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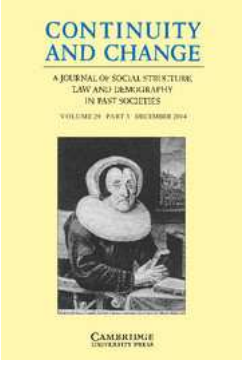

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Child care, infant mortality and the impact of legislation: the case of Florence's foundling hospital, 1840–1940

PIER PAOLO VIAZZO, MARIA BORTOLOTTO and ANDREA ZANOTTO*

I

There is a general consensus that the pattern and practice of infant feeding exercised a crucial role in determining historic levels of infant mortality. In the 1970s, an early wave of historical-demographic studies revealed that, although prolonged breastfeeding prevailed amongst much of Europe's population, there were nevertheless many regions of central and eastern Europe where infants were traditionally breastfed for only a short time, or not at all, and that a strong correlation existed between regional differences in breastfeeding and differences in infant mortality rates.[1] Current research is now pursuing more specific aims, such as explaining spatial and social micro-variations in infant feeding habits, or measuring the extent of women's work outside the home as a critical variable influencing the viability of breastfeeding.[2] The emphasis is, however, more or less explicitly placed on the contrast between *maternal* breastfeeding and artificial feeding. Yet 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 and 'mercenary' breastfeeding by wet nurses. Wet nursing was very common and deeply rooted in France, Italy and other Mediterranean countries, where popular beliefs, socio-economic factors and sometimes even medical theory all contributed to a widespread rejection of maternal breastfeeding.[3] This was especially true of women belonging to the upper strata

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of the population, but large numbers of infants were also sent to wet nurses 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 either by unmarried mothers or by poor parents who could not afford to bring them up.[4]

One major question still open in the history of charity and assistance to infants 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 has recently suggested that large-scale foundling hospitals must have flourished more naturally in societies given to wet nursing because they offered the poor facilities which were analogous, though inferior, to those paid for by the better-off.[5]

There can be little doubt, especially in the case of southern Europe, that the experience of foundling hospitals provides a useful vantage point for social and demographic historians interested in reconstructing patterns of child care in the past and their relationship to infant and childhood mortality. There are several reasons why foundling hospitals deserve attention. First the level of infant mortality could be influenced to a considerable degree by the very extent of abandonment. As recent research has shown, child abandonment tended to increase with the availability of foundling hospitals.[6] This largely explains why, towards the middle of the nineteenth century, well over one-third of all children baptized in major Italian cities like Florence or Milan were abandoned. Since the risk of dying during the first year of life was significantly higher among foundlings, infant mortality rates were ultimately affected by the availability of institutions, whose purpose was – somewhat paradoxically – that of offering shelter and care to needy infants.[7]

To be sure, until the middle of the eighteenth century high mortality appears not to have been a matter of primary concern for the administrators of foundling homes.[8] Their attitude did, however, change very markedly from about 1760. While other factors certainly played a part, such a change is probably best explained by the ideological climate brought about by the Enlightenment. Throughout Europe, as Marie-France Morel has observed, 'Infancy was on the agenda during the period of the Enlightenment: in art, philosophy, morals, medicine, and political economy. The gracious nature of childhood was stressed, as was the need to preserve its innocence, and attention was drawn to the need for investment in children's education.'[9] Also during the Enlightenment, as the first censuses began to be taken in order to determine the amount of available human resources, the desirability was also stressed of a large

number of births to preserve the power of the State, as well as the necessity for this demographic capital not to be wasted.

Nowhere was the waste of young human lives more evident than in foundling homes. The people in charge of their running became painfully aware that institutions expressly designed to improve the lot of children were generally working very poorly, serving instead to increase infant and child mortality. They were therefore in the forefront of research and experimentation to remedy this waste of infant life. Their efforts were, of course, part and parcel of a much wider campaign to save the children's lives launched by administrators and medical men all over Europe,[10] but it should be appreciated that innovations in child care which took a long time to penetrate to the bulk of the population would be immediately implemented in foundling hospitals, and their effects could be more easily and accurately measured. A careful investigation of the functioning of foundling hospitals may therefore provide almost 'experimental' conditions to assess the effects of medical or organizational innovations aimed at enhancing the survival chances of infants and young children. Indeed, as Morel has shown in another study, foundling hospitals were seen by late-eighteenth-century physicians as the ideal ground to test medical theories concerning the presumed advantages of prolonged lactation, or the superiority of breastfeeding over artificial feeding. The practical constraints on foundling hospitals, which had to cope with a rapidly growing number of abandoned infants, urged pioneering experimentation with various methods of artificial feeding. In some regions of Europe, inoculation against smallpox was also first tried in foundling hospitals.[11]

An interesting point underlined by Morel is that in the second half of the eighteenth century many French physicians, besides being medically concerned with the foundlings' health, also harboured the project of turning foundling homes into social laboratories for educating artisans and professionals. In fact, such utopian ideas were widespread all over Europe, and found their most impressive realization in Imperial Russia. In 1763, the year after her accession to the throne, Catherine II established a great foundling home in Moscow, to be followed seven years later by another home in St Petersburg.[12] By envisioning these foundling homes as incubators of an entirely new breed of individuals, she went far beyond even the most advanced contemporary schemes in the area of foundling care, for 'The schools connected with the homes were to inculcate enlightened morality, the work ethic, civic-mindedness, and respect for constituted authority, and thus to create from unwanted children the educated, urban estate that Russia then lacked.'[13]

Exceptional as the Russian experiment may have been in several

respects, similar doctrines inspired the foundation of large centralized foundling hospitals in parts of Europe where institutions of this kind had previously been virtually unheard of, such as Austria, Bohemia, Germany, England and other countries in central and northern Europe. Mostly located in great urban centres, and usually servicing wide surrounding areas, these new hospitals shared a common welfare policy favouring open or 'unrestricted' admission. As is well known, this encouraged a continuous and at times unexpectedly rapid growth in the number of abandonments, thereby posing huge organizational and financial problems. Some of the newly established homes were closed after a short time: this was the case in London, where the system known as the 'General Reception' lasted for only four years, from 1756 to 1760.[14] Elsewhere, measures were taken to stem the flood of abandonments, though generally to no avail.

There is, at first glance, a striking contrast between the admission procedures followed in London in the late 1750s, when all children brought to the doors of the Foundling Hospital were freely and openly accepted, and the modes of abandonment obtaining in southern Europe, where admission was in principle more tightly regulated. Admission to the 'older' hospitals of Latin Europe was supposedly restricted to illegitimate children and to other infants desperately in need of assistance (for instance, babies who had been orphaned by the death of their mothers). The contrast with northern Europe was, however, more apparent than real, for large numbers of unentitled children could be smuggled into the hospitals through the 'wheels', revolving cradles which were so arranged as to allow persons approaching from the street to introduce infants without being seen from within the building. The availability of the wheel, a mechanism which had originally been devised to preserve the honour of abandoning mothers, meant that a *de facto* system of unrestricted admission existed in most of southern Europe. Introduced first in Italy in the late Middle Ages, it was only from the middle of the eighteenth century that wheels began to be heavily used. Although the causes of this social and behavioural change are not yet fully understood,[15] its effects are clear. The data reported in Table 1 show that in southern European hospitals of long foundation, such as those of Lyons, Florence and Milan, the growth in the number of abandonments was almost as steep as in the newly established great State homes of central and eastern Europe.[16]

It should also be noticed that the increase in the number of abandonments had a cumulative effect, as foundling hospitals very often kept their children in charge until early adulthood – and, for girls who failed to get married, even until death.[17] This means that even if the survival rates for foundlings were much lower than for the rest of the

TABLE 1
Mean annual number of admissions: selected European foundling homes (1720–1869)

