On the Brink of Being: Re-evaluating Infanticide and Infant Burial in Roman Britain

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I lose life after life. The dark earth drinks them. (Sylvia Plath, *Three Women*[1])

'If an infant in the cradle dies, [the survivors] ought not even utter a complaint.' (Cicero, *Tusculan Disputations* 1.39)

Introduction

The burial treatment of infants in Roman Britain has received considerable attention from archaeologists over the last two decades[2]. Large numbers of perinatal and infant remains have been recovered from Romano-British settlements and villas, in addition to communal cemetery sites. Burials of the former type have often been interpreted in terms of disposal rather than as a form of funerary ritual, with an implied emotional indifference to infants in the Roman world in response to their high mortality[3]. A high rate of infant mortality was a shared feature of pre-modern societies[4], and in the Roman period, infant mortality for the first month, including foetal deaths and stillbirths, is thought to have been approximately eight percent, with close to thirty percent of babies dying in their first year[5]. Such figures will of course have varied across the Empire depending on the context, both social and environmental (e.g. rural or urban), into which the infant was born. Nonetheless, textual sources consistently indicate that many newborns died within the first few days[6]. Funerary monuments and epitaphs show that infants under one year of age are poorly represented, although the bias of these sources is well-recognised (see Laes, this volume)[7]. One can point to numerous literary texts that suggest a lack of emotional attachment to infants at this time, not least, the oft-cited extract from Cicero above. However, as ethnographic studies show, the relationship between infant mortality and parental attachment is not a straightforward equation. Historians have since

[1] Plath 1981.

[2] For example, Scott 1999; ead. 2001; Gowland 2001; Pearce 2001; Gowland and Chamberlain, 2002; Moore 2009.

[3] For a discussion see Carroll 2011.

[4] Garnsey 1991.

[5] Hopkins 1983, 225; Rawson, 2003, 104.

[6] See Dasen 2011.

[7] Carroll 2006, 176-79.

robustly critiqued this form of 'demographic determinism'[8]. There are also numerous historical sources that bear witness to the outpourings of grief for dead infants and children from across the Roman Empire[9]. However, as Garnsey[10] discusses, with regard to understanding Roman perceptions of infancy, 'One cannot achieve any major breakthrough by the summoning up from antiquity touching epitaphs and stray anecdotes to show that sometimes dead babies were mourned and surviving infants valued (amongst the elite and upwardly mobile)'. Furthermore, the relevance of the sentiments expressed in these historical sources may be of questionable application to Roman Britain. Given the limitations of the historical data in terms of assessing past perceptions of infancy at the periphery of the empire, it is worth considering the contribution of the archaeological evidence to these debates and, in particular, the large quantities of infant remains excavated from settlement sites. In a series of influential papers, Simon Mays and colleagues have argued that rather than representing parental passivity in the face of high mortality these were the victims of the more active and brutal practice of infanticide[11]. Moreover, Mays argues that the practice was so endemic that it produced detectable alterations in the natural age-at-death profile of infants born at around the time of full term at a large number of sites. It is this much-cited and readily accepted interpretation of infanticide[12] in relation to these infant burials from Romano-British sites that we scrutinise further below.

Historians have studied and debated the evidence for infanticide in the Roman World at length[13] and numerous historical sources testify that the abandonment of newborn infants took place without moral or legal sanction[14]. However, as argued by Boswell[15] and will be discussed in more detail below, infanticide and abandonment are conceptually very different actions. We will assess the archaeological ramifications of these debates and the compatibility of the practice of exposure and abandonment of infants with the evidence for infant burial in Roman Britain. In addition we assess the methodological and osteological arguments of those studies that have sought to identify

[8] Golden 1988.

[9] For example, 'To Aemilia Cornelia … Scribonia Maxima set this up to a very distinguished girl, who lived 45 days' (*CIL* VI.1334); and these are not restricted to birth parents, see Carroll 2006 for further examples and discussion.

[10] Garnsey 1991, 48-51.

[11]Mays 1993; id 1995; id 2000; id 2003; Mays and Eyers, 2011; Mays and Faerman 2001.

[12] For example, Taylor 2008, 92, who accepts, uncritically, that these infant burials represent 'normal infanticide'.

[13] For just a few of these discussions see for example, Garnsey 1991; Harris 1994; Boswell 1984; Boswell 1998.

[14] Until the 4th c. when it was officially banned.

[15] Boswell 1984, 1998.

infanticide on the basis of perinatal age distributions. The burial treatment of infants provides an important window into the way in which Romano-Britons conceptualised and negotiated the beginnings of life and personhood. As Kaufman and Morgan[16] discuss:

'Anthropologists have often used the margins of life as a site for examining the making and unmaking of persons and relationships, social and corporeal bodies, and life itself…..'

It is important to consider the infant burials from Roman Britain in such terms, and it is unfortunate that their potential significance in this regard has been overlooked in the face of more sensationalist and widely-publicised assertions of infanticide.

Childhood in the Roman World

Discussions of infant death in the Roman world can be situated more generally within broader debates concerning the social construction of childhood. It is *de rigeur* for students of childhood to cite Philippe Ariès'[17] influential book *Centuries of Childhood*, which sparked a plethora of interest into the variable cultural interpretations of childhood and the life course. Childhood has since received a considerable amount of scholarly attention within the archaeological, anthropological and historical literature. Particularly influential studies of childhood in the Roman world include Rawson (2003, 2011), Dixon (1992), Golden (1988), Laurence and Harlow (2002), and Dasen (2004), Dasen and Späth (2010)[18], amongst others. These authors have, for the most part, focussed on historical sources and iconography rather than the archaeological evidence, and thus there is a distinct bias towards ancient Italy, Rome in particular, due to the availability of written sources. Following the same theme as Ariès and DeMause[19], initial studies of Roman childhood alluded to parental indifference and even cruelty, highlighting the practice of Roman abandonment and texts such as Plutarch's letter to his wife on the death of their child, reproaching any overt displays of grief[20]. These arguments have since been re-evaluated and de-constructed by a number of authors who have demonstrated the complex and, at face value, often contradictory treatment and perceptions of childhood within Rome[21]. It has been established that there was undoubtedly recognition of childhood as

