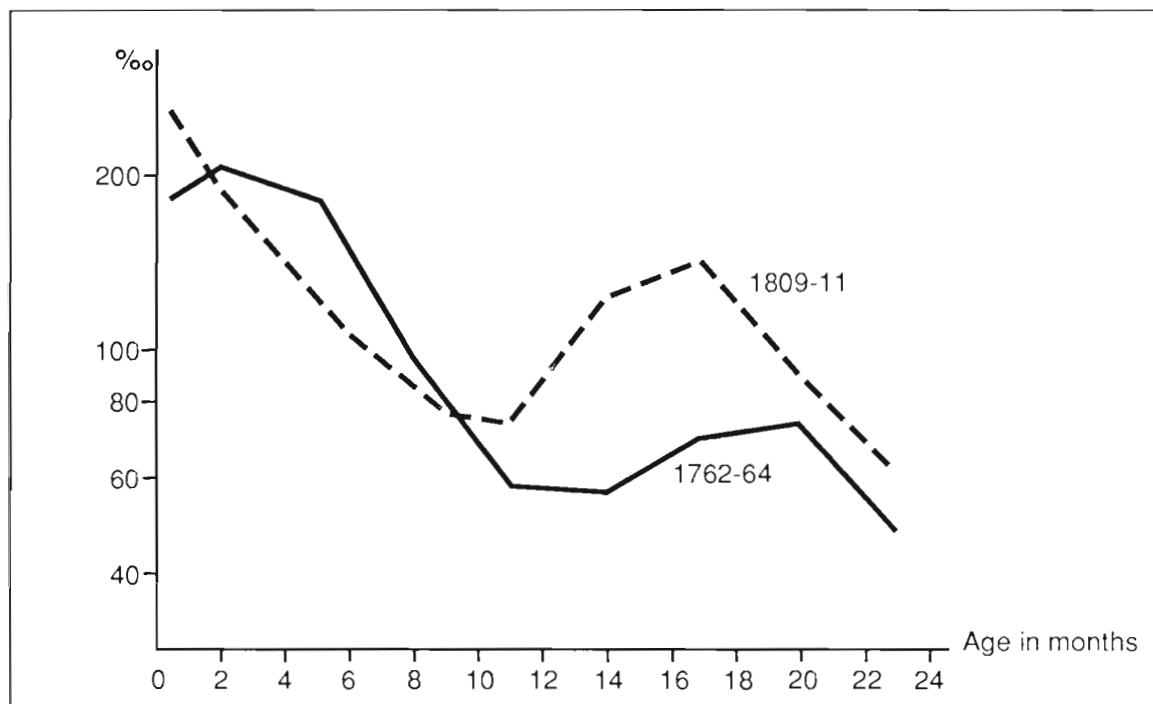


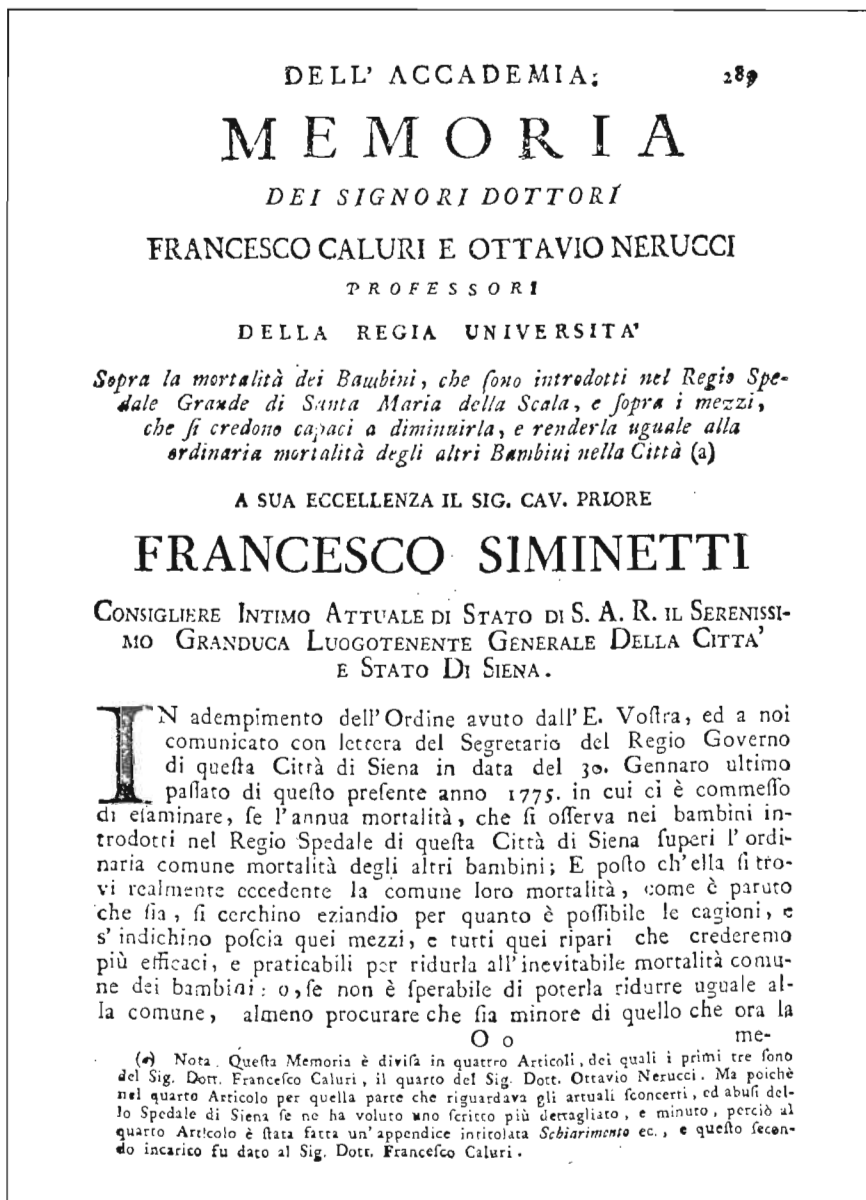
Figure 3 - Mortality rates by age in the first two years of life: two cohorts of foundlings from Florence.

two years of life between the 1760s and the first decade of the 19th century. Although presenting a trend towards reduction, the levels of the 1762–64 cohort are higher, up to the sixth month, than those of the 1809–11 cohort. But then, unlike the second cohort, these levels continue to drop until the thirteenth month; this is followed by a slight increase and then a further reduction. The 1809–11 cohort, on the other hand, has a much steeper drop in mortality after the first month, but this decline falls off around the tenth month, when there is a new increase of deaths which continues until the fourteenth month. This new surge of mortality around the eleventh month is so considerable that it alters the entire profile of the two-year survival patterns, and influences the numbers of the surviving children in the various age ranges. There can be no doubt, in my opinion, that the new regulations governing breastfeeding played a decisive role in this trend: the weaning process, now taking place around the twelfth month, drastically increases the risk of death.

