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Prejudice on parade: Charles R. Knight's paintings and contemporary dioramas of early hominins

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Abstract. When hominin remains were recognized as belonging to a prehistoric human species, scientists debated their placement within Darwin's metaphorical "tree of life". These scientific interpretations were publicly communicated through museum displays and their accompanying paleontological art. Charles Knight (1874-1953), the prominent paleoartist of the twentieth century, began his paleontological art career under the mentorship of Henry Fairfield Osborn (1857-1935). In 1920, Knight completed murals for the American Museum of Natural History's Hall of the Age of Man: A Neanderthal family near Le Moustier cave, Cro-Magnon artists painting mammoths in Font-de-Gaume grotto, and a Neolithic community. Knight's depictions were influenced by Osborn, a eugenics supporter, who proposed Australian Aboriginal models for Knight's Neanderthals, and lighter skin colorations for Cro-Magnons and Neolithic humans. In 1926, Knight accepted a large commission at Chicago's Field Museum. The following year, he was able to visit the paleolithic sites he had previously painted. Sponsored by anthropologist Henry Field (1902-1986), Knight and his family toured early hominin sites in France and Spain, and Knight painted background landscapes of some of these sites for Field. Renowned archaeologist Abbé Henri Breuil guided his trip, which had a lasting impact on Knight. Although Knight did not paint prehistoric humans for the Field Museum, Henry Field spearheaded the construction of dioramas featuring early humans for his museum. Both Knight's murals and the Field Museum dioramas illustrated a wide chasm between Neanderthals and Cro-Magnons, a misconception more pronounced after genomic sequencing revealed *H. neanderthalensis* and *H. sapiens* interbred. While Knight's cave art illustrations evolved, his hominin stereotypes continued. He persisted in describing Neanderthals as "squat, grotesque, savage" and Cro-Magnons as "tall, intelligent, splendid".

Keywords: Charles R. Knight – paleontological art – paleoart – Cro-Magnon – Neanderthal – American Museum of Natural History – Field Museum

1. Brief Historical Context of Early Hominin Discoveries

In 1848, the first Neanderthal skull was recovered from a Gibraltar quarry, but the fossils would not be accurately interpreted until Johann Fuhlrott (1803-1877) recognized that fossil bones found in 1856 within the Neander Valley, Germany, were from an unknown human species. In 1868, the first Cro-Magnon remains were recovered in France. Prehistoric human discoveries continued; Eugene Dubois (1858-1940) led the 1891-1892 excavation of Java Man, or *Pithecanthropus erectus* (later *Homo erectus*). The Taung Child (*Australopithecus africanus*) was discovered in South Africa in 1924.

The 1840s and 1850s Neanderthal fossils did not have the benefit of being interpreted within the theory of organic evolution by natural selection, since Darwin did not publish *On the Origin of Species by Means of Natural Selection* until 1859 (Darwin, 1859). With his 1871 book, *The Descent of Man, and Selection in Relation to Sex*, Darwin applied the natural selection mechanism to humans (Darwin, 1871). Contemporary interpretations of Neanderthal and Cro-Magnon fossils emerged as a dichotomy between subhuman and early modern human within a Darwinian "tree of life" (Darwin, 1859), and this interpretation was maintained through the 1950s (Dorey, 2019). Not only did scientists understand Neanderthals as primitive savages—and the artistic Cro-Magnons

as statuesque early modern humans—but these scientific interpretations also were publicly communicated through museum displays and paleontological art to influence public perceptions and reinforce stereotypes (Clary, 2021; Rosenberg & Clary, 2018).

2. Charles Knight, Prominent Paleoartist

Charles R. Knight (1874-1953) was internationally recognized as a paleontological artist; he

may be the premier paleoartist of the 20th century (Fig. 1). As a young boy, Knight had privileged access to the American Museum of Natural History since his father was secretary to investment banker and Museum treasurer John Pierpont Morgan (Knight, 2005, p. 3-4). Two early tragedies in 1880 influenced the trajectory of Knight's life. A rock thrown on the playground struck his right eye, resulting in severely reduced vision (Czerkas & Glut, 1982; Knight, 2005, p. 6-7). Later that year, Knight's mother succumbed to pneumonia.