[16] Kaufman and Morgan 2005.
[17] Ariès 1962.
[18] Dixon 1992; Harlow and Laurence 2002; Rawson 2003; Dasen 2004; Dasen and Späth 2010.
[19] Ariès 1962; DeMause 1974.
[20] Hope 2007.
[21] Scott 1999; Carroll 2006; Hope 2009, 138-9; Golden 2011.

a distinct stage in the Roman life course and a construction and appreciation of particularly child-like qualities, including their vulnerability and charm[22]. As Garnsey states, the historical sources demonstrate 'no general absence of tender feelings for children as special beings'[23]. Historical evidence indicates that the process of growing up was demarcated into a series of stages, each marked by ritual acts[24]. It is the archaeological evidence for the earliest stages of the life course that is the focus here. But before turning to that, it is worth first examining what is known historically about infancy in the Roman world.

Historical Evidence for Perceptions of Infancy

Textual sources relating to infants are relatively sparse and virtually non-existent for the lower classes or those born into slavery[25]. Most evidence of this sort provides glimpses of an elite male perspective, often contradictory, and unlikely to be representative of the population as a whole, particularly those on the margins of the Empire[26]. Latin has no word for baby[27] and the term '*infans*', which literally means 'not speaking', appears to encompass those from birth to seven years[28]. This is not to say that these children were considered a homogenous group; evidence indicates that a number of additional rites of passage occurred throughout this period. The medical writings of Soranus[29] provide important information concerning perceptions of infancy as well as infant care and treatment from the moment of birth. According to Soranus, upon birth the infant should immediately be laid on the ground and inspected by a midwife to assess physical well-being. The *Paterfamilias* was permitted to expose any infant born into his family[30], though it is likely that in his absence decisions were made by midwives and mothers. If the decision was made to raise the infant, then bathing was the next stage; this act served as a signifier of acceptance by the parents and family[31]. A speedy decision was expected with regard to whether the infant was to be

[22] Harlow and Laurence 2002.
[23] Garnsey 1991, 50-51.
[24] Harlow and Laurence 2002; Dasen 2011, 291-92.
[25] Harlow and Laurence 2002.
[26] For example, the quote from Cicero above stands in contrast to another of his quotes which states that 'Those who have never raised children are blessed,' (*Letters to his Friends* 5.16.2-3 [187]), and his own grief at the loss of his daughter Tullia, who died a few weeks after the birth of her son. Hope 2007, 196.
[27]Manson 1983.
[28] Dixon 1992.
[29] Soranus *Gyn*.
[30] Harris 1994.
[31] Dasen 2011. Soranus *Gyn.* 9.78 discusses 'how one should…swaddle and cleanse the infant *which is to be reared*' implying that the decision to abandon an infant should occur even before these early acts of care'.

kept (prior to the act of bathing) and historical evidence indicates that those who belatedly decided to expose were regarded with disapproval.[32]

Soranus recommended the withholding of colostrum to the newborn baby and instead a diet of honey 'moderately boiled' in water was prescribed until the mother's milk 'comes in', usually by the third day after birth[33]. This advice has several consequences. Firstly, colostrum is important for conferring passive immunity to infants[34], which would have been especially beneficial in the ancient world in which lower levels of hygiene and a greater risk of infection is likely to have existed. Secondly, it inhibits the opportunity for skin-to-skin contact between mother and infant as well as the exchange of bodily substances and acts of nurturing[35]. Such initial and immediate contact has been demonstrated to be of considerable significance for the process of bonding[36]. In those instances where such tender acts were restricted, this would no doubt facilitate the decision to expose if viewed as necessary.

If kept, the baby was not named until the eighth day for girls and ninth for boys - a rite of passage marked with a ceremony (*dies lustricus*). It is thought that this delay in conferring a name was a consequence of the number of natural infant deaths that occurred within the first few days[37]. Acts such as bathing and naming should be considered as social birth rituals, small steps leading to the eventual conferment of personhood. Numerous ethnographic studies have demonstrated a delay in the 'the process of anthropomorphisation… until the Mother is more certain that the infant will survive'[38]. This *post partum* delay in bestowing full human identity upon the infant is generally regarded as a cultural response to high infant mortality and/or infanticide[39]. For example, the Aboriginal people of Arnhem Land call newborns 'foetus' until they begin to smile, around 3-6 weeks of age, and then until 9-12 years of age, they are called 'child'[40]. It does not follow, however, that there is a lack of care or indeed emotional investment during this time of high risk[41].

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[32] Rawson 1991, 13; Dasen 2011.

[33] Soranus *Gyn*. 17. 86. Colostrum was thought to be too thick and liable to 'clog up in newborn children'

[34] Brown *et al*. 2011, 164-65.

[35] Klaus 1998; also very important for the newborn's gut to be colonised rapidly by lactobacilli, which are acquired during initial nursing from oral contact with the mother's skin (Brown *et al*. 2011).

[36] Klaus 1998.

[37] Harlow and Laurence 2002.

[38] Scheper Hughes 1991.

[39] Wilson and Daly 1994.

[40] Hamilton 1981, 17.

[41] See Carroll 2006 for evidence of emotional attachment towards infants in Rome.