Thus, behind the general change illustrated by these data, a change of a cultural nature one might say, there seems to have been more specific, ultimately political factors at work: a strategic programme implemented in all foundling homes (*Spedali*) in the Grand Duchy of Tuscany, promoted by the government and supported by religious authorities. On 30 January 1775, a committee made up of two doctors from the University of Siena, Francesco Caluri and Ottavio Nerucci, was requested to study “whether the annual mortality rate observed in children admitted to the Royal Hospital of this City, Siena, is in excess of the common mortality rate of other children; and should it be found to be indeed higher, as it appears to be, the causes thereof should be determined; and the Committee should suggest all the most effective and practical means and measures needed to reduce this rate to the ordinary and inevitable mortality rate of children”.¹⁰ The two doctors began their study, gathering analytical data on the survival of all the foundlings admitted to the Spedale in Siena during the previous twenty years, assessing the distribution according to the age of death of those who died within the first seven years of life. Similar data were gathered for all children born in Siena and its environs and for the foundlings in the Florence Spedale. The results, published in the proceedings of the *Accademia dei Fisiocritici* in Siena, showed that the main cause of the higher mortality among foundlings lay “in the greater negligence with which the delicate bodies of the infants” brought to the Spedale were treated. Since “the abandoned infants were in poor health, frail and lacking liveliness” compared to other children, the following recommendations were made: *a*) firstly, “...the number of wet nurses both in the City and in the countryside should be increased. For a greater number of wet nurses would eliminate the need for each to breastfeed more than one infant, as now happens in the majority of cases; with a larger number of wet nurses the Spedale would no longer have to resort to animal milk in certain circumstances...” The number of wet nurses could be increased by “...raising their wages considerably”. It was also suggested that each foundling should be entrusted to a wet nurse living in her own home “as soon as possible”. *b*) Secondly, the doctors concluded that there was a need for reforms to be made to the regulations governing the care to be given to infants, so as to establish a structure that was better equipped to meet their needs. Among the important innovations made were the norms governing the recruiting of ‘internal’ wet nurses (i.e. those living in the Spedale) and the hygienic conditions they were expected to conform to. The concrete result of this survey was the adoption of new regulations, approved by the Grand Duke, under the headings of, “Instructions for the Head Wet Nurse, or

Matron", "Instructions for Physicians and Surgeons" and "New Rules for the Care of Abandoned Children in the Spedale di Santa Maria della Scala in Siena".

But the problem, the high mortality of foundlings, continued to be a matter of grave concern (and I plan to return to this topic on a different occasion). The proposals initially formulated for Siena gradually spread to the rest of the Grand Duchy. It was established that the paid breastfeeding period for wet nurses would be at least 12 months, but this period could be extended if the physical condition of the child required it.



Frontispiece of the study commissioned by the University of Siena and published in the proceedings of the *Accademia dei Fisiocritici* in Siena.

Let us return to the figures in *Table 4*: using these data, *Figure 4* presents the mortality rates of legitimate children (i.e. those children who were fortunate enough to remain in their own families). Here, too, we can notice quite a difference in the mortality rates of the two cohorts, the 1809 group and the 1800–35 group, indicating that there was a difference in the mortality patterns for the city and countryside, even though the overall number of deaths within the first two years of life are quite comparable. The number of children still alive at 24 months is almost exactly the same in both groups: 731 out of 1,000 infants born alive in the Florentine population, 735 in the country areas of Fiesole and Empoli. There are, however, significant differences between the two populations: in the city, mortality is higher in the first nine months, but is then consistently lower than the rates for the country, largely due to the effect of a harsher selection in the earlier stages.