Fig. 1. Charles R. Knight (1874-1953) emerged as a prominent paleontological artist of the twentieth century. In this 1899 photograph, Knight is shown sculpting a *Stegosaurus* model. (Wikimedia Commons.)

Knight's father remarried Sarah Davis. At first, Knight's stepmother encouraged his artistic interest, but later became competitive and jealous (Knight, 2005, p. 10). Still, Sarah Knight initiated her stepson's artistic training, which took him from Froebel Academy to Brooklyn Collegiate and Polytechnic Institute, to the Metropolitan Art School. At age 16, Knight was enrolled in drawing classes at the Arts Students League. His first employment as an artist was at J & R Lamb, where Knight made watercolor sketches for the stained-glass windows. Following his father's death in 1882, Knight became a freelance illustrator for magazines, including *Harper's* and *McClure's* (Knight, 2005).

2.1 An Early Interest in 'Cave Men' and Animals

At the Art Students League in the 1890s, Knight enhanced his sketches of live male models with Stone Age accoutrements – including loin cloths, spears, and a long spit with roasting ribs (Czerkas & Glut, 1982). Besides his formal art training, Knight found opportunities to learn about and draw animals. His long vacations were spent at the farm of family friends, the Hazells, as well as Peck's farm at Newton. When in New York City, Knight sketched animals at the Central Park Zoo (Knight, 2005; Czerkas & Glut, 1982). He also continued to visit the American Museum of Natural

History. His friendship with the taxidermist John Rowley (1866-1928) led to his first paleontological artistic reconstruction. A museum paleontologist, Jacob Wortman (1856-1926), asked Rowley to recommend an artist who could reconstruct an

extinct animal from its fossil remains. Rowley recommended Knight. In 1894, Knight produced his first paleontological reconstruction, *Elotherium* (Fig. 2).