The physiology of an infant's body in ancient Rome was conceptualised as distinct from older children and adults; it was considered to be 'wet', highly malleable and likened to wax[42]. This physiological construct led to clear anxiety about appropriate care, and Soranus exhibits particular concern to avoid bent limbs in his espousal of the practice of swaddling and detailed advice concerning the massaging of limbs until two to three months of age.[43] Newborns in many cultures have been deemed unripe and unformed, and these bodily constructs are also commonly associated with a delay in the bestowing of personhood[44]. The removal of swaddling clothes was a rite of passage in itself and took place between 40 to 60 days after birth (see Graham, this volume). According to Pliny *(Natural History* VII, 15) and Juvenal (*Satires* XV, 139) a child was not considered to be a separate individual until the second half of the first year, once teething and possibly walking and talking had commenced[45]. Pliny explained that children who had not yet teethed were not cremated[46] (the predominant funerary rite at that time) and that intra-mural burial, particularly under the eaves of buildings, while forbidden by law for older individuals, was customary for young infants. If a woman died while pregnant, she was not buried until the foetus had been removed from her body[47]. The embryotomy surgery recommended for this procedure (and to save the life of a mother during labour/delivery) has been identified at two locations in Roman Britain[48]. The first discovery was made at the Poundbury Camp cemetery (Dorset), where the nearly complete but disarticulated skeleton of a full-term (38-40 weeks old) infant was buried in a wooden coffin following standard, normative, funerary customs of the region[49]. The numerous cut-marks present throughout the skeleton conformed to the surgical instructions given in Soranus to dismember the baby and draw the body parts using a series of medical instruments through the birth canal[50] (Fig. 1). The second example recently has been suggested for a nearly complete skeleton of a pre-term (35-37 weeks gestation) infant from Yewden

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[42] Dasen 2011.

[43] Dasen 2011. Ironically this tight swaddling of infants, as well as the practice of keeping infants indoors would have likely resulted in vitamin D deficiency. Vitamin D is necessary for adequate mineralisation of the bones and if insufficient may result in the bowing of limbs, see Brickley and Ives 2008.

[44] Kaufmen and Morgan 2005.

[45] Watts 1989; Philpott 1991.

[46] This was in part related to the belief that infants were considered too 'wet' to necessitate burning, see Pearce 2001, 136-67.

[47] Rawson 2003, 99.

[48] Molleson 1993, 201.

[49] Redfern 2007; ead. 2010.

[50] Ibid.

villa (Buckinghamshire)[51]. Unlike the case from Dorset, this individual only had evidence for five cut-marks to a single femur, and was one of many infant burials in the courtyard of the villa. Furthermore, the burial of infants with adult females is frequently attested in Britain; with the infant either being placed in the same coffin, within the same grave cut, stack, or side-by-side[52]. For example, at Great Dover Street cemetery in London, a mid-2nd c. extended burial of an 18 to 25 year old female had a pre-term (28 week gestation) infant placed at her right foot[53] (Fig. 2)

Infant Abandonment

Exposure (*expositio*) was the only legal method of limiting family size in Rome. There has been much debate among historians concerning various aspects of this practice. The five key questions to emerge are as follows:

a) What was the proportion of live born infants that were abandoned?
b) What were the reasons for abandonment?
c) Was there an expectation that the infant would die, or be raised by others?
d) Were females more likely to be abandoned than males?
e) What, if anything, can be inferred about parental attitudes towards infancy from this practice?

It is not possible to ascertain the answers to all of these questions based on the available evidence, particularly in terms of the proportion of live born infants abandoned. However, a range of historical sources hint at it being a relatively common practice. The decision to raise an infant was certainly not a default position[54] and the subject of infant abandonment was often employed as a dramatic literary device[55]. The motivations for abandonment are more explicit within the primary literature, and have been referred to in a number of different sources, including dramas, medical treatises and letters. Economic motives were particularly significant; illegitimate children or those of the poor or slaves were more likely to be exposed[56]. Soranus indicates that infants deemed by midwives to be unhealthy and/or physically deformed were also likely to be abandoned (see Southwell-Wright, this volume). Peter Garnsey[57] suggests that in a society with high levels of infant mortality, the decision to expose those who seemed unlikely to survive was a logical step, and one which would serve to minimise (though by no means eliminate) grief

[51] Mays *et* al. 2012.
[52] Barber and Bowsher 2000, 100-01.
[53] Mackinder 2000. On death in childbirth see Carroll, this volume.
[54] Lindsay 2009, 62-78.
[55] Ibid, 138-43.
[56] Lee 1994, 65-79.
[57] Garnsey 1991.

stemming from death once an attachment had been formed. Healthy, legitimate children born into wealthy families also risked a similar fate in order to avoid a reduction in family status through the successive breakup of family property in a partible system of inheritance[58]. It is worth noting that not all parts of the Empire are likely to have practiced exposure, depending on the influence of local custom.

The fate of the exposed infant, whether it lived or died, and parental expectations of the most likely outcome have also been debated. Exposure and infanticide are terms that are used inter-changeably. As discussed above, a number of authors, including Boswell[59], argue strongly against this conflation, pointing to the 'overwhelming belief' in the ancient world that rather than meet their deaths, abandoned children were reared by others. Boswell argues that the translation of the Latin '*expositio*' to 'exposure' is misleading because the latter conveys a sense of risk and harm from a hostile environment, which is not present in the ancient term[60] which literally means 'to place beyond/outside':

'Much previous writing has conflated exposure with infanticide, hindering accurate assessment of either, obviously the two may be related, either theoretically or empirically, but to treat one as a priori subset of the other is both a conceptual and historical error.'[61]

It has been argued that survival and enslavement was much the commonest fate for an exposed infant[62]. There were well-known locations for leaving abandoned babies, which would undoubtedly facilitate the chances of becoming a foundling[63]. For example, from Alexandria in Roman Egypt (13 B.C.), surviving legal contracts between slave owners and wet nurses show that foundling infants of both sexes were raised[64]. Indeed according to Grubbs, *expositio* was a neighbourhood phenomenon; with abandoned children often returned to their biological family, which may have known of their location all along.[65] There was also a great deal of concern articulated concerning the fate of freeborn *expositi* brought up as slaves[66]

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[58] Dixon 1992; Harris 1994.

[59] Boswell 1998.

[60] see also, Grubbs 2010, 293-310, and for a discussion, see Harris 1994.

