

## “Forced March to Sentience” A Review of the Hall of Human Origins at the American Museum of Natural History

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I’m writing this article while riding the Amtrak train that follows the meandering route of the Hudson River. It is a beautiful spring day with lovely Maxfield Parrish fluffy clouds dotting the cerulean blue sky. Having started my journey in Philadelphia where the annual spring greening has commenced, and continuing north to Rochester—my destination—I am struck by how quickly the “greenery” turns to brown, as the seasonal change is not yet significantly reflected in the surrounding foliage. What a difference a slight change in geography and latitude make. And, since the trees are still mostly bare, I can see exposed the many homes hanging precipitously close to the river’s edge, their inhabitants clearly longing to be as proximal to the flowing river as possible. A barge is nudged southward shepherded by a tugboat, while other pleasure boats sit moored or in dry dock, still shrink-wrapped awaiting their own emergence. There is no other visible activity on the water.

Millions of years ago, our hominid ancestors in Sub-Saharan Africa evidenced the same longing to inhabit the river’s edge throughout the mid-continent savannahs, seeking both the verdant riches and shelter of the forested shoreline, perhaps fulfilling some primal desire to return to the familiar forests from which they had earlier emerged. While this seeming need to populate the river’s edge may or may not truly be an evolved shared imperative—linking modern human with our ancestors—it does at least suggest that we are truly tied to our distant past. The dual engines of genetic predisposition and environmental influence link us to all living things, past, present, and future. And, owing to

the chance mutations of shared genetic material, we have evolved in response to changing environments and geographic migration. The story of how we have become the animals that we are is richly and engagingly illustrated in the new Hall of Human Origins that recently opened at the American Museum of Natural History. Full Disclosure: the editor of this journal, Niles Eldredge, and the co-curator of the Hall, Ian Tattersall, are both friends and colleagues of mine. Additionally, I was lead designer of the Hall of Human Biology and Evolution, the exhibit that preceded the new Hall, the review of which is the topic of this essay. Having said this, I will endeavor to offer an unbiased assessment of the new exhibition.

“It’s the dinosaurs, stupid.” Years ago, during the renovation of the halls of vertebrate evolution, the then Director of the American Museum, offered up the above declaration when asked if he thought that visitors would understand the cladistical organization that served as the framework for the exhibits. Without querying him directly regarding his intent, I believe his point was that it didn’t really matter whether visitors understood cladistics or not. People were coming to see the dinosaurs, and as long as they were visible in abundance, all other topics and issues were secondary. I was reminded of this (perhaps apocryphal) quotation when I recently overheard a visitor to the newly opened Hall of Human Origins mention to his young son, “These are their real heads.” While not quibbling over the fact that the “these” he was referring to were in fact *casts* of the real heads, the point is well made. People come to exhibits like this to see “stuff.” The real thing. The thing itself. And while casts and reconstructed fleshed out prehistoric hominids are not in fact the real thing, they are close enough, and they continue to satisfy countless museum visitors. I am happy to report that skulls and reconstructed ancestors still abundantly populate this hall,

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as indeed they did its predecessor. What is also in abundance is text, and lots of it. While I tend to advocate a “less is more” approach to exhibit text, the opposite seems to be the case at the American Museum.

For over 10 years the American Museum of Natural History has appeared to consistently espouse the notion that “more is more” when it comes to information. I believe this abundance of expressed knowledge reflects an intentional administrative imperative to position the museum as the definitive resource for describing the natural world—a laudable goal and one at which I think, in large part, it has succeeded. With an unfathomably deep web site and exhibits rich in scientific erudition, the museum has replaced countless dog-eared volumes of the Encyclopaedia Britannica as *the* source for numberless research papers in high schools worldwide. With scientists roaming the world leading scientific investigation in numerous fields, the museum has, along with the Discovery Channel and a legion of computer-generated cinematic dinosaurs, made the natural sciences “cool.” However, this apparent desire to be the definitively authoritative source for scientific veracity has come at a price. It is what I call the “I know too much” disease. It is evident in the Halls of vertebrate evolution, the exhibits in the spectacularly reinvented planetarium and it continues in the Hall of Human Origins. While it is commendable to wish to share information at a high level, it is not, however, necessarily effective. Communication is about the effective exchange of information, not the information itself. I am quibbling of course because most museum visitors are in fact very good consumers. They know what they want, and they will find it regardless of how much complex information they have to avoid in their pursuit.