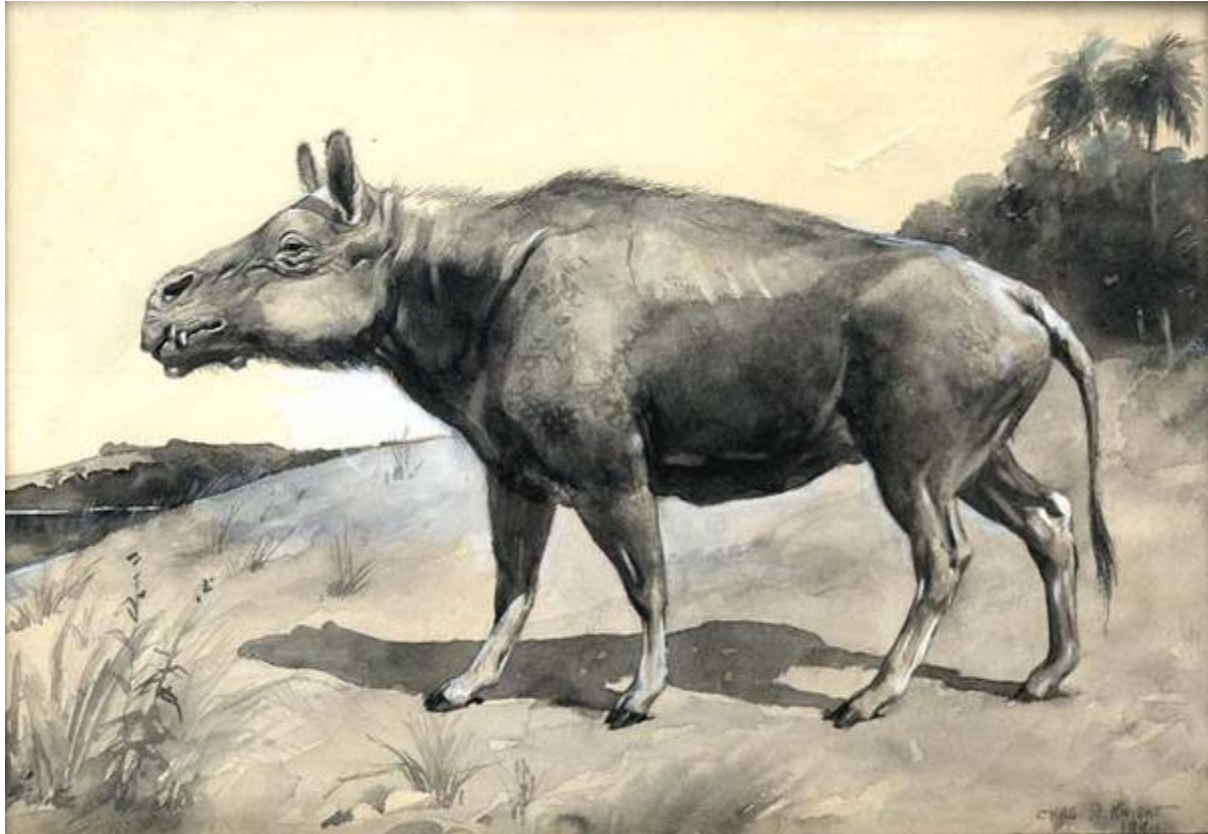


Fig. 2. Knight's first paleontological reconstruction was *Elotherium*, for American Museum of Natural History paleontologist Jacob Wortman. (Wikimedia Commons)

Another pivotal event for Charles Knight occurred in 1896, when he met Henry Fairfield Osborn (1847-1935), a professor at Columbia University who became the first curator of the vertebrate paleontology department at the American Museum of Natural History before eventually becoming Museum President (Milner, 2012; Knight, 2005, p. 40). Osborn introduced Knight to his mentor, Edward Drinker Cope (1840-1897) of the dinosaur Bone Wars fame (Clary *et al.*, 2008). Cope was on his deathbed, but spent several days with Knight, during which he vividly described and sketched what he thought the extinct animals might look like when alive—and how they might behave. Knight later turned these discussions and sketches into paintings, including *Leaping Laelaps*

(now *Dryptosaurus*) and *Dimetrodon* and *Edaphosaurus*. Knight's entrance into paleoart was dramatic, and well-received.

3. Charles Knight and American Museum of Natural History's Hominin Murals

Osborn wanted Knight to paint murals with prehistoric humans for the American Museum of Natural History's Hall of the Age of Man (Czerkas & Glut, 1982). Both Knight and Osborn researched these early hominins; Knight measured Neanderthal and Cro-Magnon skulls (Milner, 2012), and contacted experts, such as the Abbé Henri Breuil (1877-1961). When Knight questioned Breuil about the clothing of prehistoric peoples, Breuil

responded that these early humans likely wore no clothes. However, Osborn insisted that Knight's figures include clothing for modesty's sake.

Osborn supported eugenics and promoted a human lineage with a 'dawn man' that arose outside of Africa. The Second International Congress of Eugenics was held 22-28 September 1921 at the American Museum of Natural History, with Osborn providing the opening address (DeSalle, 2021-2022). Osborn advocated for racial politics, and had an agenda for prehistory (Rainger, 1977). Therefore, it is not surprising that Osborn wanted Knight's murals to display two distinct types of

early hominins: the shorter, brutish Neanderthals, whose skin coloration was based on Australian aborigines, and taller, lighter skinned and artistic Cro-Magnons, which were presumably our direct ancestors (Milner, 2012; Sommer, 2010). In 1920, Knight painted the Neanderthal Flintworkers of Le Moustier Cavern, Dordogne, France (Fig. 3), and the Cro-Magnon Artists of Southern France of the Font-de-Gaume grotto, Les Eyzies-de-Tayac (Fig. 4). Knight's third mural painting featured Early Stone Age Man, a Neolithic community. He later wrote that with the Neolithic community: «*We see... human beings, much like ourselves, in the first phases of civilization* » (Knight, 1935, p. 118).



Fig. 3. In 1920, Knight painted the Neanderthal Flintworkers of Le Moustier Cavern for the American Museum of Natural History. Note the posture and skin coloration of the Neanderthals. (Image #ptc 618, American Museum of Natural History Library)

Knight's paintings were not well received by everyone. J. Howard McGregor (1872-1954) of Columbia University criticized Knight's Neanderthal. On 7 January 1921, Knight wrote to Osborn that McGregor's opinions «*were entirely gleaned from a casual look at the sketch as he had never seen the large painting. This latter is, of course, not completed and my own ideas on the subject have not yet been worked out* » (Czerkas & Glut, 1982, p. 28-29). Knight remarked in the same letter that he would «*welcome any criticism from competent judges, but the artistic problems are so great that I would appreciate your letting me puzzle them out*

myself, as these problems can only be solved by an artist who should, of course, be primarily capable to producing a work of art which only comes from long and arduous study, and naturally this line of study has not been pursued by any other than the artist » (Czerkas & Glut, 1982, p. 29). Knight's reaction to McGregor's critique is consistent with his later interactions with Field Museum scientists, with whom he had a synergistic tension during the construction of the Field Museum murals, his largest paleoart commission (Clary, 2021).



