

# Book Review of *Growing Up in the Ice Age: Fossil and Archaeological Evidence of the Lived Lives of Plio-Pleistocene Children*

April Nowell

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Where do children fit into the archaeological past, and should we even consider them? How do children and young adults factor into the values, beliefs, and cultural practices of a community? Can children impact human evolutionary history? Questions like these are addressed and answered in April Nowell's illuminating and engaging book, *Growing Up in the Ice Age*. The book is conveniently broken down into seven chapters covering a range of subjects, is richly illustrated, includes appendices of fossil remains, and contains numerous references and a robust bibliography. *Growing Up in the Ice Age* is important for students and professionals in physical and behavioral anthropology because it fills a gap in helping us understand the fundamental role children played, literally and figuratively, in our hominin past.

The book begins with a basic question: when is a child a person? The answer depends on groups in different locales, evident in how they were buried, if at all, and what types of grave goods, if any, were interred with them. Children were not typically studied in the archaeological record, which emphasizes adults. However, archaeologists can reconstruct the play and behaviors of children, Nowell shows. She works on the hypothesis that the archaeological record is driven by the agency of children, as much as adults, and so the book gives sub-adults voice and body. Contemporary Western notions of childhood focus on innocence and dependence, but that is not necessarily true in other cultures or times. Nowell cites examples from thousands of years ago when children were engaged in weaving or painstaking metal work. Children were involved in religious, cultural, or militaristic rituals and activities. While toys tend to reinforce gender roles, that was not likely always the case. Prehistorically, children might have been involved in crafting smaller versions of objects representing what would be used in adulthood. More so, children might have introduced innovations to reflect their own personalities and intelligence. All this gets complicated culturally since there is a notion of biological age in child development but no real social definition of a child or childhood, says Nowell.

Early in the book, Nowell examines birth, life, and death among early hominins, with reference to great apes. Female bonobos in captivity have been noted to offer protection to a birthing conspecific. Perhaps in hominin evolution this was to shield newborns from predators or un-

related males intent on infanticide. These female bonobos have been observed, Nowell adds, to offer birth-guiding hand gestures. For humans, in contrast to chimpanzees and macaques, prefrontal cortex genes are turned on after birth and peak around five years of age. Synaptic formations in human children, then, are more greatly influenced in their early lives. After *Ardipithecus*, a very early hominin species from circa 4.4 mya, research suggests later hominins gave birth to heavier babies who required more care. Australopithecines, from juvenile fossils, probably had a childhood phase, though shorter and more ape-like than later hominins, as suggested by their morphology. For *Homo erectus*, prenatal brain development was similar to modern humans but postnatally was somewhat ape/human. For *H. erectus* children there probably was an expanded stage of childhood. Later, Neanderthal maturation was slow but included adolescent growth spurts, as in their stockier bodies compared with modern humans.

Because early humans were mostly bipedal and eventually hairless, babies did not cling to their mother's back, as with apes. This means that infants were in frontal carrying positions and could, therefore, read expressions and emotions from their mother's face and eyes. No doubt this contact helped brain and social development, asserts Nowell. Some mothering stress was relieved by males, relatives, and even older siblings. Older, infertile females were likely involved in helping rear infants and children. Alloparenting is not uncommon in great ape species, though female chimpanzees tend not to live as long after post-menopause as humans. Extended life for humans might be a result of this parenting investment, which increases the fertility of their child-bearing relatives. In this so-called grandmother hypothesis, older females might have appeared among our australopithecine ancestors, but it probably arose with *H. erectus* by 2 mya. This leads Nowell into a discussion of what constitutes a family and when that unit might have begun. By *H. erectus*, there was sexual division of labor and by *Homo sapiens* socially cooperative behaviors, evidenced, explains Nowell, by various fossil footprint types in proximity to each other.

Central to Nowell is her claim contesting that children are invisible in the Paleolithic archaeological record. In fact, she goes on to argue that children served vital social functions in the community. She starts with play and how important it is to a child's development as a mental, physical,

and psycho-social fitness enhancing mechanism. Play also offers an opportunity for parental investment, but it is really the creative learning and interactions among peers that are paramount. In addition to object manipulation, there is also what she notes as mothering play, prominent among primates and contemporary children. Examples of Ice Age toys still around in some form today include rondelles, or thaumatropes, engraved disks sometimes spun on a string to create moving images. These representations could also have been used in teaching or storytelling, Nowell relates. Just as in modern cultures where children play with miniaturized versions of tools and weapons, archaeological evidence reveals this was true also for Paleolithic children. Ice Age children seem to have had and used musical instruments. If, as she says, some Neanderthals sometimes buried their dead, that is cultural. Grave goods occur in some of these burials, even with children, from Israel, dating to 100 kya.