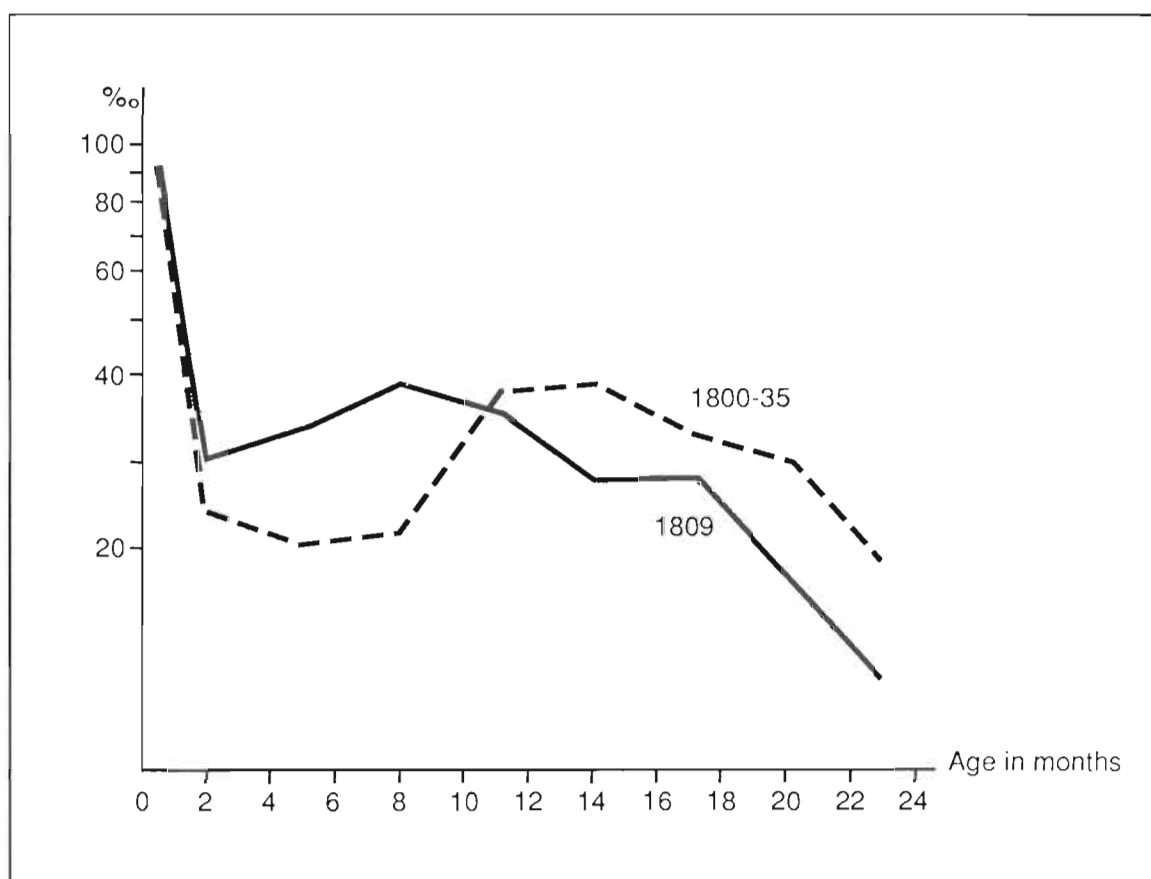


Figure 4 - Mortality rates by age in the first two years of life: two cohorts of legitimate children.

Again, the data suggest different behavioural patterns: it would appear that the care given to infants in the country was of a higher quality than in the city. However, we should not forget that, generally speaking, the majority of people in the city lived in nuclear families in which the mother (normally the only adult woman in the family) not only had to look after

the infant as well as the rest of the family (husband and other children), but in most cases also had to work in order to contribute to the meagre family finances. In the country, on the other hand, the predominant structure was the complex family, which included more than one adult woman: the mother could therefore be relieved of all duties other than caring for the infant, and even in that she could receive help from the other women (except, naturally, for breastfeeding). This was, in fact, one of the reasons why the Spedale (and private families) recruited wet nurses in the country. But there was also a different breastfeeding procedure: from the pattern of the mortality figures we can infer that children in the city were weaned earlier than children in the country. Women in the city were subject to greater pressures to return to work as quickly as possible in order to contribute to the household's finances.