[61] Boswell 1998

[62] Harris 1994; Grubbs 2010, 305, argues that Boswell's suggestion that most *expositi* survived is unlikely due to the generally high infant mortality at the time.

[63] Rawson 2003.

[64] BGU 4.1106, 1107. G; http://www.stoa.org/diotima/anthology/wlgr/wlgr-medicine381.shtml, viewed on the 20/10/2012.

[65] Grubbs 2010, 294, 307-310.

[66] Ibid, 299-302.

There is no firm evidence to indicate that females were preferentially exposed. In relation to infanticide, a female bias is far more commonly observed in the ethnographic literature; this is often, somewhat perfunctorily, explained in terms of population control, though this argument fails to provide an appropriate evolutionary explanation for the practice[67]. Cases of preferential male infanticide are known, for example, among the Mukogodo of East Africa, a matrilocal society[68]. The historical evidence for a sex bias in exposure is not clear on this subject; Riddle[69] provides a summary of the available sources and concludes that this form of discrimination is not apparent. With regard to preferential female exposure, the famous Egyptian papyrus in which a man visiting Alexandria writes to his pregnant wife back home, is often used as unequivocal proof, though application beyond this particular socio-historical context is questionable:

'I beg and beseech of you to take care of the little child…If – good luck to you!- you bear offspring, if is a male, let it live; if it is a female, expose it'[70].

Scott[71] questions whether the social and economic systems in existence in the Roman world would have contrived to devalue females, or whether the presumption of female infanticide is simply a modern construct:

'The decision to kill a baby on the grounds of its sex is intimately bound up with culture-specific constructions of gender, kinship, and economic structures, such as dowries and patterns of inheritance'.

Scheidel[72] argues that while females may be less visible in historical records. such as censuses and in epigraphic data, it does not necessarily follow that they were not present.

Finally, what the practice of exposure reveals about perceptions of infancy in the Roman world is more complex to decipher than one might initially think. Whilst the most logical assumption is one of parental indifference, it is important to consider the treatment of those infants who were raised. Overall, historical evidence in the forms of letters and laws appear to indicate that the

[67]Binford 1986; Ucko 1969; Smith and Smith 1994.

[68] Male neglect in favour of female children is discussed by Cronk 1989.

[69] Riddle 1992; for a demographic argument against female infanticide see Engels 1980.

[70] http://www.stoa.org/diotima/anthology/wlgr/wlgr-privatelife249.shtml viewed on the 21/10/2012

[71] Scott 2001, 144.

[72]Scheidel 2010.

mourning of infants in the Roman world was socially constrained[73]; however, a dichotomy exists between prevailing ideology and human behaviour. For example, further historical evidence indicates that whilst individuals may be socially reproached for mourning an infant, this constraint served to lessen the *public display* of grief rather than the process itself[74]. Likewise, the death of a newborn in modern western society is generally considered a more private affair restricted to the immediate family, rather than an event encompassing a wider social network. To attempt a more penetrating examination of the perception of the beginnings of life in Roman Britain it is necessary to examine the archaeological evidence in more detail.

The Archaeological Evidence from Roman Britain

Infants are often underrepresented within archaeological contexts and the assumption has been that taphonomic factors are the primary cause of this[75]. The bones of children are considered to be more susceptible to post-depositional decay in the burial environment as a result of poor mineralisation. In fact, the bone tissue of infants and adults is equally mineralised, but infant bones have higher porosity and vascularity than adults, thus if bone mineral density is measured per unit volume they appear less densely mineralised. [76] Perinatal and infant remains are relatively well-represented at Romano-British sites. Investigations by Guy and colleagues[77] found that foetal bones are more likely to survive than those of infants. This may be because foetuses lack gut flora that may contribute to post-mortem degradation. However, chemical integrity of the bone is not the only taphonomic factor which should be considered and it is clear that perinatal remains are much more likely to be subject to physical disturbance than adult remains, in part because they tend to be buried only very shallowly[78] (Fig. 3). Recovery bias is also an issue because the small and incomplete bones may not be recognised as human remains by non-specialists, especially if disturbed or disarticulated.

Infant burials excavated from outside of formal cemetery contexts are frequently interpreted as having been discarded, either surreptitiously or as a matter of convenience. An increasing number of authors have critiqued these

[73] Hope 2007, 138-39.
[74] Ibid.
[75] Stodder 2008
[76] Gordon and Buikstra 1981. Op cit. Bello *et al.* 2006.
[77] Guy, Masset and Baud 1997.
[78] Buckberry 2000.

suggestions and instead have argued that spatial analysis indicates careful choices in terms of the location of the burials[79]. Moore's[80] survey of these infant burials from Roman Britain demonstrates that the vast majority of them were from domestic contexts, beneath the floors of general domestic rooms, or, when buried externally, close to the domestic building. Moore[81] concludes that these burials were:

'not the random disposal of the unwanted or marginalised, but the result of careful choices and decisions relating to concepts associated with the physical and spiritual worlds. The infant was inherently ambiguous but was also, in certain senses, a being of power'.

It is worth highlighting that many infant burials from the fourth century A.D. have been identified in formal urban cemeteries and conform to normative funerary practices[82]. When infants are uncovered in excavations from these locations, practices such as exposure or infanticide are rarely discussed, if at all[83]. Other infant burial locations include, public buildings (e.g. the Baths Basilica in Wroxeter) and religious settings, such as the temple at Maiden Castle hillfort[84], though again, despite the majority of individuals being aged between birth and one month old, abandonment and infanticide are infrequent lines of interpretation.