Decade	*Lyons*	*Milan*	*Florence*	*Vienna*	*Moscow*	*St Petersburg*
1720–1729	458	442	366			
1730–1739	552	622	427			
1740–1749	681	705	550			
1750–1759	753	686	670			
1760–1769	958	687	825		916	
1770–1779	1,449	681	865		1,199	544
1780–1789	1,582	959	1,018	1,837	1,209	950
1790–1799	1,472	1,464	1,244	2,621	1,725	1,514
1800–1809	1,150	1,471	1,269	3,150	2,856	2,303
1810–1819	1,511	1,902	1,357	3,331	3,003	2,685
1820–1829	1,841	1,938	1,391	4,417	5,073	3,803
1830–1839	1,893	2,615	1,644	4,211	6,800	4,009
1840–1849	1,808	3,029	1,605	6,431	7,852	5,421
1850–1859	1,524	4,238	2,326	8,569	11,280	6,496
1860–1869	727	5,073	2,194	9,101	12,039	6,414

Sources: Figures for Lyons, Milan, Florence and Vienna are reported in V. Hunecke, *I trovatelli di Milano* (Bologna, 1989), 294–5; those for Moscow and St Petersburg are derived from D. L. Ransel, *Mothers of misery* (Princeton, 1988), 303–7.

population, the number of children in the charge of foundling hospitals could be very large indeed. The extreme case is provided by Imperial Russia. At the height of its operation, the central foundling home of Moscow was supervising in its fosterage programme more than 40,000 children spread over seven Russian provinces.[18] The size of the establishments was also far from negligible in many other European cities: towards the middle of the nineteenth century, the *famiglie trovatelle* ('foundling families') of Milan and Florence included about 15,000 and 10,000 children respectively.[19]

These figures suffice to give an idea of the mounting pressure on foundling homes originally intended for a much lower number of children, and to explain why, in the course of the nineteenth century, the closure of the wheels began to be seen as the only way out of an increasingly unbearable situation. French hospitals were the first to make this radical move. By 1853 most wheels there had already been shut, and in the second half of the century the French example was to be followed all over Europe. In Italy, the wheels were closed in rapid succession in Ferrara (1867), Milan (1868), Turin (1869), Rome (1872), Genoa and Naples (1874), Verona, Venice, Sienna and Florence (1875).[20] The system of unrestricted

admission survived in Russia until 1891, when radical reforms were enacted to curb admission figures that had reached the appalling levels of nearly 17,000 per year in Moscow and just under 10,000 in St Petersburg.[21]

In his outstanding work on the history of child abandonment in Russia, David Ransel has argued that the reforms there brought an immediate improvement of most critical indexes of the foundling system, and in particular that 'In addition to the drop of admissions, the reforms produced another positive and closely related effect: a decline in the mortality rate at both homes.' While acknowledging that, owing to the methods used by the administrators of the Russian foundling homes to report details, it is difficult to give precise measures of the degree of improvement, he nevertheless estimates that mortality fell by perhaps 15 to 20 per cent.[22]

Indeed, a drastic decline in infant mortality was one of the chief beneficial effects foreseen by the proponents of the abolition of the wheels. It is interesting to note that, although much has been written about the debate that preceded and followed their closure,[23] surprisingly little effort has been made to assess whether the expected decline in infant mortality did actually take place. Even if Ransel's estimates prove correct, one wonders whether and to what extent the conclusions he draws from his study of abandonment in Russia can be generalized. The first aim of this article is to make a contribution to a better understanding of the demographic consequences of a legislative measure – the abolition of the wheel, or other reforms to the same effect – which represented a major watershed in the organization of the foundling system all over Europe. In order to do so, we will examine in some detail the levels and trends of infant mortality at Florence's foundling home, the *Spedale degli Innocenti*, before and after the closure of the wheel in 1875. A remarkable document produced by the *Spedale's* administrators in the 1880s will provide a useful starting point for such an investigation.

This issue, however, touches on a more general problem, namely the vexed question of the impact of legislative measures on infant mortality. In this article, we intend to tackle a few aspects of this question by considering not only the consequences of the closure of the wheel in 1875, but also the effects of later pieces of local and national legislation. Italian official records show that in the 1930s differentials in infant mortality between foundlings and the rest of the infant population, which had previously been very marked, had greatly diminished. In Florence and Tuscany they had virtually disappeared. However, both the causes and the timing of the intervening process of reduction in foundling mortality are not yet satisfactorily understood. In the final part of this article we will follow the evolution of foundling infant mortality in Florence in the first

decades of the twentieth century, and argue that legislative innovation played a crucial role in enhancing the foundlings' survival changes.

II

On 3 November 1883 the governing body of the *Spedale degli Innocenti* sent to the Prefect of the province of Florence a long report of over 200 manuscript pages, in which the main aspects of the welfare activities performed by the foundling hospital in the previous two decades were minutely described.[24] From the opening pages of this unusually detailed and well-organized report, we learn that over the twenty-year period the administrators had been praised several times by the provincial authorities, to whom they were accountable for the management of one of the city's largest charitable institutions. Commendation had been received from the provincial council in 1869, again in 1876, and above all in a resolution of 25 June 1878, which showed great appreciation for the fact that 'expenses had decreased, while mortality among the foundlings sheltered in the home had abated'.[25] In 1882 the situation had further improved, and these satisfactory results, as the compiler of the report is keen to stress, were definitely to be related to the closure of the wheel on 1 July 1875 – 'a highly beneficial measure, made absolutely necessary by the inordinate abuse that occurred because of the wheel itself'.[26]

That expenses decreased very markedly after the abolition of the wheel – from over 500,000 Italian lire in the early 1870s to just 239,000 lire in 1882 – is demonstrated by the figures presented in Table 2. But the report also asserts that infant mortality, too, had noticeably fallen, 'not only in absolute but also in proportional terms', and lays special emphasis on the fact that 'a comparison between the mortality figures for 1882 and those for 1862 indicates that more than twice as many foundlings are kept alive today than was the case twenty years ago'.[27] In fact, as the last two columns in Table 2 show, the data supplied by the report in one of the statistical appendices appear to corroborate such claims. Admittedly, these figures do not lend themselves to a straightforward interpretation. In most nineteenth-century foundlings homes, the reckoning of infant and child mortality was in a state of 'methodological anarchy', which makes the figures contained in official reports difficult both to understand and to compare.[28] The Innocenti Hospital was no exception. As explained in the note to Table 2, the method employed in 1883 by the Florentine administrators to calculate the mortality of 'sucklings' (*lattanti*) entails a serious underestimation of the infant mortality rate as the latter measure is commonly defined.[29] Nevertheless, the figures presented in the report confirm that mortality had declined dramatically between the early 1860s

TABLE 2

Annual number of admissions, total expenses for the maintenance of foundlings and mortality of 'sucklings', Spedale degli Innocenti, 1862–1882

Year	No. of admissions	Expenses (lire)	Mortality (%)[a]	
			Males	Females
1862	2,127	358,004.93	38.13	37.00
1863	2,160	348,743.68	37.13	35.73
1864	2,198	406,965.85	23.12	21.40
1865	2,262	449,428.09	24.22	21.94
1866	2,202	448,469.53	29.67	27.00
1867	2,056	437,024.95	23.33	22.25
1868	2,206	468,276.80	22.11	21.62
1869	2,266	472,120.79	22.25	20.50
1870	2,336	490,030.43	21.53	21.71
1871	2,530	504,221.40	22.73	22.57
1872	2,484	525,294.10	20.92	20.63
1873	2,423	527,681.85	20.83	20.76
1874	2,318	502,167.03	21.67	16.55
1875	1,845	449,759.05	23.57	22.80
1876	1,324	396,783.54	19.57	16.60
1877	1,126	323,448.37	16.51	16.00
1878	1,112	296,450.55	19.90	15.56
1879	1,120	282,633.97	17.11	17.71
1880	981	279,006.02	18.30	16.42
1881	960	250,889.48	21.31	23.11
1882	944	239,237.68	14.74	16.67

[a] The mortality rates reported in this table are the original proportional figures contained in the archival source. They express, in percentages, the ratios between the number of deaths of 'sucklings' (*lattanti*) in a given calendar year and a denominator obtained by adding the number of sucklings alive on the first day of that year to the number of infants admitted to the Foundling Hospital in the course of the following twelve months. From 1862 to 1874 the term 'suckling' indicates all children under 24 months of age, whereas from 1875 to 1882 it designates only infants under 12 months.

Source: Archivio dell'Ospedale degli Innocenti di Firenze (AOIF), Affari Generali, CCCLXI, 76, *Relazione a corredo del Rendimento di conti del Regio Spedale degli Innocenti di Firenze per l'anno 1882*, Allegati A, C.

and the early 1880s, and also that the beginning of a downward trend seemed actually detectable in the very first years after the closure of the wheel, thereby justifying the complimentary remarks made in 1878 by the provincial council.