The values in *Table 4* bring a further consideration to mind, which may be substantiated by a comparison of the mortality curve of the 1809–11 foundlings with that of the legitimate children born in the countryside between 1800 and 1835; *Figure 5* illustrates this comparison. Bear in mind that the 1805 rules of the Spedale on breastfeeding fairly accurately reflected the common practice in the countryside, especially in terms of the length of the breastfeeding period, and it was from those areas that the Spedale recruited its wet nurses year in year out

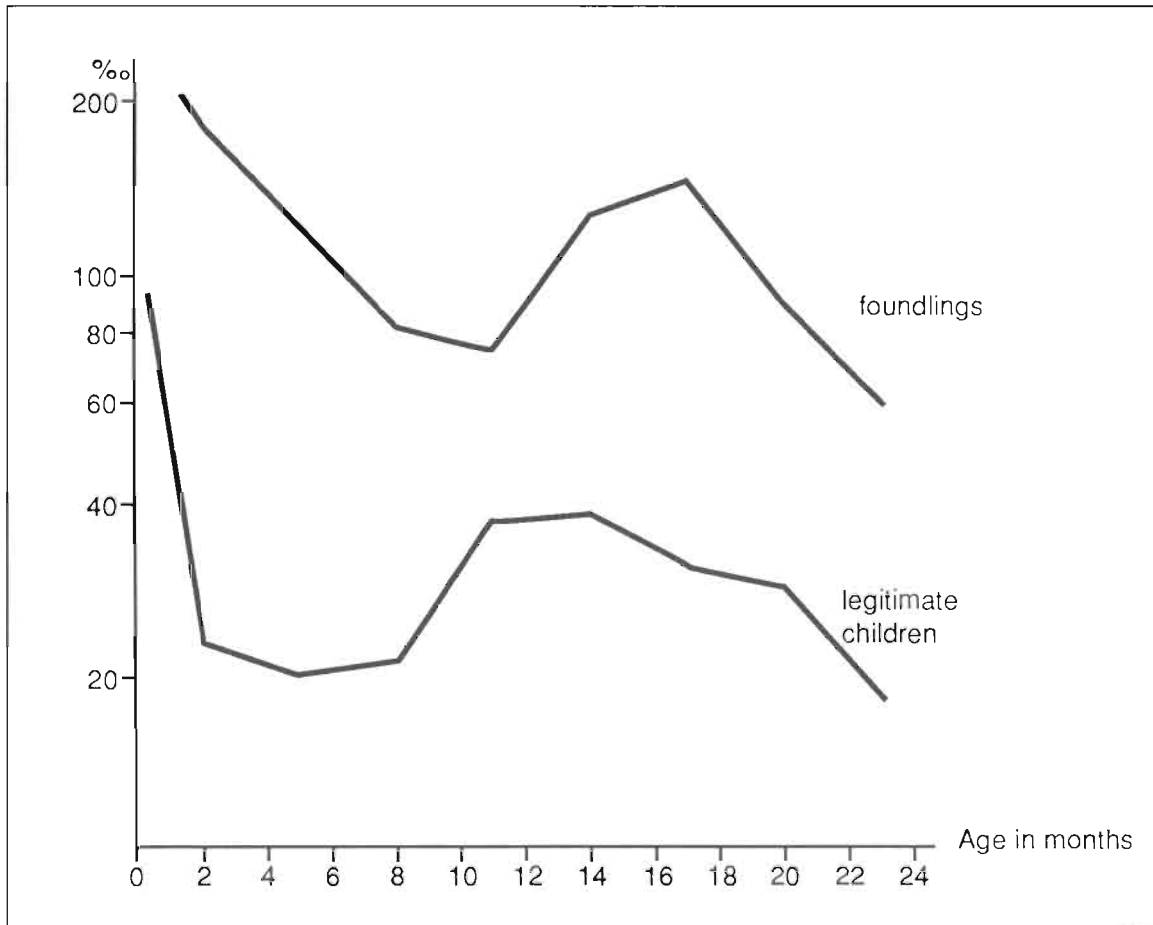


Figure 5 - Mortality rates by age: foundlings and legitimate children.

(because the wages they offered made a considerable difference to the average family budget: the only profit for the 'sale' of a woman's milk, a product which cannot be preserved and continues to be produced only if continued suction is exercised on the breast).