Structurally, the new Hall of Human Origins has a bit of a split personality. On the one hand, it presents the story of our origins as reflected in the hard evidence of the fossils and associated tools and artifacts that are what most of us think of as the tangible record of our ancestry. On the other hand, the story of our origins is also reflected in the genetic record that simply was not available when the previous hall was conceived. While there is a yeoman’s effort to reconcile these twin avenues of investigation, to this reviewer, there remains a bit of a disconnect between the two. Structurally, the hall is a series of circles. While undoubtedly elegant when viewed in the countless plans and renderings that of necessity preceded the ultimate realization of the design, this series of circular repetitions does not well serve the story being told.

Upon approaching the entrance to the exhibition, one first encounters three mounted skeletons perched on a hierarchically arranged set of pedestals that, intentionally or not, evoke the presentation of the gold, silver, and bronze winning athletes at the conclusion of every Olympic

competition. Predictably, *Homo sapiens* rests atop the central and highest pedestal, whereas Neanderthal and Chimpanzee skeletons must make do with second and third place as they rest atop the two flanking lower pedestals. While indeed the intellectual superiority and unparalleled ability to reshape the world certainly earns the superior ranking of *Homo sapiens*, I think this is a somewhat unfortunate opening message. It clearly implies that the progress of evolution is in fact something of a race with winners and losers. Of course that is true. Species do lose. They become extinct. They cease to exist. A certified loss by anyone’s standards. However, (and I am obviously making far too much of this), there is an implicit and unfortunate implication in this arrangement. An Olympic athlete literally earns her or his place on the podium, whereas we *Homo sapiens* have earned our place, not due to our industry and invention, but rather as the result of countless billions of chance evolutionary changes and environmental confluences. First impressions are important, and thus, this hierarchy, while an undeniably compelling presentation, sets for this visitor the wrong tone, one that I could not dispel as I toured the exhibit. One aspect of evolutionary diversity, and perhaps this is why I am discussing this at length, is that if there is a critical message that we all need to learn, it is that all species are “winners” in their own biological niche. Throughout human history, we have behaved as if we are somehow apart and superior to other living things. And when our numbers were relatively small, this dangerously inaccurate assessment of our place in nature had little perceived consequence. Of course today we know better. We now are living the tragic impact of this false assumption, as we desperately try to rejoin the perhaps irreparably disturbed balance of life. We do not need a powerful visual icon to reinforce our hubris.

Behind the mounted skeletons are three rear projection screens upon which an elegant computer animated video depicts the development of a human, taking us from the fertilization of a human egg by a sperm cell through successive stages of development of an embryo. “Ontogeny recapitulates Phylogeny.” It is a nice presentation. However, it is a relatively long presentation, perhaps two or more minutes (at least that is how long it felt). And that is a very long time to watch a video that is best viewed just outside the doorway of an exhibit that is clearly inviting you inside with its promised opportunities for human navel gazing. I watched visitors going and coming for some time, and I never saw one person pause to witness the video long enough to apprehend its story line.

Upon entering the hall, visitors have two options. They can turn to the right and follow the storyline that presents the story of human evolution as revealed in the fossil record. Turn to the left, and they can follow the story of our prehistoric ancestry as understood by means of the science

of genetics. Both storylines are presented in depth. And it is this density of information that truly distinguishes this exhibition from others that tell the story of our human ancestry. But it is difficult to decide which route to take. Is one more truthful than the other? Are there differences in the outcome if one chooses one mode of investigation over the other? While it may in fact be impossible to illustrate both modes of inquiry simultaneously, it would at least be a more satisfying experience for the visitor if this interlacing of the two fields of inquiry had been accomplished.

