

Chapter 2 ~~ADLECENTS~~
Childhood & Adolescence



Chapter 3: Childhood

Bliss is the plaything of the child —

The secret of the man

The sacred stealth of Boy and Girl

Rebake it if we can

--Emily Dickinson

Childhood—the age of discovery where kids possess boundless energy, an untamed imagination and a million questions. From this stage of life nothing is impossible except arriving at a destination during a LONG (five to ten minute) car ride to visit family or friends. In the eyes of a child, second in-command to the fearless superheroes who laugh in the face of danger on Saturday morning cartoons are none other than their parents who come to the rescue with bandages when children fall on the playground. Unlike adults, children see the world through a very young and optimistic scope. This youthful and innocent view of life and having a simplistic mindset is the sole reason why adults and elders wished they hadn't rushed their youth away when a hug and a warm smile made every worry dissipate. Of the million traits kids are known to have, five characteristics that set childhood apart from any others include children's crazy imagination, their eagerness to obtain knowledge, boundless energy, unmatched trustworthiness towards everyone and of course innocence.

Ages ago, in the time of the dinosaurs it seems when I was in elementary school, the teacher asked the class what the future would be like. The class took this assignment to heart and put every effort and every ounce of brain power into imagining what the next

one hundred years would look like and how technology would change over time. The class envisioned a world filled with hovercrafts traveling at the speed of light through cities in the sky. Sure, it is not utterly impossible, but our ideas were without a doubt “out of this world”. But who is to blame—we could always dream. Plus, we just based our conclusions off of “Jimmy Neutron”. Popular movies and television shows geared towards children such as “Fairly Odd Parents”, “Barney” and many others encourage children to stretch their imaginations to new unexplored heights because the human mentality knows no boundaries. Aside from the media, books and poems also introduce children of all ages into coloring outside the lines. In Jack Prelutsky’s poem “A Very Boring Day”, he shows how adventure can be in one’s backyard and also how things can be overlooked.

Linking to imagination, a child’s mind will never become stagnant like a motionless pond in the middle of a hot, muggy summer day. The world in the eyes of a child is an endless place of discovery and opportunity. Their young minds are like a blank slate and they have the unsurpassed eagerness to find out everything and fill up that slate with all the wonders of the earth. It is somewhat amusing yet intriguing to watch a child the morning of the first day of school. Most likely the child picked out a school outfit with utmost care the previous night and made sure everything was packed in the book bag, including the shiny crisp red apple for the teacher. Throughout elementary school a detectable urge to learn and succeed grows as children frequently bring home tests with a red A+ and a gold star to hang on the refrigerator to be awed by family members who stroll in to the kitchen to procure nourishment.

One of the more obvious traits children have is limitless energy—its like they are offspring of the Energizer bunny. Springing out of bed like a speeding bullet at seven in the morning to watch Saturday cartoons and not stopping to take a breath until bedtime, this is the basic day in the life of a child. Parents always sit back and wonder if what they feed their kids is the problem. Maybe the sugar rush plays some crucial factor in the child constantly being in hyper speed, but for the most part the answer lies simply in the fact that children were just wired this way. Having exceedingly more energy than older humans is extremely frustrating for parents and guardians especially when trying to chase them around the house to give them a bath. The only time that kids loose their stamina is when they are the most venerable. Envied by many people, this bottomless pit of energy is best exemplified in the childhood stage of development unless it is mimicked by consuming several Red Bulls.

Similar to associating adolescence with a ton of energy and exuberance, children also trust everyone, especially close family and friends to no end. Where children loose this trait is highly disputable, but the world would be in a better position if this trait was irreversible and permanent. Trusting people to no boundaries can be harmful however, but children do not yet know to form their opinion. For example, what older sibling did not try to scare their younger sibling in telling them that monsters under the bed and in the closet really existed? I know I am guilty of this crime. This frame of mind is admirable to some extent though.