Even a quick inspection of these data is sufficient, however, to raise a few doubts, or at least a few questions that cannot be answered by the

evidence furnished by the report. It is obvious, first of all, that the really drastic fall in mortality occurred in the early 1860s, rather than after 1875. Secondly, this precipitous fall looks so abrupt as to lead one to suspect that the very high mortality of 1862 and 1863 might just have represented a violent short-term fluctuation rather than the end of a higher-level plateau – and that the Florentine officials might have selected such a high point as a basis for comparison in order to give a greater impression of change. Thirdly, the data reported in Table 2 cannot tell us whether mortality continued to decline fairly smoothly, as it apparently did in the first years after the closure of the wheel, or rather tended to stabilize or even to increase again. Whatever the immediate impact of the abolition of the wheel, its longer-term effects on infant mortality clearly remain to be assessed.

Since the 1883 report provides no information on mortality levels before 1862, and very little is known from the published literature about the evolution of infant mortality at Florence's foundling hospital in the second half of the nineteenth century, the first step to be made consists of constructing a longer time series, in order to put the two decades covered by the report in perspective. Before doing so, however, it will be helpful to consider the relationship between variations in the number of admissions and the problems they created in the organization of child care as well as their potential consequences for infant mortality levels.

III

Designed and built by Filippo Brunelleschi in the first half of the fifteenth century, the *Spedale di Santa Maria degli Innocenti* was possibly the first institution in Europe to be devoted exclusively to the care of foundlings and has received unparalleled attention from students of child abandonment in the late-medieval and Renaissance periods.[30] The wealth of virtually unbroken archival series still preserved within its walls provides historians with a unique opportunity to follow the evolution of child assistance in the same local context over a period of more than five centuries. For reasons that have been discussed elsewhere,[31] some periods in the history of this hospital remain unexplored, but a sizeable number of published studies already permit the existence of major changes to be pinpointed and significant continuities to be observed.[32]

The documentary evidence from the Innocenti archive shows that throughout the history of the hospital, and up until the early decades of the twentieth century, one organizational pattern of child care prevailed. For nearly five hundred years, the same basic principles remained remarkably stable. Foundlings were first fed by the staff of resident wet

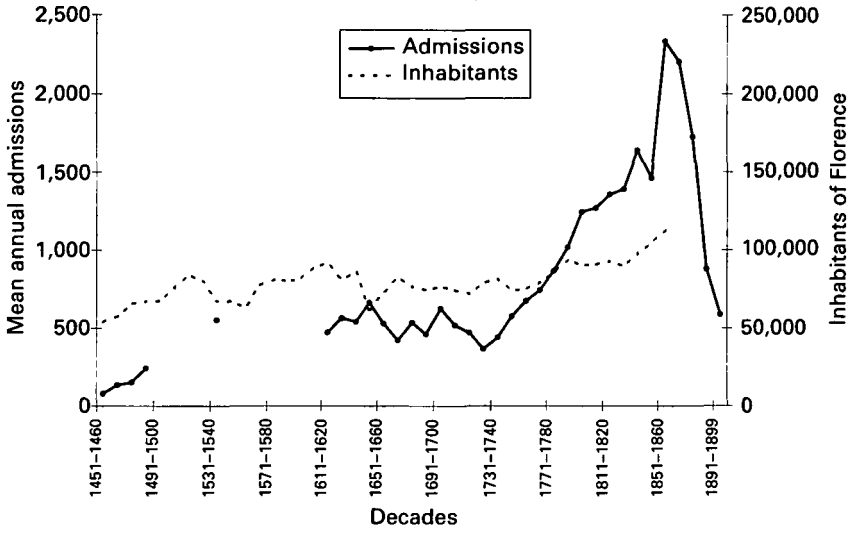

FIGURE 1. Population of Florence (1451–1860) and mean annual number of admissions to the *Spedale degli Innocenti* (1445–1899) by ten-year period. (Comparable data on the population of Florence for the last decades of the nineteenth century are not available because of a change in the city boundaries in 1865.) Sources: Population: A. Zuccagni-Orlandini, *Ricerche statistiche del Granducato di Toscana*, vol. 1 (Florence, 1848), 420–560; L. Castelli, *Città di Firenze. La popolazione e la mortalità del centennio 1791–1890* (Florence, 1893), x–xi. Admissions: P. Gavitt, *Charity and children in Renaissance Florence* (Ann Arbor, 1990), 209; T. Takahashi, 'I bambini e i genitori-espositori dello Spedale di Santa Maria degli Innocenti nel XV secolo', *Annuario dell'Istituto Giapponese di Cultura* **25** (1993); G. Bruscoli, *Lo Spedale di S. Maria degli Innocenti* (Florence, 1900), 281, 294–7; C. A. Corsini, 'Materiali per lo studio della famiglia in Toscana', *Quaderni Storici* **11** (1976), 1039.

nurses. After a few days or weeks, they were sent to wet nurses, mostly living in the countryside, where they usually stayed until it was time to be weaned. Finally they returned to the hospital for a brief period to await the assignment of foster parents.

What did change, and very dramatically, was the *scale* of assistance. We have already noticed the upward trend in the number of admissions to the hospital between the 1720s and the middle of the nineteenth century (see Table 1), but the data plotted in Figure 1 show even more strikingly the difference between comparatively small beginnings in the fifteenth century and the gigantic scale assumed by abandonment in the nineteenth century. From just over 100 admissions per year in the first decades after the hospital's foundation, the average number of infants admitted every year had already increased to over 500 in the 1530s, and was to rise even further to 1,000 in the 1780s and well over 2,000 in the third quarter of the nineteenth century. It may be worth noting that the five-year period that

preceded the closure of the wheel marked an historical height of 2,418 admissions per year.

Figure 1 also shows very emphatically that in Florence the long-term growth of child abandonment was hardly related to the much gentler growth of the urban population. This is not to say that there was no link between abandonment and more general demographic processes. If we consider particular periods, we may find that the growth of the urban population and the increase in the number of admissions to the foundling home were at times proportionally very similar. It can be estimated, for instance, that in the first half of the nineteenth century the urban population increased by 15 to 20 per cent as compared to a rise of 17 per cent in the number of admissions.[33] Perhaps more importantly, it should not be forgotten that a considerable proportion of all children abandoned in Florence is known to have come from the rural hinterland.[34] By and large, however, there can be no doubt that the upsurge in the number of admissions was much greater than any increase in either the urban or the rural sector of the population of Florence's territory. We also cannot rule out the possibility that a rise in illegitimacy, which some scholars would argue to be the single most important factor behind the growth of abandonment in southern Europe in the eighteenth and nineteenth centuries, may also have played a part. Yet neither contemporary observers nor modern historians would dispute that in Florence, as in Milan and other Italian cities, infant abandonment was so extensive primarily because of the 'inordinate abuse' which was made of the wheel to abandon legitimate children. For the first half of the nineteenth century, it has been conservatively estimated that in Florence the proportion of all children abandoned who were legitimate lay between 40 and 70 per cent.[35]

Whatever the causes of the tremendous increase in the number of foundlings depicted in Figure 1, the point to be noticed here is that it obviously entailed, first of all, a corresponding increase in the number of wet nurses to be recruited by the hospital. It can be estimated that in the fifteenth century there were at any time between 15 and 25 in-house wet nurses, and possibly fewer than 100 in the countryside.[36] In the early nineteenth century the average number of resident wet nurses had already grown to 60, and that of women nursing Innocenti foundlings outside the hospital to approximately 400.[37] It is safe to assume that recruitment problems, which had never been absent in the past, must have become increasingly difficult to solve when the number of abandoned infants more than doubled in the course of the nineteenth century.