A careful examination of the curves in *Figure 5* points to the following characteristic trends: with regard to the foundlings, mortality declines steadily until the eleventh month, but rises sharply again in the twelfth month, the end of the breastfeeding period agreed upon and paid for by the Spedale degli Innocenti. In certain cases, according to the specific needs and the physical condition of the foundling in question, breastfeeding was, however, allowed to continue. After this interlude the mortality rate once again begins to decline (but that peak has determined a noticeable selection among the foundlings). As far as the legitimate children are concerned, the decline in mortality in the first two months is very marked, but it slows down between the second and seventh months, at which point it begins to increase again;

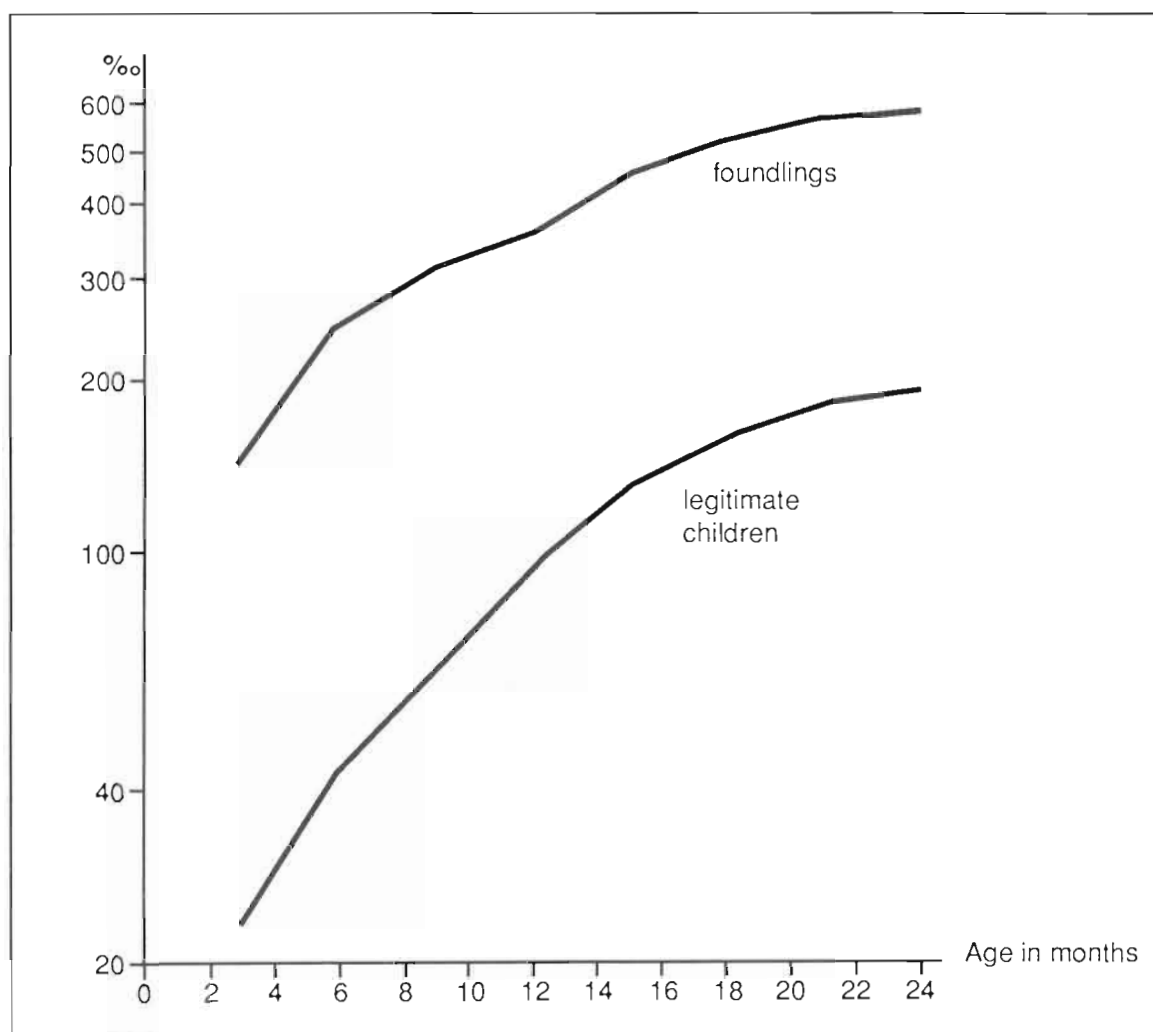


Figure 6 - Cumulative mortality rates by age after the first month of life: foundlings and legitimate children.

though the levels are closely comparable to those of the foundlings from the eleventh month onward. These data indicate that children raised in their own families were weaned earlier. Apart from certain obvious differences in the numbers per age group (the numbers of foundlings are comparatively higher), it is quite clear that the two curves match quite well, indicating the (fairly precise) influence of the length of breastfeeding on mortality.

All other factors being equal, there is quite a striking similarity between the mortality curves of the 1809–11 foundlings and the 1800–35 legitimate children, as *Figure 6* illustrates. The cumulative mortality data are plotted from the second month onward, so as to avoid the differential bias of mortality in the first month. This could mean that it would be possible to ‘reconstruct’ the pattern of breastfeeding (and its duration) according to the pattern and rate of mortality in the first two years of life. But this would only be possible under certain conditions: the population to be studied should not have access to specific baby foods other than mother’s milk, at least for a certain period, and there should be no specific or differential causes of infant mortality due to constitutional or environmental factors (the seasonal nature of infant mortality, according to age, would have to be taken into consideration).