Fig. 4. Knight also painted the Cro-Magnon Artists of Southern France of the Font-de-Gaume grotto, Les Eyzies-de-Tayac in 1920 for the American Museum of Natural History. Note the skin and hair coloration of the early artists. Knight's cave painting depicts a line of mammoths, which Knight later learned was incorrect. (Image #ptc 5375, American Museum of Natural History Library)

4.. Charles Knight and Chicago's Field Museum

In 1926, Knight received a \$140,000 USD commission to produce 28 murals for the Field Museum of Natural History in Chicago¹; the staggering sum is equivalent to \$2.3 million USD today. Although Knight's Field Museum murals would not include early hominins, Knight's interest in prehistoric humans continued. He became friends with Field Museum anthropologist Henry Field (1902-1986), the great nephew of the museum's founder Marshall Field (1834-1906), and nephew of the museum Director Stanley Field (1875-1964). Henry Field sponsored Charles Knight and his family (wife Annie, daughter Lucy) to travel to paleolithic sites in Les Eyzies, France and Altamira, Spain. Knight was to produce four paintings

of the sites for Henry Field, at a commission of \$1500 USD (now equivalent to \$25,000 USD).

Knight was deeply impressed with the Cro-Magnons as the first naturalist-artists (Milner, 2012) and mural masters (Knight, 1949, p. 251). Knight later reflected: «*It was, therefore, with a feeling of deep emotion that I pondered on the tremendous changes that had taken place in the world since these drawings were traced by his firm and clever fingers* » (Knight, 1935, p. 116). In 1927, Knight was able to view in person and paint the landscapes of Le Moustier (Fig. 5), Font de Gaume (Fig. 6), and Cap Blanc; he later produced the Swiss Lake Dwellers in 1929, which were «*taken directly from the small models in Zurich* » (Knight to Henry Field; Henry Field Correspondence, 9 December 1929)².

¹ The Field Museum in Chicago has existed under several different names. Founded as the Columbian Museum of Chicago, it is referenced as the Field Museum of Natural History here since this was its official name when Knight's commission was active.

² All quoted material between Charles Knight and Henry Field are from the Field Museum's archives unless otherwise noted. Archived materials examined include Henry Field Papers Prehistoric Man Correspondence 1920-1950, the Director's Papers General correspondence, and the Henry Field Near East Correspondence 1920-1950. Punctuation and emphasis included in the direct quotes are reproduced from the original documents.



Fig. 5. Henry Field sponsored Knight's visit to the European sites of prehistoric humans, and he commissioned Knight to paint small oil landscapes. This 1927 painting of Le Moustier was one of five produced for Field. (© The Field Museum, Image No. A24457_203996_Overall, Cat. No. 203996, Photographer Jamie Kelly)

Although Knight would not paint murals of Cro-Magnons or Neanderthals for the Field Museum of Natural History, he corresponded with Henry Field and offered his opinions and advice on the museum's early human exhibits. Henry Field was assembling The Hall of Man, whose dioramas he intended to show progression of prehistoric peoples, from Chelean, Acheuleen, Mousterian (including a Neanderthal skull from Le Moustier) to Aurignacian ('Old Man of Cro-Magnon'), to the Swiss Lakes Dwellers. In the 8 typed pages of the Proposed Plan for the Hall of Prehistoric Man by Henry Field 1927, Field wrote: «*The painted background at the northeast end of the hall... will show a Swiss Lake Dweller village with the water in the background and the boats setting out on a fishing trip with mountains in the background, with their*

snow-capped peaks and the horizon all lit up by that pinkish glow so characteristic of Switzerland at dawn. This will symbolize the dawn on history. » Field spared no expense. He purchased duplicate models for his exhibits from Dr. Krantz in Bonne, contracted Frederick Blaschke (c. 1881-1938) to make the hominin figures for the dioramas, and Malvina Hoffman (1865-1966) to produce sculptures of the various races of humans; Field accepted that there were more than one hundred (104) races. Interestingly, Field criticized the work of Knight's earlier nemesis, McGregor: «*Furthermore, the inaccurate reconstructions by McGregor in Stanley Field Hall detract seriously from the brilliant work of Mr. Blaschke, in Hall C, since these are bound to cause confusion in the mind of the public* » (Henry Field, 10 August 1933).