It also stands to reason that standards of child care must have been affected by these variations in scale, both in the number of yearly

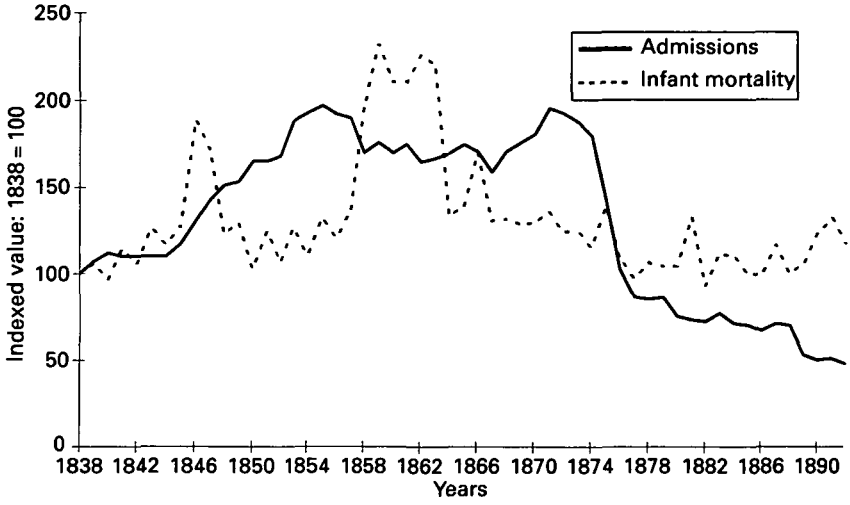

FIGURE 2. Infant mortality and annual number of admissions, *Spedale degli Innocenti*, 1838–1892 (indexed values: 1838 = 100). (Infant mortality is defined here as in Table 2.)

admissions and in the total number of children in charge. When the number of children was small, hospital administrators could hope to be reasonably successful in screening wet nurses and in attracting good ones, but if the number of children increased, the hospital was unable to choose its wet nurses with as much discrimination as it had exercised in less pressing times. A crucial point to be assessed is, therefore, whether the increase in the number of admissions to the Innocenti Hospital really affected the survival chances of foundlings and, if so, how exactly and to what extent.

IV

In order to put the mortality figures provided by the 1883 report into perspective, and to establish whether mortality was affected by variations in the number of hospital admissions, we need first of all a longer time series of infant mortality rates. Whereas annual numbers of admissions have been in print for a long time,[38] the evolution of foundling mortality has to be reconstructed from unpublished, and sometimes fragmentary, statistical data preserved in the Innocenti archive. The raw material required to obtain a time series directly comparable to the figures presented in Table 1 is available for the period 1838–1892.[39] The resulting curve is shown in Figure 2, together with the curve of hospital admissions.

The first finding to emerge from an inspection of this graph is that the high mortality of 1862–1863 was neither the end of a plateau nor an isolated peak, but rather the tail of a fairly long crisis which had started

abruptly in 1858. Figure 2 also shows that, despite a steep drop in admissions over the 1870s in the 1880s and early 1890s, infant mortality hardly declined. Indeed, throughout the period covered by our time series no obvious correlation seems to exist between trends in infant mortality and variations in the number of hospital admissions. Neither the mortality peak of the mid-1840s nor the major crisis of the years 1858–1863 appears to be related to any sudden increase in the number of foundlings admitted to the Innocenti. If anything, the dramatic rise in mortality of 1858 came when abandonment was slightly on the wane.

If increased mortality was not related to a rise in the number of admissions, how can it be explained? As there is no evidence pointing to a clear relationship between higher than average mortality and general situations of economic, social or political disruption, it would seem legitimate to think of the impact of epidemic diseases as the most likely explanation. Once again, however, the available evidence does not suggest any close link between crisis mortality and epidemics.[40] Causes are to be looked for elsewhere.

It is interesting to discover that the hospital administrators, too, could be puzzled about the causes of bouts of crisis mortality among the foundlings entrusted to their care. This is well documented, especially for the great crisis of 1858–1863. On 12 October 1861 the director of Florence's foundling home, Mr Torello Pianigiani, communicated to the sanitary inspector, Dr Luigi Calosi, that

> for the enlightenment of this direction, the proportional figures relating to the mortality of nursing infants in this *Spedale*, during the two decades from 1841 to 1860, have been extracted from the Registers of the Pious Establishment. I cannot dissimulate from your illustrious person that it has been very painful for me to become aware of the great increase that the figures of the last three years portray as compared with previous years. This is a situation which invites most serious consideration, both to ascertain the cause and to adopt accordingly adequate measures.

He enclosed an alarming set of figures which indicated that since 1858 the rate of mortality among sucklings had been nearly twice as high as it had been for the previous twenty years, and also that both the number and the proportion of infants who had died within the walls of the foundling home had almost trebled. By contrast, mortality levels among infants being breastfed by external wet nurses had remained virtually unchanged.[41]

Dr Calosi's reply was that the recent increase in mortality 'had not caught him unawares, even though he did not know the exact figures', and his opinion about the causes of this increase was definite:

> The cause of this desolate situation is not to be sought in any epidemic disease which might have struck the children sheltered in our *Spedale*, as might at first glance have been deduced from the number of deaths, which has almost tripled. It is therefore indispensable to abandon the field of pathology to apprise the reasons.

According to Calosi, two main causes could be detected – one general, and one specific. Interestingly enough, the general cause was represented, in his judgement, by the enormous and ever-growing number of children admitted to the Innocenti. More specifically, however, the crisis had been triggered by an unexpected dearth of 'external' wet nurses, whose number had suddenly become grossly inadequate. Infants had therefore to stay within the foundling hospital for longer periods than had been the case before. This greatly increased the risk of death, all the more so in view of the fact that, internal wet nurses also being insufficient in number, most infants had to be fed goat's milk.[42]

The reasons why the supply of wet nurses had dropped so suddenly, in a period in which demand was at its highest, were still unclear to the director of the hospital a couple of years later. In a letter of 28 July 1863 addressed to the Prefect of the province of Florence, he could do no more than suggest that a series of good harvests had probably made wet nursing a less attractive or necessary source of supplementary income for women in the countryside. And it also seemed likely that the introduction of military conscription had entailed a decrease in the number of marriages, thereby reducing the number of potential nurses on the market. It was certain, on the other hand, that the remuneration the hospital had been offering to prospective wet nurses was no longer adequate and could scarcely compete with the salaries obtainable on the 'private' market.[43]

Pianigiani reckoned that the only possible remedy consisted in increasing the wet nurses' pay by no less than one-third. This would entail an additional expenditure of about 36,000 lire per year, but appeared to be the only way of putting an end to the carnage.[44] The Prefect was convinced by Pianigiani's arguments, and gave permission for the monthly salary of 'external' wet nurses to be raised from 7.56 to 10 Italian lire.[45] This measure, as the hospital administrators were to remark some twenty years later, 'proved as expected exceedingly effective'.[46] Infant mortality, as shown by the data reported in Table 2, instantly fell by over 40 per cent. No less importantly, in the 1883 report we read that 'After the increase in remuneration, external wet nurses were never lacking and often it happened that they had to be sent away without any child being entrusted to them.'[47]

This final point prompts a few considerations. Although variations in infant mortality do not appear to be closely and immediately related to variations in the number of hospital admissions, the existence of a link is nevertheless repeatedly suggested by informed contemporary observers. This was Dr Calosi's view, as we have seen. The same argument was also put forward by the hospital's director in his letter to the Prefect of the province of Florence of July 1863. While emphasizing that the sudden and

largely inexplicable dearth of wet nurses had been the triggering factor, he also maintained that the massive number of infants admitted to the hospital every year was endemically straining the resources of the establishment and increasing its vulnerability to potential situations of crisis. Such an inordinate number of admissions was, in its turn, mainly due to the deep-rooted practice of using the wheel to abandon legitimate children. He was therefore asking for a general law to be enforced throughout the Kingdom of Italy, 'in order to put an end to such a persistent and widespread breach of the rules'.[48]

Such a national law was to come only sixty years later. In the meantime, as we have noted, most local authorities ordered the closure of the wheels. As the case of the Innocenti Hospital suggests, this measure provided considerable financial relief to the foundling homes. The fact that after 1863 'external wet nurses were never lacking' indicates that Florence's foundling hospital was able to compete successfully with the 'private sector' on the difficult wet nursing market. But the financial effort was very large indeed and increasingly hard to sustain. The risk of succumbing to another crisis precipitated by a dearth of wet nurses was constantly around the corner. The drastic drop of admissions brought about by the abolition of the wheel considerably reduced such a risk and is likely to have had important stabilizing effects on infant mortality trends. However, if we consider the levels of mortality in a fairly long-term perspective, we are led to rather different conclusions.