The Bioarchaeological Evidence

Extrapolating data concerning the ages of infants buried at settlement sites is often problematic due to a lack of standardisation in the terminology used in published reports, a problem that Pearce[85]notes that is also true of reports from Gaul. Whilst recent skeletal reports are more standardised, for earlier publications the term newborn is one which was often applied without an osteological examination ever having been conducted. A well-known example of this is the report from the Yewden Villa site, Hambleden, Buckinghamshire[86]. This report was published in the 1920s and while the five adults from the site were reported in detail, the remains of ninety-seven infant burials warranted no further osteological investigation at this time:

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[79] e.g. Scott, 1999, Gowland, 2001, Pearce 2001, Moore 2009.
[80] Moore 2009.
[81] Ibid.
[82] See Pearce 2001; id. 2008.
[83] Molleson 1993.
[84] Sharples 1991.
[85] Pearce 2001.
[86] Cocks 1921.

'It is not necessary to mention at this point the ... remains of scores of babies- these concern the domestic life of the villa rather than the larger racial problem of Britain.'[87]

In the discipline of bioarchaeology the term newborn, or neonate, is quite specific and refers to the period from birth to 4 weeks old and post-neonatal infancy to the period from 4 weeks to one year old[88]. These distinctions are not just a matter of semantics, but are important when interpreting possible causes of death (e.g. distinguishing between endogenous and exogenous causes)[89]. It is apparent from some Romano-British sites that very premature infants, likely to have been stillborn, were also represented. For example, at Winterton Roman Villa, 6 of the 20 infants were of foetal age, with one being as young as 6 to 7 months gestation[90]. At Rudston villa, although the majority of the burials are recorded as newborn, several were premature and one was recorded as 'very premature'[91]. It is important when formulating interpretations such as infanticide to clearly define the age of the infant remains[92]. The ages of the infants associated with this kind of burial appear to be from about 6 months *in utero* to about 6 months postnatal, though the vast majority fall within the perinatal category.

The first systematic assessment of the age distribution of infant burials from Roman sites in Britain was undertaken by Mays[93]. It is worth looking at this evidence in some detail as this and successive papers from Mays and colleagues have been pivotal in establishing the existence of endemic infanticide in Roman Britain. Mays reported on a sample of 164 infant remains, 78 of which had been excavated from Romano-British villas and settlements, while 86 were from cemetery contexts. Mays found that the age distributions of the infants from these different site-types were comparable and differed markedly from infants buried in the churchyard of the rural Medieval site of Wharram Percy in North Yorkshire. Mays stated that the Wharram Percy mortality profile represented the natural pattern of mortality in a pre-modern population. Compared to Wharram Percy, the Roman samples exhibited a narrow age profile, concentrated on the weeks around full-term and with few infants of postnatal age and thus were the

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[87] Keith 1921.

[88] Saunders 1992; Lewis 2007.

[89] Endogenous causes are those intrinsic to the intrauterine environment and the developing foetus. Exogenous causes are those relating to the environment into which the infant is born, see Lewis and Gowland 2007.

[90] Denston 1976.

[91] Bayley 1980.

[92] Ngoc *et al*. 2006.

[93] Mays 1993.

consequence of infanticide (Fig. 4). Gowland and Chamberlain[94] challenged this assertion, focussing on the skeletal age estimation technique used. Gowland and Chamberlain argued that the Scheuer *et al*.[95] regression-based age estimation method used by Mays was not reliable because it was based on a sample of only 17 known age infants, and this small sample was predominantly composed of those dying at 38 gestational weeks. Thus, according to the theory of 'age mimicry' (i.e. that the age distribution of the target population will be biased by the age distribution of the reference sample) expounded by numerous palaeodemographers[96] this method would have produced an exaggerated peak at around the perinatal period (as identified by Mays). In response, Gowland and Chamberlain developed a new age estimation method based on a Bayesian analysis of a much larger sample of known age individuals, applicable to measurements of each of the major long bones. The results demonstrated a greater spread of gestational ages around the perinatal period than identified by Mays and thus it was argued that this was not incompatible with death through natural causes (Fig. 5). Instead, Gowland and Chamberlain suggested that the practice of burying infants within settlements represents a funerary ritual distinctive to a very specific age group. These burials provide a rare window into the perceptions of infancy in the Roman world and it is therefore unfortunate that the debate has been dominated instead by the more emotive subject of infanticide. Mays[97] asserted (without proof) that the Gowland and Chamberlain known-age data were flawed, but this claim is illogical given that these data completely overlap with Mays' preferred dataset (i.e. Sherwood *et al*. [98]) for estimating age.

Mays and Eyers [99]recently analysed an assemblage of infant remains from Yewden Roman Villa at Hambleden in Buckinghamshire, a complex dating to the 1st to 4th c. A.D. They compared the distribution of infant ages obtained from a Bayesian analysis with that obtained from a traditional regression analysis, noting that the Bayesian method generated a less pronounced peak of deaths at full-term which they claimed was due to 'the introduction of a bias inherent in the Bayesian method'. The peak-flattening effect, that Mays and Eyers[100] incorrectly refer to as a bias, is due to the Bayesian method formally incorporating into its model the actual scatter of data around the

[94] Gowland and Chamberlain 2002.
[95] Scheuer, Musgrave and Evans 1980.
[96] see Hoppa and Vaupel 2000; Roksandic and Armstrong 2011.
[97] Mays 2003.
[98] Sherwood *et al.* 2000.
[99] Mays and Eyers 2011.
[100] Mays and Eyers 2011, 1937.

regression line, an aspect of reality that conventional regression-based methods of age estimation ignore[101].

Yewden Villa (discussed above) is one of the most well-known sites for infant burial due to the quantity of infant burials excavated, which 'littered' the courtyard[102]. It was suggested that these burials occurred surreptitiously and secretly:

'As nothing marked the position of these tiny graves, a second little corpse was sometimes deposited on one already in occupation of a spot, apparently showing that these interments took place secretly, after dark'[103]

Frere[104] similarly interpreted the site as suggesting that these infants represented 'the exposure of the unwanted female offspring of a slave-run establishment' - an interpretation echoed more recently by Eyers'[105] assertion that, as suggested for Ashkelon, the site was a brothel. Unceremonious disposal and a lack of emotional attachment to the infants are clearly implied, and again the underlying assumption was that infanticide, or more accurately, neonaticide, was routinely practiced in the Roman world. The interpretations by Frere and Cocks were critiqued by Scott[106] who instead links these burials to processes of gendered empowerment. Scott argues that the suggestion that these represent the illicit burial of illegitimate infants is clearly espousing concepts that could be termed 'Romano-Victorian' in character[107].