In choosing to turn to the right, visitors encounter one of several elements from the previous exhibition that has been repurposed for this hall. A spectacular painting by renowned artist, Jay Matternes, depicting the evolution of primate ancestors within likely environments, along with assembled casts of skeletons of these prehistoric primates, originally served as the introductory graphic to the presentation of hominid ancestors in the Hall of Human Biology and Evolution. The painting covers a time span of some 10 million years, illustrating these early primates within environments merging from one to the next as a continually unfolding landscape. Interpretively, this appearance of a single continuous landscape (as installed in the previous exhibition) was somewhat confusing to visitors who—ignoring the accompanying text panel—assumed that all these primates coexisted in time. In the new hall, the painting is divided by vertical acrylic time demarcations that clearly separate the different periods. These bars successfully define the different periods, but at the expense of the aesthetic experience of the painting. Perhaps you cannot have it both ways. One thing does puzzle me about the presentation of the mural, however. It feels under-lit. In fact, I am curious as to why the overall the exhibition is rather dark. While this darkness to some degree enhances the drama of the experience, I (and this is probably because I have recently enrolled in AARP!) found it actually difficult to fully appreciate some of the displays. Coupled with dense text, that in many instances leans toward the smaller font sizes, this darkness will undoubtedly pose a challenge of accessibility for very old and very young visitors.

As visitors continue on past the mural, text panels and associated specimens illustrate the science of vertebrate paleontology, telling us what we know and how we know it. Displays about dating fossils, fossil reconstruction, geographical distribution and so on are presented with the elegance of style and artistry of modeling and specimen presentation that are the hallmarks of the storied staff of the Museum's Exhibition and Anthropology departments. This mode of skillful and eloquent presentation dates back to the turn of the last century, and it is satisfying to see that this grand tradition continues. In particular, touchable models, exquisitely rendered, and complete reconstructions of

hominid heads and full figures are extraordinary works of art in themselves. Adjacent to these wall-hugging displays is a circular platform entitled "Examining the evidence." Here, touchable specimens allow visitors to examine for themselves diagnostic characteristics that enable paleontologists to make determinations as to whether particular ancestors walked upright, what kind of diet they had, and so on. Throughout the exhibition, these touchable models provide a direct interaction that effectively communicates the science being described in text and graphics. They are very effective.

The left path past the introductory presentation reveals the story of human evolution as understood through the science of genetics. The inclusion of this content is the primary innovation of the Hall of Human Origins. It is also predictably, the least successful—predictably because although the science is exciting and provocative, the means to communicate it are largely graphic. This may be an inevitable limitation, since one does not have the actual objects that illuminate the story on the opposite side of the hall to express this type of science. There are nonetheless iconic and enticing things to behold. For example, a vial of human DNA juxtaposed with a vials of DNA from a chimpanzee and a 40,000-year-old Neanderthal are especially effective, ironically, in part, because of the visual anonymity of the small quantities of milky liquid. And of course, it is this seemingly innocuous substance that contains the powerful encoded information that directs the structure of all life that has ever existed and ever will exist—powerful stuff.

As visitors leave the first circular gallery, they enter the second circular space. A large round, ribbed mesh metal concave disc hovers overhead, defining the space. If there is a stylistic element that characterizes the exhibition, it is this structure. The overall feel for the hall is that of an exhibition hewn out of steel and glass. This aesthetic is consistent with the general look of exhibitions completed in the last 10 years at the American Museum of Natural History. Halls such as the renovated exhibitions of vertebrate evolution and of course the Rose Center have a similar appearance. This is a distinctively technological aesthetic.

In the second gallery, visitors encounter another repurposed element from the previous Hall, the diminutive *Australopithecus afarensis* male and female couple. They were previously seen strolling across a volcanic ash strewn landscape in a traditional diorama that depicted the making of the so-called Laetoli footprints in Tanzania, on the African continent. They now stand upon the same ground plane as the visitors themselves. Thus, one can directly compare her or his own stature with these small adult individuals. It is a very effective encounter. Adjacent to the figures is a cast of the Laetoli footprint trackway, that now affords visitors the opportunity to literally walk along and

compare their own strides with these prehistoric hominids who last strode the earth over three to three and a half million years ago.