A series of medical reports issued by the Innocenti between 1897 and 1904 (and unfortunately discontinued after the latter date) offers excellent cohort data which show that towards the turn of the century infant mortality rates fluctuated between 280 and 340 per thousand, with an average value of exactly 314 per thousand (see Table 3). Such levels of mortality, as the Innocenti medical officers were keen to remark, were lower than in most other Italian establishments.[49] However, if we compare these rates with the mortality experience of previous cohorts of foundlings, the picture looks less encouraging. If we go back some 25 years and consider the first cohort of foundlings to be admitted to the Innocenti after the closure of the wheel, the 1876 cohort, we find that the infant mortality rate was very much the same, at 315 per thousand.[50] Perhaps even more strikingly, the rate calculated by Corsini for the cohort of foundlings admitted in 1841 turns out to be exactly the same (at 313.9 per thousand) as in the years around the turn of the century.[51] These cohort data confirm what the mortality curve in Figure 2 had already suggested, namely that in the sixty years between the early 1840s and the beginning of the twentieth century the level of infant mortality amongst Florence's foundlings had hardly declined and that the closure of the wheel, while

TABLE 3
Infant mortality rates (IMR) for eight cohorts of foundlings, Spedale degli Innocenti, Florence, 1896–1903

Year	*Cohort size*	*No. of infant deaths*	*IMR*[a]
1896	876	244	278.5
1897	930	291	312.9
1898	981	294	299.7
1899	911	312	342.5
1900	904	283	313.1
1901	956	304	318.0
1902	994	325	327.0
1903	862	275	319.0
1896–1903	7,414	2,328	314.0

[a] Proportion of infants admitted to the Innocenti in a given year who died before reaching their first birthday.

Sources: R. Spedale degli Innocenti, *Resoconti amministrativo-statistico-sanitari* (Florence, 1898–1908).

undeniably exerting a number of beneficial effects, did not mark a decisive turning point.

V

In spite of repeated attempts to improve hygienic standards and to introduce a more rational management of the establishments, in the first years of the twentieth century the levels of infant mortality among foundlings remained disappointingly high both in Florence and in the rest of Italy. The marked fall in the number of admissions brought about by the abolition of the wheel had apparently failed to produce the desired effect on infant mortality.

In all fairness, it should be acknowledged that the benefits of the closure of the wheels were partly offset by the effects of another legislative measure, namely an 1887 order of the Italian Ministry of the Interior, which required that all foundlings suspected of having syphilis be fed artificially. As a number of contemporary observers complained, doctors were often overscrupulous in complying with this order and prescribed artificial feeding even to infants who were only slightly suspected of carrying syphilis.[52] What is more, since it was known that the symptoms of syphilis could become visible only a few weeks after birth, foundling homes became more reluctant than they had been in the past to send infants immediately out to external wet nurses. In Florence all foundlings were kept under medical observation for a period of 15 to 30 days, and the

TABLE 4
Infant mortality rates for seven cohorts of foundlings, Spedale degli Innocenti, Florence, 1913–1919

Year	*Cohort size*	*No. of infant deaths*	*IMR*[a]
1913	647	159	245.7
1914	652	167	256.1
1915	683	193	282.6
1916	639	295	461.7
1917	559	246	440.1
1918	649	405	624.0
1919	590	164	278.0

[a] Proportion of infants admitted to the Innocenti in a given year who died before reaching their first birthday.

Sources: AOIF, XVI, *Registrazione delle creature illegittime introdotte*, 1913–1919, and XVII, *Registrazione delle creature legittime introdotte*, 1913–1919.

administrators of the Innocenti were clearly aware that the tighter controls imposed by the authorities to check the spread of syphilis were largely responsible for the continuing high levels of mortality. As one of them wrote, 'The measures taken to prevent the diffusion of syphilis, while rightful in themselves, lead foundlings to artificial feeding, and in its turn artificial feeding often leads foundlings to the grave.'[53]

Although the quality of the statistical data provided by the Innocenti Hospital worsens after 1904, it can be safely estimated that throughout the first decade of the twentieth century infant mortality consistently exceeded the 300 per thousand mark.[54] Suddenly, in 1910 it fell to a value of about 250 per thousand and was to remain quite stable for the next four years. The reasons for this shift to a lower-level, if short-lived, plateau are not completely clear. Official reports published in the late 1910s attribute it to hygienic and medical improvements. It would seem, however, that this clearly perceptible fall in infant mortality was largely caused, once again, by an increase in the salaries of both internal and external wet nurses.[55] It is likely that particularly the increase in the salary of internal wet nurses had significant effects, because it allowed a reduction in the number of children who had to be fed artificially before being sent out to external nurses.

The outbreak of the Great War ended this short period of relatively low mortality and precipitated a major crisis. As shown by the cohort data presented in Table 4, infant mortality began to rise in 1915, which was the first year of war for Italy. It was in 1916, however, that infant mortality

jumped to a rate of over 450 per thousand. Mortality hardly declined in 1917, and in 1918 it increased again to reach a level of 624 per thousand. The amazingly high mortality of 1918 was obviously due, to some extent, to the impact of the influenza pandemic, which struck Florence in the last quarter of 1918 and in the first months of 1919 and is sometimes specifically indicated in the registers as the cause of death. But mortality, though certainly on the increase in the last months of 1918, was already very high before the arrival of the 'Spanish flu'. Moreover, a report written by the Innocenti's chief medical officer on 4 January 1919 positively states that the influenza had only marginally affected young foundlings under one year of age.[56]

Another major cause of death was the sickliness of many abandoned children, which doctors attributed to the poor health and nutrition of their mothers. But once again, as in the late 1850s, the crisis was triggered by a sudden drop in the supply of wet nurses. Exact data are available only for internal wet nurses, whose number declined from 24 in 1916 to 11 in 1917 and just 8 in 1918.[57] Also the increasingly alarmed reports of the war years leave no doubt that the hospital was having great difficulty in placing its foundlings with external wet nurses. Because of the war, both nuptiality and fertility had declined, thereby lowering the number of potential nurses. Moreover, as we learn from these reports, most peasant women had to replace their absent husbands in agricultural work, and the few women left on the market were 'cornered' by families looking for private wet nurses.[58]

Rather more quickly than their predecessors in the 1850s, the administrators of the Innocenti tried to stem the tide of mortality by promptly raising the monthly salaries of both internal and external wet nurses, once in 1917 and again at the end of 1918. This time, however, the results were discouraging and laid bare the vulnerability of a system in which the survival of infants crucially depended on the availability of wet nurses. More radical measures were clearly needed. One effective solution was at hand, and consisted in requesting the mothers of the illegitimate children admitted to the Innocenti to breastfeed their own babies. This system had already produced good results in other Italian cities, including Milan and Rome, where maternal breastfeeding had been recently made compulsory by local authorities.[59] In Florence itself the experiment pursued by the *Asilo Materno*, a private institution founded in 1910 to provide shelter and assistance to pregnant unwed women, had demonstrated the advantages of the new system.[60] However, such an innovation involved complex moral concerns and entailed a re-organization of the whole foundling system, which was based on the premise that babies should be immediately separated from their unwed

TABLE 5

Infant mortality and proportion of foundlings breastfed by their own mothers, Spedale degli Innocenti, Florence, 1919–1936

Year	*No. of admissions*	*% breastfed by mothers*	*IMR*[a]
1919	590	48	296.6
1920	714	71	189.0
1921	558	84	123.7
1922	470	91	123.4
1923	410	75	150.4
1924	371	85	158.6
1925	369	76	105.7
1926	281	68	171.1
1927	315	72	94.5
1928	358	75	67.0
1929	369	58	62.3
1930	420	58	71.4
1931	401	59	62.3
1932	311	62	112.5
1933	421	59	57.0
1934	405	63	93.8
1935	432	59	67.1
1936	514	77	33.1

[a] The infant mortality rate expresses the ratio between the number of foundlings who died under twelve months of age in a given calendar year and the number of infants admitted to the Innocenti Hospital in the same calendar year.