Gowland and Chamberlain do believe that the burial of infants within settlements is one predominantly reserved for those of perinatal age. However, we do not accept that almost all of them are aged 38 gestational weeks; this would be unusual even were infanticide practiced as, in reality, infants are born at a much great range of gestational ages. Gowland and Chamberlain[108] argued that a greater spread of gestational ages either side of this peak is likely to be more representative of actual perinatal mortality at these sites. Older infants are not represented in the settlement assemblages, which could be due to their having reached an age at which normative burial

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[101] Chamberlain 2006.
[102] Cocks 1921.
[103] Cocks 1921, 150.
[104] Frere 1978, 303-4.
[105] N. Eyers, quoted in the BBC news feature "Baby deaths link to Roman 'brothel' in Buckinghamshire, http://www.bbc.co.uk/news/10384460
[106] Scott 1999, 2001.
[107] Scott 1999, 2001.
[108] Gowland and Chamberlain 2002.

within a cemetery or cremation was the preferred practice. The 'removal' of these older (post-neonatal) infants from the settlement assemblages would thus give the appearance of a peaked distribution centred around the time of birth.

Age estimation issues aside, even if we were to accept the very pronounced perinatal peak that Mays and Eyers[109] identify for Yewden Villa, there are more profound issues with the interpretation. Not least, that the conclusion of infanticide is based on a total of only thirty-five infants buried over a possible time-span of 280 years. Mays and Eyers[110] state that 'documentary sources show that infanticide was practiced in the Roman World'. The historical evidence demonstrates unequivocally that *abandonment* of infants was the recognised, legal and socially acceptable method of moderating family size in the Roman Empire, *not* infanticide. As discussed in the introduction, Boswell[111] has argued that exposure should not be equated with infanticide; the direct killing of an infant is ideologically far removed from abandonment, and was anyway illegal during the Roman Empire. Furthermore, as numerous authors have demonstrated, a clear belief is apparent within Roman literature that death was not the only, or indeed most likely, outcome of abandonment[112]. If the abandoned infant subsequently died, it is highly improbable that the family then retrieved the remains of the body for reburial within the settlement (the only way in which abandonment could be reconciled with the archaeological evidence). To do so would serve to revive a family connection, previously severed through the hasty removal of the infant in the first instance. If an infant did die when exposed, then a more likely scenario is for the body to have been rapidly disassembled and dispersed by animals therefore rendering it archaeologically invisible[113]. The practice of exposure, should it result in death, would therefore result in a *reduced* rather than *accentuated* perinatal peak.

Finally, Mays[114] suggests that the greater ratio of male adult skeletons at Romano-British cemeteries such as Cirencester indicates that the emphasis was on female infanticide throughout the Roman period. There is currently little historical evidence that indicates that females were preferentially removed from the family. There is evidence to suggest that females had social value within the Roman World[115], and Hamlin's[116] examination of female

[109] Mays and Eyers 2011.
[110] Mays and Eyers 2011.
[111] Boswell 1998.
[112] E.g. Boswell 1998; Harris 1988, 62-75; Garnsey 1991.
[113] Gunn 2009.
[114] Mays 1995.
[115] Dixon 1992.

status in Dorset, as evidenced through funerary practices, failed to identify a decline after the Roman conquest in the 1st c. A.D. It seems more likely that the elevated numbers of male adults in the larger Romano-British cemeteries, most notably York (M:F = 1.9:1) and Cirencester (M:F =2.5:1)[117], is a consequence of the military nature of the Roman occupation of Britain (i.e. settlement of veterans and army deployment) and, perhaps, a bias towards adult male as oppose to female migrants. The use of regional analyses in Roman bioarchaeology remains limited, but the study by Redfern and DeWitte[118] of late Iron Age and Romano-British populations from Dorset observed that the male: female ratio in the earlier period was more even (M:F =1.2:1) and in the latter, it slightly increased to (M:F)1.5:1, but both are within the normal range for a population not practicing infanticide[119].

The sex of perinatal infant remains cannot be determined with any accuracy using standard osteological techniques. Mays and Faerman[120] and Faerman and colleagues[121] conducted ancient DNA (aDNA) analysis of samples of infants which they believed to have been victims of infanticide from Roman Britain and Ashkelon in Israel in order to determine sex. In Britain, more males than females were retrieved from the sample, a result that was counter to the authors' initial expectations[122]. In the sample from Ashkelon, more males than females were also identified, which led the authors to postulate that female babies had been kept so they could be raised as prostitutes[123]. Such studies are potentially flawed because the sex-specific portion of the amelogenin gene is six base pairs longer in males than females and allelic dropout during repeated polymerase chain reaction cycles can lead to a preferential amplification of either the male or the female sequence.[124] Bioarchaeological evidence for infanticide (sex-specific or otherwise) in Roman Britain does not exist.

An alternative explanation

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[116] Hamlin 2007.

[117] Data from L. McIntyre forthcoming. See also, Davison 2000, 231–37.

[118] Redfern and DeWitte 2011.

[119] Chamberlain 2006.

[120] Mays and Faerman 2001.

[121] Faerman *et al.* 1997.

[122] Mays and Faerman 2001; due to small sample size the apparent excess of males was not statistically significant.

[123] Faerman *et al*. 1997. The site in Ashkelon, Israel, from where these infants were excavated has been interpreted as a brothel, though the contextual evidence has been questioned by several authors, e.g. Rose 1997.

[124] Brown and Brown 2011.