Innocence, the prize possession children have and they do not know they hold this valuable key. Similar to the old phrase “Innocence is bliss”, innocence is along the lines of that concept. In this blissful state of not knowing, all corruption of the world is

nonexistent. Being in this “bubble”, some say is harmful for a child because they need to know of the evils that are present and to be cautious and aware that all people are not good. Religion plays an important role in hanging on to one’s innocence. Having a structured set of values to abide by acts as sturdy, safe haven in times of tribulation and chaos. Moreover, children of all ages have the sense to be less skeptical of everything like adults tend to be.

The simplicity of the world viewed mainly by children and taking a man’s word as gold is an admirable attribute. Famous English poet Francis Thomson sums it up in better terms. She said, “Know you what it is to be a child? It is to be something very different from the man of to-day. It is to have a spirit yet streaming from the waters of baptism; it is to believe in love, to believe in loveliness, to believe in belief; it is to be so little that the elves can reach to whisper in your ear; it is to turn pumpkins into coaches, and mice into horses, lowness into loftiness, and nothing into everything, for each child has its fairy godmother in its own soul.” Somewhere in the scheme of things, this angelic element of the human nature is lost, and this link is unfortunately one of man’s greatest blemishes.

Childhood seems to be a distant place in the cobwebs of my existence, but back then I believed that the Tooth fairy slipped a surprise under my pillow in exchange for my baby tooth, and that Santa kept up with which children who were naughty and nice. That blissful stage of development seems almost magical in a sense that everyone at one point were so trusting of everyone and had such a great disposition of the world and of people. As children mature and grow up, these five characteristics seem to fade as new ones dominate. Innocence, as well as a positive outlook of the world and its inhabitants turns

from a fairy tale perspective into a harsh reality as drama tragedy and heartbreak takes the stage in one way or another. None the less, childhood is a rapid moving phase of maturity in which children and teens learn many valuable life lessons through unique experiences.

The following article, taken from the June 2, 2001 edition of *Science News*, discusses the potential benefits of child fossils to evolutionary thought. According to the article, scientists now believe that analysis of infant, toddler, and teenaged fossils can provide a tremendous amount of insight into the developmental stages of Homo Sapiens which could lead to a better understanding of modern man as well as his ancestors. The article illustrates that understanding children, both living and dead, can have a profound impact on human knowledge.

Evolution's Youth Movement

Anthropologists usually don't find the skeletons of long-dead toddlers when digging into ancient ground. But at Syria's Dederiyah Cave, they did just that in 1993 and again in 1997.

Excavations at this approximately 60,000-year-old site yielded the partial remains of one small child and the nearly complete skeleton of another. Researchers estimate that both died at around age 2.

The Dederiyah youngsters are part of a growing contingent of fossil kids attracting scientific interest. Fossils of children had previously been treated more as oddities than as beacons of evolutionary insight. Now, however, these ancient youths are revealing aspects

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of human evolution that had evaded scientists studying fossil elders from various Homo species, the first of which appeared around 2.5 million years ago.

In particular, infant and juvenile fossils hold clues to a critical issue: the evolution of distinctive patterns of growth in modern Homo sapiens and our immediate ancestors. Understanding individual development may for the first time delineate pivotal differences among Neanderthals and several Homo species.

Scientists agree that people grow to adulthood over a longer period and across more developmental stages than apes and monkeys do. A consensus also holds that australopithecines, members of an early genus in the human evolutionary family that lived from around 5 million to 2 million years ago, followed a developmental pattern closer to that of modern apes than that of humans.

Yet relatively little is known about the evolution of individual growth patterns in Neanderthals and other members of the Homo genus. Research into growth and development has long taken a back seat to detailed analyses of skeletal traits of adult Homo fossils.

Adult skulls look enough alike to form a hazy continuum among specimens assigned to modern, early, or archaic H. sapiens or to other Homo species. Without clear dividing lines among skulls and teeth, the most abundant fossils, some researchers identify a dozen or more Homo species, while other scientists propose that only anatomically diverse forms of H. sapiens have roamed the Earth during the past 2 million years or so.

