Early 4,000 years ago tragedy struck a small community of less than 100 souls. A child, who we can name Sammy, died at an age, some 8 to 9 years old, at which children are generally at their peak of health and vitality. We don’t know Sammy’s gender as children do not develop skeletal signatures of biological sex until adolescence, but we’ll refer to Sammy as female. Sammy’s health, good or ill, in addition to her treatment in death, can provide insights into what it was like to be a child thousands of years ago. Bioarchaeology provides a set of powerful conceptual, methodological, and inferential tools for reconstructing aspects of both the biology and social identity of children who died well before their time in the ancient past.

Using examples from prehistoric Vietnam, I will paint a picture of what it was like to live as a child in small tropical communities before the arrival of metal technologies. This period, the Neolithic, is characterized in Southeast Asia by a move from hunting land and water animals in addition to gathering wild plants, nuts, and seeds to incorporating domesticated crops (e.g., rice farming) and animals (e.g., pig rearing) into the general subsistence economy. It is a period devoid of metals such as bronze and iron, where stone adzes, sickles, and knives were used in their stead. We also see the introduction of pottery vessels, which facilitated the storage of foodstuff and enabled more efficient cooking methods. Sammy’s story is based on extensive archaeological excavations and intensive laboratory analysis, often involving experts from a wide range of specializations (ancient DNA, ceramic and lithic analysis, osteology, palaeopathology, zooarchaeology, palynology, etc.) (see Oxenham et al. 2011).

Sammy’s village, named Man Bac, is less than a two-hour drive south of modern day Hanoi. It consisted of a cluster of closely set stilted wooden and bamboo dwellings with thatched roofs, was back-dropped by a steeply rising and partially encircling limestone ridge rising several hundred feet above the low thickly forested plains, home to elephant, rhinoceros, crocodile, and various species of deer and monkey. Within a hundred yards of the houses a large river started to broaden as it developed into an expansive estuary rich in bird and aquatic life. This watercourse was one of many that contributed to one of the largest deltas in Southeast Asia: the Red River system. The inhabitants of Man Bac formed the vanguard of a major transformational process that was to sweep through Southeast Asia, changing its inhabitants and the region as a whole for millennia to come.

A few generations prior to Sammy’s birth, villagers engaged in hunting wild animals, fishing in the river, estuary, and even open sea as well as gathering a wide range of wild plant foods. This was to suddenly change with the appearance of newcomers from the north, with exotic physical features, bringing a new way of living: domesticated crops and animals. Rather than conflict, the archaeological evidence suggests the two groups shared their different life-ways and even genes. However, the transformations occurring at Man Bac were not all positive, with a dramatic increase in female fertility and a decline in human health being two of the clearest side effects.

How do we know that female fertility markedly increased in Sammy’s community? While it may seem somewhat paradoxical, the large number of dead and buried children at Man Bac, half of the entire cemetery population, is a signal of fertility. Hunter-gatherer peoples tend to have long intervals between births and relatively low levels of infant mortality. Farmers tend to have reduced birthing intervals and increased rates of infant mortality, leading to an increase in the percentage of children in their cemeteries (see Bocquet-Appel 2011). Neonates, or babies that died shortly before or soon after birth, accounted for over 20 percent of the entire cemetery. While this figure sharply declined as babies became infants, there was another mortality peak at 1½ years of age. The
large number of neonate deaths is expected in preindustrial societies; the main cause of death due to endogenous factors, e.g., low birth weight or birthing trauma. The increase in deaths at 1½ years, on the other hand, was due to exogenous factors, e.g., infectious disease and accidental death (Halcrow and Tayles 2011:340). Sometimes both a baby and its mother would have died at or around the time of birth, but evidence for such an unfortunately familiar occurrence is rare archaeologically. We only have one such example in Vietnam: in a contemporaneous community in the far south, close to modern-day Saigon, a young woman only 15 years old, a child herself, died with the tiny skeletal remains of her unborn baby preserved within her lower abdominal region. The tragedy is compounded when considering this young woman-girl was not very healthy before she died, with evidence for congenital pelvic anomalies and appalling oral health (see Willis and Oxenham 2012).