Fig. 6. Knight painted the landscape of Font De Gaume, Les Eyzies, Dordogne in 1927 for Henry Field. (© The Field Museum, Image No. A24457_203999, Cat. No. 203999, Photographer Jamie Kelly)

Throughout the construction of the Hall of Prehistoric Man, Charles Knight continued his correspondence with Henry Field. When Field wrote to Knight (7 May 1929) that «*Blaschke is here and has really done a magnificent piece of work in the entire family group of Le Moustier*», Knight cautioned Field: «*Be careful that Blaschke makes striking compositions if possible as it is not his long suit to do so—though he models the individual figures very well*» (Knight to Field, 9 December 1929). Knight and Field also shared news of contemporary anthropological discoveries. Field noted that he was «*interested in the article on the Taung skull in the Scientific American to which you called my attention*» (Field to Knight, 12 October 1929).

Field's vision for Neanderthal and Cro-Magnon reconstructions aligned with Osborn's and Knight's. In a directive to Berthold Laufer (1874-1934), Field suggested slight modifications to the Neanderthal figures including more primitive ears

for the adult male and reduction of abdominal muscles. However, he also advocated for a 'less grotesque' expression on the baby's face (Field to Laufer, 11 November 1931).

In 1929, two Neanderthal dioramas were installed in the Hall of Historical Geology at the Field Museum (Fig. 7). Field reflected: «*This was the first life-size reconstruction of prehistoric man ever made in a museum. Some months later, Madam Tussaud's in London did us the honor of attempting to copy Le Moustier*» (Field, 1953, p. 143). In 1933, the Hall of the Stone Age of the Old World opened with 8 prehistoric diorama scenes, including the lighter skinned Cro-Magnon artists of the Aurignacian Cave Art from Gargas Cave, France (Fig. 8). The exhibit highlight was the skeleton of the Magdalenian girl from the Cap Blanc Rock Shelter that was acquired by the Field Museum in 1926. In the 1970s, the Neanderthal figures were recognized as being inaccurate, including some of the figures being based on diseased human

remains. Artist Joseph Krstolich replaced the Neanderthal figures (Fig. 9), but the dioramas persisted only until 1994, when the Hall of the Stone Age of the Old World was dismantled because of

its scientific inaccuracies. However, the Magdalenian girl skeleton remains on display within the Field Museum's Griffin Halls of Evolving Planet.



Fig. 7. The Field Museum unveiled two dioramas of Neanderthals in 1929, for which Blaschke constructed the figures. Note the skin coloration, as well as the posture of the models. (© The Field Museum, Image No. CSA76895_Ac)



Fig. 8. The Field Museum unveiled additional dioramas in 1933 for the Hall of the Stone Age of the Old World. This diorama depicted a lighter skinned Cro-Magnon artist and cave art. (© The Field Museum, Image No. CSA76950c, Photographer Ron Testa)



Fig. 9. In the 1970s, Joseph Krstolich replaced the Neanderthal diorama figures because they were inaccurate. Note that the skin coloration is still dark, but the posture of the models is erect. (© The Field Museum, Image No. A102513c, Photographer Ron Testa)

5. Charles Knight's Subsequent Work on Prehistoric Humans

After Knight completed the Field Museum commission, he lost his mentor and advocate at the American Museum of Natural History. Henry Fairfield Osborn died in 1935, and Knight never received the American Museum of Natural History commissions or projects that he did when Osborn was alive. Some other commissions followed, with the Natural History Museum of Los Angeles County (1944-1946), and a final mural at the Everhart Museum of Natural History, Science and Art in Scranton, Pennsylvania. Many of Knight's artistic renditions of prehistoric humans were featured in 1930s-1940s books and magazines.