Recent discoveries in developmental biology have begun to influence this debate. For instance, in animals ranging from sea urchins to mice, early development may proceed differently for closely related species that end up looking much the same.

Development may also take unexpected turns for members of a species exposed to minor changes in diet or social organization, with dramatic consequences for body shape. Finally, genetically mediated shape changes in certain parts of the skeleton may trigger developmental processes that lead to extensive remodeling elsewhere.

These findings indicate that anthropologists' small but growing collection of fossil infants, children, and teenagers may hold untapped clues to humanity's origins, says Steven R. Leigh of the University of Illinois at Urbana-Champaign. Leigh and other like-minded anthropologists presented their latest findings at the annual meeting of the American Association of Physical Anthropologists, held in Kansas City in March.

On the other hand, the twists and turns of individual development can sometimes hide more than they reveal about evolution, Leigh notes. It's time however, to drop the assumption that evolutionary forces primarily affect the shape and function of adults' bodies rather than how youngsters grow, he contends.

"There's a fair amount of chaos right now regarding how to look at individual development and ancestral patterns of growth," Leigh remarks. It's clear that developmental patterns evolve much more rapidly and profoundly than has often been assumed, he says.

Several research milestones have inspired current explorations of growth and development in fossil species, said Barry Bogin of the University of Michigan-Dearborn at the March meeting. In 1917, D'Arcy Thompson used mathematical models to show that different patterns of growth from a common fetal form could produce the contrasting skull shapes of adult chimpanzees and humans. In 1924, Adolph Schultz used eruption times of permanent teeth to mark off three primate life stages: infantile, juvenile, and adult.

Two decades later, Samuel Brody showed that a juvenile phase occurs in people and chimps, but not in cattle and other farm animals. Since then, researchers examining teeth and other characteristics have identified a juvenile stage in wolves, elephants, whales, and other highly social mammals.

Another research milestone was reached in 1975, when researchers began to study tooth growth in australopithecines. The closest parallel today to the pattern of dental development of these ancient, two-legged creatures is not in people but in common chimpanzees.

Since then, the scientific focus has shifted to Homo species. By examining teeth and other body parts of living populations, Bogin identifies five human growth stages after birth: infant, child, juvenile, adolescent, and adult. Childhood and adolescence don't appear in any other living species, he asserts.

Several researchers have explored the possibility that Homo erectus individuals also passed through childhood and adolescence. This potential ancestor of H. sapiens lived from around 1.6 million to perhaps 100,000 years ago.

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H. erectus fossils, such as a nearly complete skeleton of a solidly built boy in his early teens, indeed reflect an extended childhood growth period, says Susan Anton of Rutgers University in New Brunswick, N.J.

Earlier studies had disagreed on whether H. erectus experienced a cardinal feature of human adolescence, the sudden growth spurt. Anton's latest investigation indicates a teenage growth surge in H. erectus slightly smaller than that in H. sapiens. Jaw and facial heights of H. sapiens typically increase 15 to 20 percent during their teens. Anton's analysis of seven H. erectus fossils finds that during the teen years, H. erectus increases 80 to 90 percent as much. However, this statistical finding remains tentative.

"We need to use caution in talking about an adolescent growth spurt for Homo erectus and wait for more fossil finds," she says.

H. erectus also plays into a long-running debate over whether modern humans have evolved so that adults, at least from the neck up, now look like juveniles in ancestral Homo species did. Scientists refer to this phenomenon as neoteny.

Preliminary data indicate that the rounded cranial shape of adult H. sapiens resembles that of juvenile H. erectus, according to Leigh. He compared measurements of 70 modern human skulls from people of various ages with those of two adult and one juvenile H. erectus skulls.

Neoteny in the skull may have been an evolutionary compromise, Leigh theorizes. This process made room for the larger brains in H. sapiens without remodeling many facial and cranial traits from H. erectus, in his view.