



EVOLUTION OF PHYSICAL ANTHROPOLOGY

**Dr. Konda.
Ramalinga Reddy**

M.Sc, M.Phil, Ph.D, Academic Consultant Dept. of Anthropology, S.V. University, Tirupati

**Prof K
Surendranadha
Reddy**

Head, Department of of Anthropology, S.V. University, Tirupati

ABSTRACT

This paper is presented only research purpose .Biological anthropology, also known as physical anthropology, is a scientific discipline concerned with the biological and behavioral aspects of human beings, their extinct hominin ancestors, and related non-human primates, particularly from an evolutionary perspective. This subfield of anthropology systematically studies human beings from a biological perspective. Physical/ biological anthropology is the study of the past and present evolution of the human species and is especially concerned with understanding the causes of present human diversity.

KEYWORDS :**Branches**

As a subfield of anthropology, biological anthropology itself is further divided into several branches. All branches are united in their common orientation and/or application of evolutionary theory to understanding human biology and behavior. Bioarchaeology is the study of past human cultures through examination of human remains recovered in an archaeological context. The examined human remains usually are limited to bones but may include preserved soft tissue. Researchers in bioarchaeology combine the skill sets of human osteology, paleopathology, and archaeology, and often consider the cultural and mortuary context of the remains. Evolutionary biology is the study of the evolutionary processes that produced the diversity of life on Earth, starting from a single common ancestor. These processes include natural selection, common descent, and speciation. Evolutionary psychology is the study of psychological structures from a modern evolutionary perspective. It seeks to identify which human psychological traits are evolved adaptations – that is, the functional products of natural selection or sexual selection in human evolution. Forensic anthropology is the application of the science of physical anthropology and human osteology in a legal setting, most often in criminal cases where the victim's remains are in the advanced stages of decomposition. Human behavioral ecology is the study of behavioral adaptations (foraging, reproduction, ontogeny) from the evolutionary and ecologic perspectives (see behavioral ecology). It focuses on human adaptive responses (physiological, developmental, genetic) to environmental stresses. Human biology is an interdisciplinary field of biology, biological anthropology, nutrition and medicine, which concerns international, population-level perspectives on health, evolution, anatomy, physiology, molecular biology, neuroscience, and genetics. Paleoanthropology is the study of fossil evidence for human evolution, mainly using remains from extinct hominin and other primate species to determine the morphological and behavioral changes in the human lineage, as well as the environment in which human evolution occurred. Paleopathology is the study of disease in antiquity. This study focuses not only on pathogenic conditions observable in bones or mummified soft tissue, but also on nutritional disorders, variation in stature or morphology of bones over time, evidence of physical trauma, or evidence of occupationally derived biomechanic stress. Primatology is the study of non-human primate behavior, morphology, and genetics. Primatologists use phylogenetic methods to infer which traits humans share with other primates and which are human-specific adaptations.

History

Biological Anthropology looks different today than it did even twenty years ago. The name is even relatively new, having been 'physical anthropology' for over a century, with some practitioners still applying that term. Biological anthropologists look back to the work of Charles Darwin as a major foundation for what they do today. However, if one traces the intellectual genealogy back to physical anthropology's beginnings—before the discovery of much of what we now know as the hominin fossil record—then the focus shifts to human biological variation. Some editors, see below, have rooted the field even deeper than formal science.

Attempts to study and classify human beings as living organisms date back to ancient Greece. The Greek philosopher Plato (c. 428–c. 347 BC) placed humans on the *scala naturae*, which included all things, from inanimate objects at the bottom to deities at the top. This became the main system through which scholars thought about nature for the next roughly 2,000 years. Plato's student Aristotle (c. 384–322 BC) observed in his *History of Animals* that human beings are the only animals to walk upright and argued, in line with his teleological view of nature, that humans have buttocks and no tails in order to give them a cushy place to sit when they are tired of standing. He explained regional variations in human features as the result of different climates. He also wrote about physiognomy, an idea derived from writings in the Hippocratic Corpus. Scientific physical anthropology began in the 17th to 18th centuries with the study of racial classification (Georgius Hornius, François Bernier, Carl Linnaeus, Johann Friedrich Blumenbach).

The first prominent physical anthropologist, the German physician Johann Friedrich Blumenbach (1752–1840) of Göttingen, amassed a large collection of human skulls (*Decas craniorum*, published during 1790–1828), from which he argued for the division of humankind into five major races (termed Caucasian, Mongolian, Aethiopian, Malayan and American). In the 19th century, French physical anthropologists, led by Paul Broca (1824–1880), focused on craniometry while the German tradition, led by Rudolf Virchow (1821–1902), emphasized the influence of environment and disease upon the human body.

In the 1830s and 40s, physical anthropology was prominent in the debate about slavery, with the scientific, monogenist works of the British abolitionist James Cowles Prichard (1786–1848) opposing those of the American polygenist Samuel George Morton (1799–1851).

In the late 19th century, German-American anthropologist Franz Boas (1858–1942) strongly impacted biological anthropology by emphasizing the influence of culture and experience on the human form. His research showed that head shape was malleable to environmental and nutritional factors rather than a stable "racial" trait. However, scientific racism still persisted in biological anthropology, with prominent figures such as Earnest Hooton and Aleš Hrdlička promoting theories of racial superiority and a European origin of modern humans.