In addition to toys and burials, Nowell outlines the “secret spaces” outside of the view of adults where children and adolescents could engage in play and activities. Evidence for these sites in a larger encampment exists in France, where the sub-adult areas appear to mimic, on a novice scale, tool manufacture and cooking as in the adult areas of sites. Children were important contributors to the socio-economic conditions of Paleolithic times. They were involved in crafts and toolmaking, food production and processing, hunting, etc. Evidence appears in stone tool manufacture that trainees were in proximity to skilled crafters. For Ice Age children, skills in tool assembly and use were enhanced through verbal instruction, play, or even storytelling. Children were active makers because as adults they would need tools.

Storytelling for children helps them understand and learn about all aspects of life, from domestic and social affairs, to interpersonal and group behaviors, including practical information about food and hygiene. While these oral Paleolithic stories no longer exist, Nowell uses the imagery of cave art to make her points. For instance, animals depicted on cave walls, depending on the area, were not necessarily those of the environs, suggesting the symbolic importance of some creatures. With cave art, she explains, there is “visual play” or how light, shadows, and angles can make animals appear to move. There are examples of humor, with grinning animals. Nowell says cave images were likely used in storytelling with their “narrative quality,” some employing images of men hunting or women dancing or human-animal figures consistent with real life mask wearing. The cave paintings might have ritualistic significance. Musical flutes dating back to 40 kya might imply performance related to these arts, and she believes children would have been active meaning makers. There is evidence that finger flutings, or images and figures drawn by hand, are the creations of children, and in some cases the children collaborated with adults. Paleolithic art reveals cultural differences from place to place, not only in form and structure of the representations, but also in the pigments and materials used. Nowell submits there might

have been art apprentices as there certainly were with toolmaking. Her book, and the researchers she discusses, are a testament to the forensic work undertaken to understand the production of artistic representations by children, whether on walls, portable materials, or in ceramics. Contrary to some prevailing thought, cave art, beading, clothing, and tools were not just made by “man the hunter” but by women and children.

It is even more challenging to study Paleolithic adolescents, Nowell says. While adolescence is difficult to measure in *H. erectus*, the research consensus concludes that Neanderthals seem to have experienced a period between childhood and adulthood, though shorter than in modern humans. There are skeletal markers that help archaeologists determine the growth in height and weight from childhood to puberty. From an evolutionary perspective, adolescence, with some differences between young men and women, appears to have bestowed the advantage of gaining important socialization skills. Young people more frequently associated with adults before becoming parents themselves. Nowell reports Paleolithic evidence on an “emerging adulthood” developmental stage where between ages 18–25, corresponding to the maturing brain, adolescents learned to become parental adults. This observation is reinforced by the relatively high death rate of children, meaning that those who survived would have spent more time in “mixed age” groups and not only with adolescents. Nowell draws conclusions from facts and is careful not to generalize, but she says that based on burial remains, Paleolithic people were empathic to those who were different. She offers the example of a dwarf teenage boy buried with, presumably, his mother, or how some animals, like domesticated dogs, were buried with humans.

For Nowell, the end result, recapitulated in Chapter 7, is that Paleolithic children helped propel human evolution. Her point is that children should become a focal point of serious study by archaeologists and anthropologists, as she has demonstrated in her carefully written and impeccably researched book. Going beyond Darwinian evolution, she concludes with a discussion of the Extended Evolutionary Synthesis and niche construction. Organisms often interact biologically and culturally with their environments in a reciprocally dynamic manner. Ecology can be interactive, and organisms can build their own niches. This is not merely adaptation to but construction of a habitat in an ecosystem. Interactive choices are made on physiological and behavioral levels often independent of gene mutations. Self-modifying selection occurs by using what we can broadly label as culture. There are, on the level of population development, Lamarckian elements in the acquisition and transfer of acquired characteristics passed externally from one generation to another.

Clearly, this thinking impacts on and has influenced Nowell as she sees children creatively acting on adults who in turn have socially acted on children culturally, behaviorally, and developmentally in participatory experiences. Knowledge and practices that enhance fitness or the ability to reproduce successfully can be spread and transferred in

communal activity and subsequently extended and distributed cognitively in and across groups. Children are a critical aspect of this dynamic and deserve, rightly according to Nowell, more attention.