Sources: G. Guidi, *R. Spedale degli Innocenti. Rendiconto statistico clinico per il quinquennio 1923–1927* (Florence, 1929), 24–5; G. Guidi, *R. Spedale degli Innocenti. Rendiconto statistico clinico per gli anni dal 1928 al 1936* (Empoli, 1938), 73.

mothers. This explains why the attitude of the administrators of some Italian foundling homes, including the Innocenti, was at first rather cool. The moral dilemmas involved are vividly illustrated in a report drawn up by one of the top officials at the Innocenti on 24 July 1917, right in the middle of the great mortality crisis. Faced by the enormous increase in the number of infant deaths, he recognized that maternal breastfeeding was the only possible solution:

> But here is the nub of the matter. How, when, and to what extent can these young mothers be allowed to breastfeed their own infants? Which is to be preferred: constraints imposed through fear of a pernicious diffusion of immorality... or rather the radical, innovative measures taken in Milan and Rome?[61]

The dramatic surge in infant mortality, however, left no choice. In that same year, 1917, it was resolved that the unwed mothers of children

TABLE 6
Methods of infant feeding and differentials in infant mortality, Spedale degli Innocenti, Florence, 1928–1936

Method of feeding	*No. of infants*	*No. of infant deaths*	*IMR*
Breastfed by mother	2,315	111	47.9
Breastfed by wet nurse	1,272	119	93.6
Artificially fed	44	15	340.9
Total	3,631	245	67.5

Source: G. Guidi, *Regio Spedale degli Innocenti. Rendiconto statistico clinico per gli anni dal 1928 al 1936* (Empoli, 1938), 73.

admitted to the Innocenti had to be strongly encouraged (though not forced, as in Milan and Rome) to breastfeed their babies.[62]

At first the shift to the new system enjoyed very limited success. In 1918 the proportion of foundlings breastfed by their mothers was very low, at about 20 per cent. It increased somewhat in 1919, when pressures on the part of the foundling home became stronger. It was only when the new system was made compulsory by Florence's local authorities, in 1920, that the proportion of 'maternally breastfed' foundlings rocketed to 71 per cent in 1920, 84 per cent in 1921 and 91 per cent in 1922.[63] The effects on infant mortality, as Table 5 shows, were striking. In 1920, in spite of an increased number of admissions, infant mortality fell for the first time below the 200 per thousand mark. No less impressively, in 1921 it went down to just 123.7 per thousand, a value which compared favourably with the rate of 129.3 per thousand for the Italian infant population at large.[64]

In 1923 a national law made breastfeeding of foundlings by their unwed mothers compulsory for the whole Italian territory. Once again, as had previously happened with the closure of the wheels, radical changes in the organization of the foundling system were initially brought about by legislative measures taken at the local level before the passing of national laws. It is interesting to note that the law of 1923, besides making maternal breastfeeding compulsory, also definitively banned the use of wheels to abandon infants, a practice which had survived in a small minority of Italian towns. Rather paradoxically, in the years that followed the enactment of the national law, the proportion of Florentine foundlings breastfed by their mothers somewhat declined. Nevertheless, infant mortality continued to fall. In the period 1928–1936, as shown by Table 6, it was on a par with the level recorded for legitimate children in Tuscany in the 1930s (66.8 per thousand) and well below the national level, which

was in the region of 100 per thousand.[65] The reasons are not hard to see. The sharp mortality decline of the early 1920s was, of course, partly due to the fact that 'maternal' breastfeeding was safer than 'mercenary' breastfeeding, not to mention artificial feeding. The gap, as shown again by the figures in Table 6, was still very wide by the early 1930s, but the decisive consequence of the shift to the new system was that it drastically reduced the secular dependence of Florence's foundling home on wet nurses and confined artificial feeding to an almost negligible number of very sick babies who could not be fed otherwise.

VI

In this article we have tried to assess the impact of a series of legislative measures on the levels and trends of infant mortality among the babies admitted to Florence's foundling home between the middle of the nineteenth century and the Second World War. The evidence we have presented suggests that the effects of the best known of these legislative reforms, the closure of the 'wheel' in 1875, were less significant than its proponents had foreseen and modern scholars might be tempted to assume. Although more studies of individual cases are clearly needed before any generalization can be safely attempted, there are reasons to believe that much the same happened in most other Italian foundling homes.

This is not to say, however, that legislation played no significant role in reducing the mortality of foundlings. Quite to the contrary, our evidence indicates that a crucial turning point was represented, some fifty years after the abolition of the wheel, by a set of legislative measures which required the unwed mothers of infants admitted to Florence's foundling home to breastfeed their babies. The main reason why such a major reform as the abolition of the wheel failed to have decisive effects on infant mortality was that it did not bring into question the basic principle according to which foundlings had to be immediately separated from their mothers and entrusted to wet nurses. This principle, in its turn, rested on the tenet that illegitimate children had to be taken from their mothers both for the sake of public morality and for the good of the children themselves.

By imposing a clear-cut separation between legitimate and illegitimate children, and virtually restricting admission to the latter, the closure of the wheel in 1875 created some of the premises for the reorganization of the foundling system which was to take place in the early 1920s. The way to reform was, however, mainly paved by the social welfare movement of the last decades of the nineteenth century, which emphasized both the right of the mother to be made responsible for her illegitimate child and the right

of the child itself to have a fair chance to survive the first months of its life.[66] Yet the traditional attitudes towards illegitimacy and unwed mothers were hard to eradicate. In the years of the Great War, when the inability of foundling homes to recruit enough wet nurses to keep the babies alive became patent, a shift to the new system became imperative. As the case of Florence has shown, this involved difficult decisions, but the right of foundlings to survive eventually prevailed and the huge, adverse differentials in infant mortality which had been a tragic hallmark of foundling hospitals for centuries rapidly disappeared.

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ENDNOTES

1 A succinct and authoritative review of the results of this early wave of studies is provided by J. Knodel, 'Breast-feeding and population growth', *Science* **198** (1977), 1111–15.

2 See R. Lee, 'Infant, child and maternal mortality in western Europe: a critique', in A. Brändström and L.-G. Tedebrand eds., *Society, health and population during the demographic transition* (Stockholm, 1988), 9–21.

3 Just how widespread this practice was in the European past remains exceedingly difficult to ascertain. Even for France, which is by far the best documented country, any survey of wet nursing before the last quarter of the nineteenth century is bound to be impressionistic. Some evidence for Paris indicates, however, that in the 1780s over 90 per cent of all newborns were placed with wet nurses. The proportion dropped to about 50 per cent in 1801–1802 and to a conservative estimate of 41 per cent in 1869. Around 1900, when the wet nursing business was markedly on the decline, the total number of infants placed with wet nurses every year was still as high as 80,000 (slightly over 10 per cent of all newborns). See G. D. Sussman, *Selling mother's milk. The wet-nursing business in France, 1715–1914* (Urbana, Ill., 1982), 101–88; Sussman also shows that the practice of sending infant children away to be cared for by mercenary wet nurses was essentially an exchange between cities and at first, their rural hinterlands and later with their larger regional markets. It is worth noting that in the late nineteenth century the rates of infant mortality recorded in many rural French departments were significantly affected by the ratio between the number of nurslings 'imported' from distant urban areas and the number of locally born infants.

4 For a broad historical overview of wet nursing, including the nursing of abandoned infants, see V. Fildes, *Wet nursing. A history from antiquity to the present* (Oxford, 1988). A useful survey of the literature is also provided by S. F. Matthews Grieco,

'Breastfeeding, wet nursing and infant mortality in Europe (1400–1800)', in S. F. Matthews Grieco and C. A. Corsini, *Historical perspectives on breastfeeding* (Florence, 1991), 15–62.

5 B. Pullan, *Orphans and foundlings in early modern Europe* (The Stenton Lecture 1988; Reading, 1989), 10–11, 24. Although most writers would probably still trace these differences to the religious divide between Catholic and Protestant Europe, their argument is partly undermined by the fact that foundling hospitals were much more firmly established in the southern countries than in the rest of Europe well before the Reformation.

6 See V. Hunecke, 'Intensità e fluttuazioni degli abbandoni dal XV al XIX secolo', in J.-P. Bardet *et al.*, *Enfance abandonnée et société en Europe, XIVe–XXe siècle* (Rome, 1991), 32–6.