Is it possible to be more specific regarding the causes of so many children dying at Man Bac? For the most part the answer is no, however, we can examine aspects of the health of these children before they died, which may throw some light on the underlying reasons for their untimely deaths. In some cases chronic illnesses can leave a skeletal signature or echo of the soft tissue changes associated with certain diseases. When bone is involved in the body's response to disease it will react by way of a net addition or loss of skeletal material, or a combination of both involving remodelling of the bony tissues. We know that at least one child, whom we called Nguyen, suffered from a seriously disabling disease as a young child, leaving him with complete lower limb and partial upper limb paralysis. Despite the severity of Nguyen's condition, he survived into early adulthood; in part facilitated by dedicated and devoted care (see Lorn Tilley's next issue). A very high proportion of Man Bac children suffered from debilitating underlying chronic infectious disease that likely contributed to their eventual deaths. Moreover, the increased level of fertility had a deleterious affect on the health of these children's mothers.

In the past, as now, women tended to have poorer dental health than men, in part due to contrasting female and male biology and physiology. Differences in the composition and flow rate of saliva, hormonal fluctuations (e.g. female menstrual cycling) and major changes associated with pregnancy are contributing factors (see Lukacs 2008). It’s not hard to imagine that a marked increased in the number of births per mother will also be associated with poorer female oral health in a community with elevated levels of fertility: frequent births equates with poorer health.

After birth, mother-infant bonding is furthered through breast feeding, which also provides the new born with vital nutrients and a measure of its mother’s built up immunity to a range of local infectious agents. The introduction of solid foods and decreased reliance on breast milk marks a baby’s first major transitional period: weaning. The process of weaning, which can take months if not years, can be fraught with danger: not the least being reduction or loss of the mother’s anti-bodies and the introduction of hitherto unknown pathogens by way of solid foods. The sharp spike in Man Bac infant mortality at around 1½ years of age could be a signature of this major infant life stage: weaning.

Major transitional periods in life, liminal phases, mark entry into social groups predicated on a range of biological, psychological and socially mediated signifiers. An individual's identity as a child versus an adult, perhaps a fundamental bio-social dichotomy, differs by culture and through time. In past, and indeed modern, communities multiple bio-social categories occurred that could also vary by gender and other aspects of identity (e.g. status). Identifying such bio-social groups from cemetery remains can be problematic and requires an assessment of both the biological age (which tends to approximate chronological age) of the human skeletal remains and the manner in which individuals were buried: e.g., investment in burial (e.g., grave goods or furnishings, type of coffining, etc.), body orientation, location, position, and so forth.

In examining evidence for bio-social age classes at Man Bac we have found that children are not automatically buried with grave offerings until they are at least 7 years of age. Prior to this age milestone, children have a steadily decreasing probability of receiving funerary offerings: neonates only had a 50 percent likelihood. Nephrite, or jade, is found in a number of burials, but the earliest it appears in children’s graves is at 1½ years, perhaps coincidental with the inferred period of weaning: or a further signifier of this important bio-social age class. Another important bio-social stage seems to begin around 3 to 5 years, when tools first accompany deceased children. From a motor and cognitive development perspective this makes sense, as children will have the mental and body coordination skills to facilitate the use of tools. Children as young as 5 years old wielding machetes, leading water buffalo, searching for shellfish, and engaging in any number of economically significant tasks are as common a sight in Southeast Asia today as thousands of years ago.

A further bio-social age class, defined by a high percentage of young individuals holding long bivalve shells in their hands, spans a range of other classes from birth to late teens. The significance of the shells is difficult to determine, but symbols of fertility (e.g., shells) are often associated with the dead, perhaps as a reflection of the opposing states of birth (life) and death. This brings us full circle back to Sammy, nicknamed the “shell-child” when discovered, who was
unusual in being one of only two children to die aged 8–9 years old, and the only individual to be laid to rest upon a bed of shells. Sammy's lifeless fingers grasped long knife-like shells, while a necklace of small cowry shells encircled her neck. Additional grave offerings included a globular ceramic pot and footed bowl that may have contained victuals to assuage any thirst and hunger she might encounter on her journey onward.

We are unlikely to ever know the underlying cause of Sammy's death, and her skeleton is free of any obvious signs of either trauma or responses to chronic infectious disease. Many of the other children at Man Bac did show signs of physiological disruption and/or disease before they ultimately succumbed. Given the extremely high probability of death during childhood at Man Bac, one might be excused for thinking that adults would forswear any significant emotional investment in their offspring. However, such a proposition is not supported: despite high levels of childhood mortality and morbidity, all recovered children were afforded basic burial treatment—and some very young kids had exceptionally “rich” graves. There was deep emotional investment in children in spite of (or perhaps because of) the exceptionally high risk of ill health and/or death. Sammy, and the other children at Man Bac, was invested with great value in death and in life. Living with death everyday heightened the community’s appreciation of the gift of life: children.

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