The issue, or phenomenon, that I have tried to illustrate in this essay has very broad implications and warrants further study. The relationship of interdependence among breastfeeding, fertility and infant mortality which I examined in two separate sections, in pairs as it were, could also be approached from another angle: the influence of fertility on infant mortality and on breastfeeding. But this approach would require further data, and different types of data from those available. And, finally, it would require different analytical methods in order to be able to reach a complete understanding of the synergy between breastfeeding, fertility and infant mortality.

Notes

¹ Cf. e.g. Nag and Bongaarts.

² Corsini, 1974 & 1984.

³ Cf. Corsini, 1979.

⁴ Ballexerd, "*Dissertazione sopra il quesito*", p. 23.

⁵ On this issue cf. Latronico.

⁶ Ballexerd, "*Dissertazione sull'educazione fisica*", p. 26.

⁷ *Ibid.*

⁸ Cf. Ballexerd, "*Dissertazione sopra il quesito*" and "*Dissertazione sull'educazione fisica*", Roederer, Armstrong, Wilson, Rosen de Rosenstein.

⁹ Cf. e.g. Gallo, Cocchi, Zeviani, Fantini.

¹⁰ The results of this survey are to be found in Caluri and Nerucci.

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Appendix

INNOCENTI DECLARATION

On the
Protection, Promotion
and Support of
Breastfeeding



1 August, 1990
Florence, Italy

INNOCENTI

On the Protection, Promotion

RECOGNISING that

Breastfeeding is a unique process that:

- provides ideal nutrition for infants and contributes to their healthy growth and development;
- reduces incidence and severity of infectious diseases, thereby lowering infant morbidity and mortality;
- contributes to women's health by reducing the risk of breast and ovarian cancer, and by increasing the spacing between pregnancies;
- provides social and economic benefits to the family and the nation;
- provides most women with a sense of satisfaction when successfully carried out; and that

Recent research has found that:

- these benefits increase with increased exclusiveness¹ of breastfeeding during the first six months of life, and thereafter with increased duration of breastfeeding with complementary foods, and
- programme interventions can result in positive changes in breastfeeding behaviour;

The Innocenti Declaration was produced and adopted by participants at the WHO/UNICEF policymakers' meeting on "Breastfeeding in the 1990s: A Global Initiative", co-sponsored by the United States Agency for International Development (A.I.D.) and the Swedish International Development Authority (SIDA), held at the Spedale degli Innocenti, Florence, Italy, on 30 July - 1 August 1990. The Declaration reflects the content of the original background document for the meeting and the views expressed in group and plenary sessions. It represents the general consensus emerging at the meeting but not necessarily the individual views of each participant.