7 For a survey of the literature and a general statement of these findings, see V. Hunecke. *I trovatelli di Milano. Bambini esposti e famiglie espositrici dal XVII al XIX secolo* (Bologna, 1989), 13–47, and I. dos Guimarães Sá, 'The circulation of children in eighteenth-century southern Europe: the case of the foundling hospital of Porto' (unpublished Ph.D. dissertation, European University Institute (Florence), 1992), 1–69.

8 See dos Guimarães Sá, 'The circulation of children', 40.

9 M.-F. Morel, 'The care of children: the influence of medical innovation and medical institutions on infant mortality 1750–1914', in R. Schofield, D. Reher and A. Bideau eds., *The decline of mortality in Europe* (Oxford, 1991), 199. Similar views have been recently expressed by Hunecke (*I trovatelli di Milano*, 15–22), Guimarães Sá, 'The circulation of children', 58–60, and very incisively by J.-P. Bardet, C. Dufour and J. Renard ('La mort des enfants trouvés, un drame en deux actes', IUSSP Conference on 'Child and infant mortality in the past' (Montreal, 1992)).

10 See Morel, 'The care of children', 199–204.

11 M.-F. Morel, 'A quoi servent les enfants trouvés? Les médecins et le problème de l'abandon dans la France du XVIIIe siècle', in Bardet *et al.*, *Enfance abandonnée*, 837–58. On smallpox inoculation, see O. Andreucci, *Del vaiuolo e della sua profilassi. Cenni storici* (Florence, 1863), 232–3.

12 On the history of Russian foundling homes, see D. L. Ransel, *Mothers of misery. Child abandonment in Russia* (Princeton, 1988), and W. Berelowitch, 'Les hospices des enfants trouvés en Russie (1763–1914)', in Bardet *et al.*, *Enfance abandonnée*, 167–217.

13 Ransel, *Mothers of misery*, 31.

14 On the London Foundling Hospital and the system of the 'General Reception', see R. K. McClure, *Coram's children: the London Foundling Hospital in the eighteenth century* (New Haven, 1981), 76–136, and A. Wilson, 'Illegitimacy and its implications in mid-eighteenth-century London: the evidence of the Foundling Hospital', *Continuity and Change* **4** (1989), 103–64.

15 Some students of infant abandonment would argue that changing economic circumstances, such as general impoverishment or a greater involvement of women in the labour market, led married couples to resort increasingly to the wheel as a way of leaving their children at the foundling homes. Other scholars, however, believe that the rise in infant abandonment in southern Europe was primarily accounted for by a parallel increase in illegitimacy. Recent overviews of the debate are provided by dos Guimarães Sá, 'The circulation of children', 15–18, and D. I. Kertzer, *Sacrificed for honor. Italian infant abandonment and the politics of reproductive control* (Boston, 1993), who strongly supports the illegitimacy hypothesis.

16 The first foundling was admitted to Florence's *Spedale degli Innocenti* in 1445; the *Ospedale Maggiore* in Milan was founded in 1456; and the *Grand Hôtel-Dieu* in Lyons

was taking in children as early as the beginning of the sixteenth century. The foundling homes of Moscow, St Petersburg and Vienna were opened in 1763, 1770 and 1784 respectively.

17 Dos Guimarães Sá, 'The circulation of children', 54–5.

18 Ransel, *Mothers of misery*, 3.

19 See L. Pellegrini, 'L'esposizione dei fanciulli a Milano dal 1860 al 1901', in M. Gorni and L. Pellegrini, *Un problema di storia sociale. L'infanzia abbandonata in Italia nel secolo XIX* (Florence, 1974), 152, and G. Bruscoli, *Lo Spedale di S. Maria degli Innocenti di Firenze dalla sua fondazione ai giorni nostri* (Florence, 1900), 294–5.

20 E. Raseri, 'I fanciulli illegittimi e gli esposti in Italia', *Annali di Statistica*, 2nd series, **19** (1881), 1–26. See also G. Di Bello, *Senza nome né famiglia* (Florence, 1989), 6.

21 The exact figures in 1890 were 16,587 for Moscow and 9,593 for St Petersburg. In 1892, admissions had dropped by about 30 per cent to 10,915 and 6,874 respectively. See Ransel, *Mothers of misery*, 307.

22 Ransel, *Mothers of misery*, 111.

23 For a recent and lively discussion of this debate in Italy, see Kertzer, *Sacrificed for honor*, ch. 7.

24 Archivio Ospedale degli Innocenti di Firenze [henceforth AOIF], Affari Generali, CCCLXI, 76, *Relazione a corredo del Rendimento di conti del Region Spedale degli Innocenti di Firenze per l'anno 1882*. For a more detailed analysis of this document, see M. Bortolotto and A. Zanotto, 'Livelli e tendenze della mortalità infantile allo Spedale degli Innocenti di Firenze nella seconda metà dell'Ottocento' (Innocenti Institute Research Paper AS/3; Florence, 1993).

25 AOIF, Affari Generali, CCCLXI, 76, *Relazione a corredo*, 3.

26 *Ibid.*, 9.

27 *Ibid.*, 11.

28 The phrase 'methodological anarchy' was used as late as 1923 by the chief medical officer of the Innocenti to denounce the persistence in twentieth-century foundling homes of a bewildering variety of methods to reckon infant mortality. See G. A. Dotti, *Regio Spedale degli Innocenti 'Brefotrofio' di Firenze. Relazione sanitaria del biennio 1921–1922* (Florence, 1923), 42–3. A certain proneness by administrators of foundling hospitals to provide 'cosmetic figures', arrived at by deceptive methods of reckoning mortality, has been hinted at by Ransel (*Mothers of poverty*, 47).

29 It should be noticed that the 1883 report provides only proportional figures. However, we have been able to recover the corresponding absolute figures from the archival series cited below in endnote 39. An examination of these data reveals some ambiguity in the definition of 'sucklings'. Although this term formally designated until 1874 all children under two years of age, it would seem that the administrators, when calculating suckling mortality, took into account only the deaths of infants under twelve months of age.

30 See the pioneering study by R. Trexler, 'The foundlings of Florence, 1395–1455', *History of Childhood Quarterly* **1** (1973), 259–84, and more recently C. Klapisch-Zuber, *Women, family, and ritual in Renaissance Italy* (Chicago, 1985), 132–64, J. Boswell, *The kindness of strangers. The abandonment of children in Western Europe from Late Antiquity to the Renaissance* (New York, 1988), 417–27, and especially P. Gavitt, *Charity and children in Renaissance Florence. The Ospedale degli Innocenti, 1410–1536* (Ann Arbor, Mich., 1990). Gavitt's book and the case of the Innocenti are discussed in a broad comparative perspective in V. Hunecke, 'Findelkinder und Findelhäuser in der Renaissance', *Quellen und Forschungen aus Italienischen Archiven und Bibliotheken* **72** (1992), 123–53.

31 See Bortolotto, 'Lo Spedale di Santa Maria degli Innocenti: una rassegna storico-bibliografica' (Innocenti Institute Research Paper AS/1; Florence, 1991), 45–6.

32 The two classic works are F. Bruni, *Storia dell'Imperiale e Regio Spedale di S. Maria degli Innocenti di Firenze* (Florence, 1819), and Bruscoli, *Lo Spedale di S. Maria degli Innocenti.* Another useful book published before the Second World War is U. Cherici, *L'Assistenza all'Infanzia ed il R. Spedale degli Innocenti di Firenze* (Florence, 1932). Recent studies include Di Bello, *Senza nome né famiglia*, and above all a series of pioneering papers by C. Corsini: see in particular his influential article 'Materiali per lo studio della famiglia in Toscana nei secoli XVII–XIX: gli esposti', *Quaderni Storici* **11** (1976), 998–1052, and 'Structural changes in infant mortality in Tuscany from the 18th to the 19th century', in T. Bengtsson *et al.* eds., *Pre-industrial population change* (Stockholm, 1984).

33 See A. Zuccagni-Orlandini, *Ricerche statistiche del Granducato di Toscana*, vol. 1 (Florence, 1848), 472–97, and L. Castelli, *Città di Firenze. La popolazione e la mortalità del centennio 1791–1890* (Florence, 1893), x–xi.