Arrayed around this second circular gallery are a series of window case dioramas that contain full-size reconstructed figures representing numerous prehistoric ancestors including *Homo ergaster*, Neanderthal...all the usual suspects. Some of the figures are refugees from the old hall and have taken up residence in the new exhibition. As already noted, the artistry evident in these presentations is first rate. I do, however, find one stylistic element somewhat baffling. The nicely painted backgrounds are (I believe) digitally reproduced graphics that have a gauzy membrane just in front of them. It is as if there is a haze over the paintings. The reason for this is a mystery to me. Perhaps it is a metaphor about the uncertainty or lack of specificity inherent in looking back in time. Or perhaps it is just a stylistic “design decision.” We all make them. It is to this reviewer a curious choice.

The third circular gallery is perhaps the most challenging and ambitious of the three areas. Here, topics such as the origins and meaning of art, the continuing evolution of *Homo sapiens*, the origins of language, and others are addressed. I think this is the least successful of the three galleries. While it is admirable to attempt to address such sweeping topics, the execution falls short of the goal. A large part of this gallery purports to enumerate and describe those attributes that make us unique. “What makes us human?” reads the title to an introductory column. Having now been presented with the record of the evolution of our species, this is an appropriate question to ask. The panel itself tells us that, among other qualities, it is our unique “intelligence and creativity” that truly distinguishes our species. Our ability to communicate through language, create and appreciate art and music, invent complex tools (“often at the expense of other species”), and our ability to think symbolically are what “makes us human.” Fair enough. However, what I find disappointing are, in particular, the exhibits that purport to illustrate, by means of a visual “media collage”, the depth, and breadth, and of human creativity. This kind of display is inevitably doomed to disappoint. It cannot be done. The intention is laudable, but simply put, no one exhibition, or in this case one small segment of an exhibition, can achieve such a lofty goal. It is particularly unlikely to succeed in this endeavor when you consider that this exhibit is located in a city that has perhaps the most extensive collection of artistic experiences and objects that are likely exist anywhere on the planet. And I do

not think anyone would say that New York alone truly represents anything other than a small sampling of the record of human expression.

Also in the third gallery is a large flat screen video monitor that presents almost life-size images of various scientists offering commentary about topics addressed in this exhibition. Over the monitor is a title that reads, “Understanding Our Origins.” We are presented with commentary from, among others, Kenneth Miller, Biologist, Brown University; Richard Fortey, Paleontologist, Natural History Museum, London, and Francis Collins, Director of the Human Genome Project. It is the commentary from Dr. Collins that I find troubling. Not the substance of what he has to say, but rather its inclusion in this exhibition. Dr. Collins says, “..I’m also a believer in a personal God...I find the scientific world view and spiritual world view to be entirely complementary.” Of course, Dr. Collins has every right to his beliefs. But it concerns me that his (or anyone’s) religious beliefs are part of the interpretive discourse in this exhibition. If in fact the creators of this exhibition felt that religious belief is one of the significant attributes that define us as human, then they should at least have bothered to create a similar collage of the history human religious thought as they did with art. Perhaps this quote from such a distinguished scientist is included as a way of somehow diffusing any future criticism of having a secular or explicitly non-religious scientific bias. I certainly do not know. This video is the one truly sour note in an otherwise obviously sincere attempt to provide a laudable and definitive overview of our human origins.

In summary, the Hall of Human Origins is an extraordinary achievement. It will serve, as do the other aforementioned exhibition halls at the American Museum of Natural History, the definitive repository of the story of evolution and a celebration and understanding of the natural world. Even as I complete this essay, I read, in a recent New York Times special section on Evolution, essays about the emerging evolutionary concept called “evo-devo.” I do not recall seeing it mentioned in the new hall. I am not sure. But it is safe to say that new discoveries will continue to be made in the field of human origins, and new interpretations about the science of evolution will continue to challenge old assumptions. It will continue to be a challenge for the Museum to stay abreast in interpreting evolutionary science. But to paraphrase Dr. Collins, I am confident that the scientific worldview and the Museum’s worldview will be entirely complementary.