WE THEREFORE DECLARE that

As a global goal for optimal maternal and child health and nutrition, all women should be enabled to practise exclusive breastfeeding and all infants should be fed exclusively on breast milk from birth to 4-6 months of age. Thereafter, children should continue to be breastfed, while receiving appropriate and adequate complementary foods, for up to two years of age or beyond. This child-feeding ideal is to be achieved by creating an appropriate environment of awareness and support so that women can breastfeed in this manner.

Attainment of the goal requires, in many countries, the reinforcement of a "breastfeeding culture" and its vigorous defence against incursions of a "bottle-feeding culture." This requires commitment and advocacy for social mobilization, utilizing to the full the prestige and authority of acknowledged leaders of society in all walks of life.

Efforts should be made to increase women's confidence in their ability to breastfeed. Such empowerment involves the removal of constraints and influences that manipulate perceptions and behaviour towards breastfeeding, often by subtle and indirect means. This requires sensitivity, continued vigilance, and a responsive and comprehensive communications strategy involving all media and addressed to all levels of society. Furthermore, obstacles to breastfeeding within the health system, the workplace and the community must be eliminated.

DECLARATION

and Support of Breastfeeding

Measures should be taken to ensure that women are adequately nourished for their optimal health and that of their families. Furthermore, ensuring that all women also have access to family planning information and services allows **them to sustain** breastfeeding and avoid **shortened birth intervals** that may compromise **their health and** nutritional status, and that of **their children**.

All governments should develop national breastfeeding policies and set appropriate national targets for the 1990s. They should establish a national system for monitoring the attainment of their targets, and they should develop indicators such as the prevalence of exclusively breastfed infants at discharge from maternity services, and the prevalence of exclusively breastfed infants at four months of age.

National authorities are further urged to integrate their breastfeeding policies into their overall health and development policies. In so doing they should reinforce all actions that protect, promote and support breastfeeding within complementary programmes such as prenatal and perinatal care, nutrition, family planning services, and prevention and treatment of common maternal and childhood diseases. All healthcare staff should be trained in the skills necessary to implement these breastfeeding policies.

¹Exclusive breastfeeding means that no other drink or food is given to the infant; the infant should feed frequently and for unrestricted periods.

²World Health Organisation, Geneva, 1989.

OPERATIONAL TARGETS:

All governments by the year 1995 should have:

- appointed a national breastfeeding coordinator of appropriate authority, and established a multisectoral national breastfeeding committee composed of representatives from relevant government departments, non-governmental organizations, and health professional associations;
- ensured that every facility providing maternity services fully practises all ten of the *Ten Steps to Successful Breastfeeding* set out in the joint WHO/UNICEF statement² "Protecting, promoting and supporting breast-feeding: the special role of maternity services";
- taken action to give effect to the principles and aim of all Articles of the International Code of Marketing of Breast-milk Substitutes and subsequent relevant World Health Assembly resolutions in their entirety; and
- enacted imaginative legislation protecting the breastfeeding rights of working women and established means for its enforcement.

We also call upon international organizations to:

- draw up action strategies for protecting, promoting and supporting breastfeeding, including global monitoring and evaluation of their strategies;
- support national situation analyses and surveys and the development of national goals and targets for action; and
- encourage and support national authorities in planning, implementing, monitoring and evaluating their breastfeeding policies.

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IN FIRENZE
OTTOBRE 1991