34 Kertzer (*Sacrificed for honor*, ch. 4) has recently argued that in the nineteenth century there was a marked contrast between the largely rural origin of infants abandoned in Florence and the predominantly urban origin of Milan foundlings revealed by V. Hunecke in 'Problemi della demografia milanese dopo l'Unità: la chiusura della ruota ed il "crollo" delle nascite', *Storia Urbana* **5** (1978), 81–90. Although this kind of information is always difficult to interpret, there are reasons to believe that the contrast was not as marked as suggested by Kertzer. A detailed analysis of the provenance of the 1,632 foundlings admitted to the Innocenti in the year 1875 for whom the place of origin is known (out of a total of 1,845) has shown that just over 70 per cent came from the city. See Bortolotto and Zanotto, 'Livelli e tendenze', 21–3.

35 These estimates are provided by Corsini ('Materiali', 1006), who stresses a number of basic similarities between abandonment patterns in Florence and Milan.

36 See Gavitt, *Charity and children*, 162–70.

37 The number of Innocenti wet nurses in the early nineteenth century has been roughly estimated from the figures provided in Bruni, *Storia dell'Imperiale e Regio Spedale*, vol. 2, Tables IV and V.

38 See Bruscoli, *Lo Spedale di S. Maria degli Innocenti*, 292–7.

39 AOIF, XLIV, 11–65: *Dimostrazioni mensuali, quadrimestrali e annuali del movimento di famiglia* (1838–1874); *Dimostrazione giornaliera del movimento di famiglia* (1875–1892). The second series has gaps in 1876 and 1878. Fortunately, it has been possible to recover sufficient, if not complete, information for these two years from the *Relazione a corredo* of 1883 and from another document of 1878 (*Richiesta a questo Spedale di Notizie...fatta dal Direttore dell'Uffizio Comunale di Statistica di Budapest*, AOIF, Affari Generali, CCCXL, 20).

40 It would of course be foolish to deny the existence of any link between increased mortality and epidemic diseases. In a note appended to the *Dimostrazione* of 1849 we read, for instance, that 'The greater mortality in the class of sucklings, and also amongst weaned children, was caused by the influence of the disease known as flux, or dysentery.' Nevertheless, it is remarkable that the only two major outbreaks recorded in the period between 1838 and 1892 – the epidemic of cholera that ravaged Florence in 1855 and the great epidemic of diphtheria of 1871–1872 – hardly affected the mortality of the younger foundlings. See Bortolotto and Zanotto, 'Livelli e tendenze', 47–8.

It is worth adding, in a different vein, that a comparison between the two curves in Figure 2 and the data assembled by P. Bandettini (*I prezzi sul mercato di Firenze dal 1800 al 1890* (Rome, 1957)) reveals that only between 1853 and 1858, when grain prices

rose suddenly, to decline a few years later, did admissions to the Innocenti experience a similar pattern of rise and fall. No relation has been found between variations in grain prices and trends in infant mortality among Innocenti foundlings.

41 AOIF, Affari Generali, CCLXXVII, 102, *Schiarimenti richiesti al Dottor Luigi Calosi Ispettore Sanitario del nostro Spedale sulla Mortalità delle Creature ... specialmente negli ultimi 3 anni.*

42 AOIF, Affari Generali, CCLXXVII, 102, *Ispezione sanitaria del Regio Spedale degli Innocenti di Firenze li 16 Ottobre 1861.*

43 AOIF, Affari Generali, CCLXXXIII, 89, *Lettera al Cav. Senatore Prefetto della provincia di Firenze del 28 Luglio 1863.*

44 *Ibid.*

45 AOIF, Affari Generali, CCLXXXIII, 89, *Aumento del salario per le balie esterne dei nostri gettatelli da It. L. 7.56 a L. 10.00 al mese per ottenere una maggiore concorrenza delle medesime.*

46 AOIF, Affari Generali, CCCLXI, 76, *Relazione a corredo*, 96.

47 *Ibid.*

48 AOIF, Affari Generali, CCLXXXIII, 89, *Lettera al Cav. Senatore Prefetto della provincia di Firenze.*

49 See, for example, V. Bosi, *Regio Spedale degl'Innocenti di Firenze. Resoconto sanitario-statistico dell'anno 1893* (Florence, 1895), 19; and AOIF, Affari Generali, CCCCIX, 19, *Indagini circa la mortalità infantile verificatasi nel Brefotrofio nèll'anno 1916.*

50 See Bortolotto and Zanotto, 'Livelli e tendenze', Table XI.

51 See Corsini, 'Structural changes', 142.

52 See Guido Guidi, *Dell'assistenza all'infanzia illegittima* (Florence, 1923), 20–1.

53 This remark was made in 1917 by U. Cherici, *Relazione circa una più razionale assistenza degli Esposti*, 2, in AOIF, Affari Generali, CCCCIX, 50. The most detailed account of the measures taken by Florence's foundling home to prevent the spread of syphilis is provided by V. Bosi, 'Relazione del medico-capo', in *Regio Spedale degli Innocenti di Firenze. Resoconto amministrativo, statistico e sanitario dell'anno 1894* (Florence, 1896), 52–72.

54 The best series of mortality rates for the period 1905–1915 is to be found in AOIF, Affari Generali, CCCCIX, 19. Unfortunately, infant mortality is calculated by relating a denominator represented by the total number of foundlings admitted in a given calendar year to the number of infants belonging to that cohort who died in the same calendar year. This produces an underestimation of real infant mortality of about 25 per cent.

55 AOIF, Affari Generali, CCCXCIII, 29, *Aumento da L. 25 a L. 30 mensili del salario per le nutrici interne ad incominciare dal 1. luglio 1909 e da L. 12 a L. 15 mensili il salario per le nutrici esterne ad incominciare dal 1. gennaio 1910.*

56 Germano Guidi, *Di alcune sindromi speciali, assai gravi, nell'attuale epidemia influenzale, nei bambini*, in AOIF, Affari Generali, CCCCXI, 30. Data on the very high levels of infant mortality in other Italian foundling homes during the war period are provided by Guido Guidi, *Dell'assistenza all'infanzia illegittima*, 4–5.

57 R. Spedale degli Innocenti, *Relazione del Presidente del Consiglio d'Ammnistrazione sul funzionaments del Brefotrofio nell'anno 1918* (Florence, 1919), Table 1.

58 See especially Cherici, *Relazione circa una più razionale assistenza degli Esposti.* See also Guidi, *Dell'assistenza all'infanzia illegittima*, 23, and Cherici's later account in his 1932 book *L'assistenza all'infanzia*, 262. An indirect confirmation of the crucial role played by the dearth of wet nurses is provided by the very steep rise of mortality in the first month of life (neonatal mortality), from values ranging between 80 and 100 per

thousand in 1913–1915 to 195.6 per thousand in 1916, 232.6 per thousand in 1917 and 286.6 per thousand in 1918.

59 See Guidi, *Dell'assistenza all'infanzia illegittima*, 7–10.

60 Although the number of women assisted by this institution was small, the infant mortality record was very good, with only 8 infant deaths out of 154 live births (just over 5 per cent). See *Relazione finale dell'Asilo Materno* (Florence, 1919), 15–16, and also G. Brunetti, *L'obbligo dell'allattamento materno e l'Asilo di maternità* (Florence, 1919).

61 Cherici, *Relazione*, 3.

62 See Dotti, *Relazione sanitaria*, 5–6.

63 See Guido Guidi, *Regio Spedale degli Innocenti. Rendiconto statistico clinico per il quinquennio 1923–1927* (Florence, 1929), 24, and Dotti, *Relazione sanitaria*, Graph 2.

64 See Guidi, *Rendiconto statistico clinico 1923–1927*, 6–9, 24–5. A recent overview of the evolution of infant mortality in the early twentieth century is provided by L. Del Panta, 'Infant and child mortality in Italy from the 18th to the 20th century', IUSSP Conference on 'Child and infant mortality in the past' (Montreal, 1992).

65 See Del Panta, 'Infant and child mortality', 18–20.

66 An incisive account of the ideological and legal changes promoted by the social welfare movement in Italy, with special reference to the condition of foundlings, is provided in Kertzer, *Sacrificed for honor*, ch. 7.