Although children may be regarded as physically active participants of a social group, consciously interacting with other members of society, an infant has often been conceptualised as both a passive and biologically universal entity[125]. But an infant is born into a social world and a set of relationships with other individuals; they become a daughter, sister, granddaughter, niece and so on[126]. The presence of an infant influences the behaviour of those around them even prior to birth[127], and, of direct significance archaeologically, it may affect the material culture of those individuals. For example, it has been argued by Fischler[128] that a Roman female (who may marry from the age of twelve years[129]) could only take on the truly gendered identity of a woman after she had given birth. An ethnographic example is provided by Woodburn[130] , who noted that a Hadza (member of an East African hunter-gatherer group) female whose first child lived for only two days continued to wear the necklace which symbolised motherhood. Identities are forged from the roles that we play in relation to others and parenthood, in particular motherhood, is one of the most all-encompassing. As Gottlieb[131] states: 'infants actively shape the lives of those around them, contributing to the constitution of their social worlds'.

As a number of authors have observed, by examining the treatment of infants in death, we are of course investigating adult behaviour[132]. An examination of the available evidence aims to discern not only attitudes and perceptions of the adults towards the infant, but also how they in turn viewed their role as parent/guardian[133]. The adult-infant relationship may be influenced by social, economic, cultural and religious demands, and the treatment of an infant in death may also represent more fundamental shifts in the organisational fabric of a society[134]. One important and well-trodden caveat of funerary studies is that inferring attitudes and identities directly from the funerary record is problematic, because we are investigating the product of symbolic action[135]. Furthermore, the relationship between prevailing attitudes and human action is often complex. However, meaningful insights may still be gleaned. Interpretations of infant burials from Romano-British settlements merely in

[125] James 1998.
[126] La Fontaine 1986.
[127] Garbarino 2009.
[128] Fischler 1998.
[129] For Roman Britain the age at which females married is typically thought to have been in the late teens or early twenties, Shaw 1987.
[130] Woodburn 1968.
[131] Gottlieb 2000.
[132] Pollock 1983; Garnsey 1991.
[133] Pollock 1983; Levine 1998.
[134] Cecil 1996; Garbarino 2009.
[135] Morris 1992.

terms of disposal also implies a passivity that denies the agency of infants to effect those around them emotionally, physically and economically.

The age-at-death distribution of these infants is particularly interesting in terms of the age-span which includes non-viable foetuses, probable still-births as well as live-born infants dying within the weeks and early months following birth. This practice has been observed at numerous archaeological sites from Britain as well as elsewhere in the Empire (e.g. Gaul and Egypt)[136]. In death, there was often no explicit distinction observed between foetal and live-born babies, a distinction that is so significant in our society. What might this mean in terms of social perceptions? For many cultures, the birth of a healthy child, while a momentous event, is not necessarily considered the start of a personhood and this can be said to be true for ancient Rome (see Graham, this volume)[137]. In most modern Western societies, the day of birth has traditionally been associated with the beginning of personhood and the baby is usually ascribed an individual identity (e.g. given a personal name) at or soon after birth. However, they may still often be referred to as 'the baby' for some time afterwards, suggesting that the social path to personhood may be a more gradual one in Western society than we consciously acknowledge. The advent of ultrasound technology, which allows expectant parents to view three and four dimensional images of their unborn foetuses even at relatively early gestational stages is also useful to consider here in terms of its impact on the conceptualisation of personhood[138]. The sex of the unborn child can be established long before birth and now names are often ascribed pre-birth. Technology is shifting the boundaries for the beginnings of personhood in the modern world, a factor that has had repercussions for pregnancy terminations[139]. The developing foetus is materialised beyond the swelling belly and such scans are regarded as particular 'reality checks' for the expectant father for whom the physical reality of the developing foetus has hitherto been experienced only indirectly. This has resulted in a notable shift in hospital policy in recent years concerning the 'disposal' of miscarried foetuses and stillborn infants. Whilst these remains were previously discarded with clinical waste, now even early foetal deaths may be accompanied by a form of ceremony should the parents wish it. This demonstrates the way in which the boundaries of the beginnings of life and personhood are fluid and dependent upon the social, economic and religious contexts. It is worth also considering the Irish *cilliní* burials, secular burial grounds used for the interment of unbaptized infants and individuals who were regarded by the

[136] Tocheri *et al.* 2005; Carroll 2011.
[137] Harlow and Laurence 2002.
[138] Kurjak and Chervenak 2011, 49-50, 641-42.
[139] Kurjak, Chervenak and Carrera 2001.

Roman Catholic Church as unsuitable for inclusion in lay cemeteries[140]. In theory, baptism resulted in the conferment of personhood, but post-baptism, infants and even young children continued to be buried along with stillborn infants in these locales[141]. This suggests a more fluid conferment of personhood and identity, a construct that may be marked by ceremonies, but requires a more gradual transition or acceptance.

It could be argued that the mode of burial for infants in Roman Britain corresponds well with perceptions gleaned from textual sources from Rome. The grouping of live and stillborn infants together may highlight the lack of conferment of a full social persona onto the infant until a few months of age. The infants are therefore buried within Roman settlements because they are not yet fully social beings, they did not need to be separated from the domestic space[142]. Having no social persona meant that infants were not bound by taboos and fear of ritual pollution which accompanied the death of an adult[143] We know from the literature that infant remains tended not to be cremated as was the norm for older children and adults in the first and second centuries in Britain. Pliny states that 'it is the universal custom of mankind not to cremate a person who dies before cutting his teeth.'[144] The burial within the settlements in Roman Britain should not be seen as denigrating to these infants, but instead they were buried within their own social world, close to the people whom their short lives would have affected. This was a repeated funerary ritual associated with a very specific age group and it should be interpreted as such[145].