"New Physical Anthropology"

In 1951 Sherwood Washburn, a former student of Hooton, introduced a "new physical anthropology." He changed the focus from racial typology to concentrate upon the study of human evolution, moving away from classification towards evolutionary process. Anthropology expanded to include paleoanthropology and primatology. The 20th century also saw the modern synthesis in biology: the reconciling of Charles Darwin's theory of evolution and Gregor Mendel's research on heredity. Advances in the understanding of the molecular structure of DNA and the development of chronological dating methods opened doors to understanding human variation, both past and present, more accurately and in much greater detail.

The early modern period in Europe and the Near East (c.1450–1800) began with the final defeat of the Byzantine Empire, and the rise of the Ottoman Empire. Meanwhile, Japan entered the Edo period, the Qing dynasty rose in China and the Mughal Empire ruled much of India. Europe underwent the Renaissance, starting in the 15th century, and the Age of Discovery began with the exploring and colonizing of new regions. This includes the British Empire expanding to become the world's largest empire and the colonization of the Americas. This expansion led to the Atlantic slave trade and the genocide of Native American peoples. This period also marked the Scientific Revolution, with great advances in mathematics, mechanics, astronomy and physiology.

Following the conclusion of the Second World War in 1945, the Cold War between the USSR and the United States saw a struggle for global influence, including a nuclear arms race and a space race, ending in the collapse of the Soviet Union. The current Information Age, spurred by the development of the Internet and Artificial Intelligence systems, sees the world becoming increasingly globalized and interconnected

Early human settlements were dependent on proximity to water and – depending on the lifestyle – other natural resources used for subsistence, such as populations of animal prey for hunting and arable land for growing crops and grazing livestock. Modern humans, however, have a great capacity for altering their habitats by means of technology, irrigation, urban planning, construction, deforestation and desertification. Human settlements continue to be vulnerable to natural disasters, especially those placed in hazardous locations and with low quality of construction. Grouping and deliberate habitat alteration is often done with the goals of providing protection, accumulating comforts or material wealth, expanding the available food, improving aesthetics, increasing knowledge or enhancing the exchange of resources.

Humans are one of the most adaptable species, despite having a low or narrow tolerance for many of the earth's extreme environments. Currently the species is present in all eight biogeographical realms, although their presence in the Antarctic realm is very limited to research stations and annually there is a population decline in the winter months of this realm. Humans established their nation-states in the other seven realms, such as for example South Africa, India, Russia, Australia, Fiji, United States and Brazil (each located in a

different biogeographical realm).

Within the last century, humans have explored challenging environments such as Antarctica, the deep sea, and outer space. Human habitation within these hostile environments is restrictive and expensive, typically limited in duration, and restricted to scientific, military, or industrial expeditions. Humans have briefly visited the Moon and made their presence felt on other celestial bodies through human-made robotic spacecraft. Since the early 20th century, there has been continuous human presence in Antarctica through research stations and, since 2000, in space through habitation on the International Space Station

Most human reproduction takes place by internal fertilization via sexual intercourse, but can also occur through assisted reproductive technology procedures. The average gestation period is 38 weeks, but a normal pregnancy can vary by up to 37 days. Embryonic development in the human covers the first eight weeks of development; at the beginning of the ninth week the embryo is termed a fetus. Humans are able to induce early labor or perform a caesarean section if the child needs to be born earlier for medical reasons. In developed countries, infants are typically 3–4 kg (7–9 lb) in weight and 47–53 cm (19–21 in) in height at birth. However, low birth weight is common in developing countries, and contributes to the high levels of infant mortality in these regions.

Compared with other species, human childbirth is dangerous, with a much higher risk of complications and death. The size of the fetus's head is more closely matched to the pelvis than in other primates. The reason for this is not completely understood, but it contributes to a painful labor that can last 24 hours or more. The chances of a successful labor increased significantly during the 20th century in wealthier countries with the advent of new medical technologies. In contrast, pregnancy and natural childbirth remain hazardous ordeals in developing regions of the world, with maternal death rates approximately 100 times greater than in developed countries.

Both the mother and the father provide care for human offspring, in contrast to other primates, where parental care is mostly done by the mother. Helpless at birth, humans continue to grow for some years, typically reaching sexual maturity at 15 to 17 years of age. The human life span has been split into various stages ranging from three to twelve. Common stages include infancy, childhood, adolescence, adulthood and old age. The lengths of these stages have varied across cultures and time periods but is typified by an unusually rapid growth spurt during adolescence. Human females undergo menopause and become infertile at around the age of 50.

REFERENCES

1. Jurmain, R, et al (2015). Introduction to Physical Anthropology, Belmont, CA: Cengage Learning.
2. Ellison, Peter T. (2018). "The evolution of physical anthropology". *American Journal of Physical Anthropology*.
3. Spencer, Frank (1997). "Aristotle (384–322 BC)". In Spencer, Frank (ed
4. Marks, J. (1995) *Human Biodiversity: Genes, Race, and History*. New York: Aldine de Gruyter.
5. "The Blumenbach Skull Collection at the Centre of Anatomy, University Medical Centre Göttingen". ,2017.
6. "Memoir of Paul Broca". *The Journal of the Anthropological Institute of Great Britain*
7. "Rudolf Carl Virchow facts, information, pictures". *Encyclopedia.com*. Retrieved February 12, 2017.
8. Gail E. Husch (2000).. Retrieved February 12, 2017
9. www.wikipediajournals