Conclusion

This review of the archaeological and historical evidence for infanticide in Roman Britain highlights a series of fundamental inconsistencies in the current arguments for this interpretation with respect to the perinatal burials associated with settlements. It is a matter for concern that such interpretations have garnered such widespread publicity and uncritical acceptance. As a consequence, discourse on infancy in the Roman World, at least from an archaeological perspective, has been primarily defined by the subject of infanticide. Numerous classicists have argued that there is little evidence for infanticide in the Roman world. Instead, abandonment was the legal method

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[140] Murphy 2011.

[141] Finlay 2000; Murphy 2011.

[142] Gowland 2001; Dasen 2011.

[143] Garnsey 1991; Hope 2001.

[144] Pearce 2001, 136-67. But see exceptions in the archaeological evidence in Carroll 2006.

[145] See also Carroll 2011, 99, who concludes of the evidence from Rome that "claims of outright neglect or lack of care in burying infants in Roman Italy are thus without an evidential basis".

of limiting family size during this period and it may have been a common practice[146]. The extent to which abandonment occurred is, however, uncertain and debatable. It is likely that some abandoned infants would have died, particularly given the generally high infant mortality at the time, but in such circumstances, it is extremely unlikely that their remains would enter the archaeological record as discrete burials within the vicinity of the mother's domicile.

More recently authors have attempted more sophisticated analyses of the practice of infant burial in the Roman World in terms of perceptions of infancy and infant death[147]. The above discussion has aimed to contribute towards a move in this direction by dispelling the persistent and unsupported myth that such burials represent victims of endemic infanticide. The ages of the infants buried within settlement in Roman Britain and elsewhere in the Empire include pre-term, full-term and peri- and some post-neonatal infants who survived for several weeks or months before succumbing to either disease or congenital health problems. The distinctions between these age-groups in terms of the acquisition of personhood, as well as reasons for their death, should be brought to the fore in our interpretations. These infant remains embody a unique stage in the life course, one that is fragile and utterly dependent; their treatment in life and death provides a medium through which societies negotiate beliefs concerning the threshold of personhood and life at the brink of being.

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[146] Caldwell 2004.

[147] E.g. Moore 2009; Carroll 2011.

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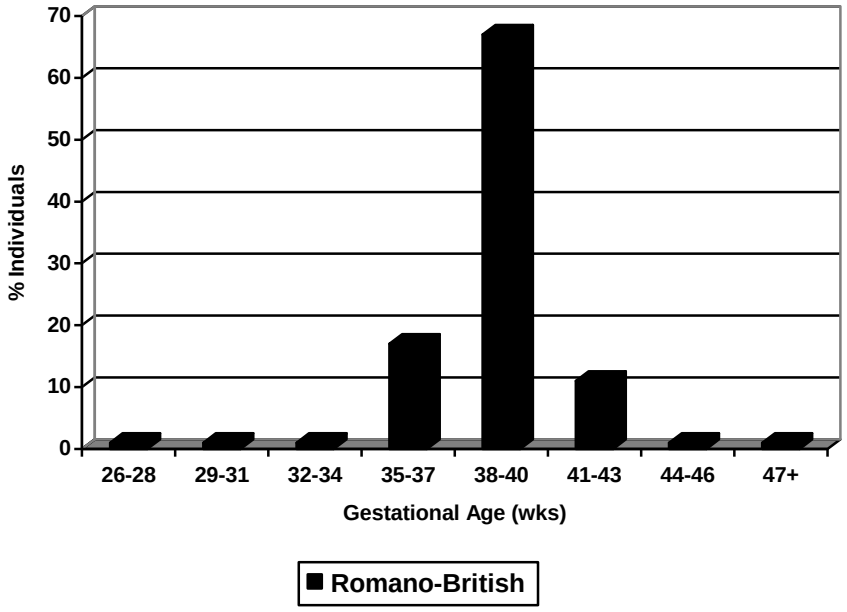

Figure 4. Age distributions of perinatal archaeological samples from Romano-British sites (adapted from Mays, 1993: 885).

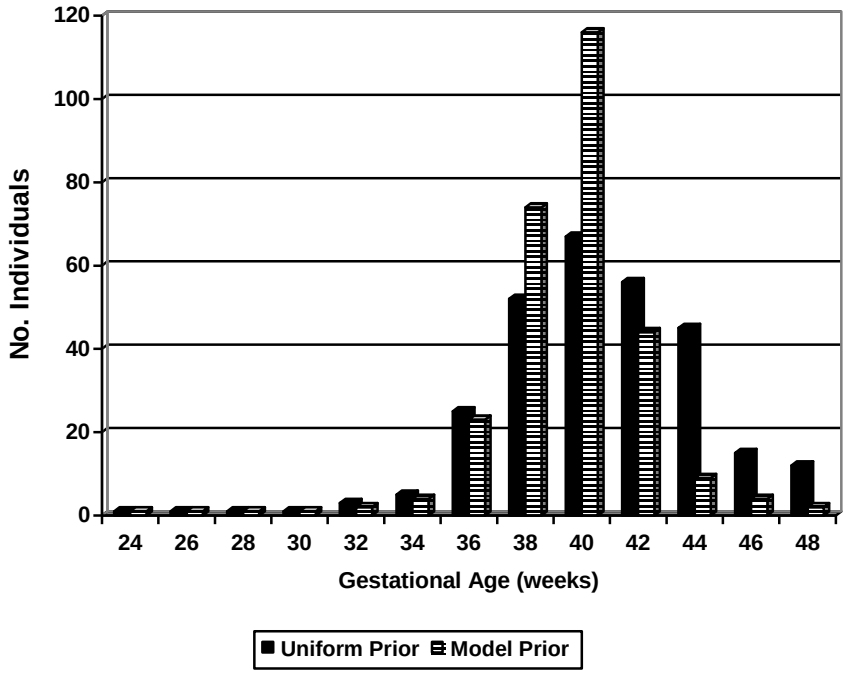

Figure 5: Age distributions of the infants using femur length from Romano-British sites. Note the greater range of gestational ages obtained using Bayesian analysis and two different prior probabilities.