When he visited the paleolithic sites in France, Knight must have recognized that his American Museum of Natural History mural inaccurately depicted a cave decorated with a line of woolly mammoths; the original cave art featured a superimposed mammoth over a line of bison. The Cro-Magnon painting was corrected in Knight's 1942 *National Geographic* article (Cloughly & Tattersall, 2002; Knight, 1942, plate XXIII). Knight provided accurate details of the actual cave paintings in this new art, but his prehistoric humans continued as savage, dark-skinned Neanderthals and artistic,

lighter-skinned Cro-Magnons. These stereotypes had not yet been counteracted through advancing scientific knowledge. The hominin inaccuracies were perpetuated since other artists used Knight's *National Geographic* article as reference for their own art assignments (Czerkas & Glut, 1982, p. 33).

Both the illustrations and narrative in Knight's *National Geographic* article reinforced the stereotypes. Knight drew brutish Neanderthal figures with spear, bone, and rocks defending their cave. He wrote: «*Their women and a child cower in the cave behind them... These primitive men had low foreheads, thick necks, short legs, and big hands and feet*» (Knight, 1942, plate XXII). Knight further categorized Neanderthals as «*unprepossessing little fellow*» and «*tough and tenacious little savages [that] were perhaps the dominant race in Europe for many thousands of years*» (Knight, 1942, pp. 181-183). Similarly, the artistic, statuesque Cro-Magnon continued. Knight showcased light-skinned Cro-Magnons, including a red-haired female, with the artist superimposing a mammoth over the line of bison (Knight, 1942, plate XXIII). He wrote: «*The Cro-Magnons, in contrast to the Neanderthals, were a tall, long-limbed and rather spare people, much like some of our Indian tribes*» (Knight, 1942, p. 183). Knight's praise continued:

«No primitive people since their day, with the possible exception of the recent Bushmen of southern Africa and certain Australian tribes, have attempted the representation of animals with such excellent artistic results » (Knight, 1942, p. 184).

Knight's 1949 book, *Prehistoric Man: The Great Adventurer*, sustained the Neanderthal stereotype. Neanderthals were depicted as spear-carrying savages that were caught by a blizzard, and as a group taking refuge in a cave while a large feline waited to pounce from above. Knight wrote that Neanderthals were «low browed, squat, grotesque, savage, distinctly limited in his capabilities » (Knight, 1949, p. 147). Knight continued: «He was short, stocky, rugged... big-headed and clumsy... All in all, he was just what we might have expected of such an ancient creature» (Knight, 1949, p. 154).

6. Discussion

Additional data have counteracted prejudicial, stereotypical views held by Knight, Osborn, Field, and their contemporaries. The Neanderthal genome revealed that *Homo sapiens* interbred with

Neanderthals (Green *et al.*, 2010), and that interbreeding had begun 100,000 years ago (Kulhilm *et al.*, 2016). Modern scientific understanding completely reversed Knight's depiction of skin color, too. Neanderthals were lighter-skinned hominins, with some possessing red hair (Lalueza-Fox *et al.*, 2007). The Cro-Magnons who migrated northward to encounter the Neanderthals were tall and dark-skinned; multiple expansions from Africa are indicated by genetic research (Vallini *et al.*, 2022). Scientists acknowledge Knight's earlier portrayals as inaccurate. The Cro-Magnon mural (Fig. 4) was removed from display at the American Museum of Natural History (although it remains conserved in a museum repository). However, Knight's Neanderthal mural (Fig. 3) remains on display in a hallway at the museum. More recently constructed models continue to be displayed and promote the earlier misconceptions. French sculptor Elisabeth Daynes' 2013 reconstruction of the Magdalenian Girl perpetuates the Cro-Magnons as light-skinned humans (Fig. 10). The sculpture is on display at the Field Museum of Natural History, as well as Abri du Cap Blanc in Dordogne, France.



Fig. 10. The highlight of Henry Field's 1933 Hall of the Stone Age of the Old-World exhibit, the skeleton of the Magdalenian girl, remains on display in the Field Museum's Evolving Planet exhibit (left). Daynes' sculpture reconstruction depicts the woman as light-skinned (right). (Photographs by R.M. Clary)



Knight's artistic reconstructions of Neanderthals and Cro-Magnons seem logical because of contemporary interpretations and scientific understanding. Knight depicted prehistoric humans based on information that he learned from scientists, as well as his own research in preparation for his paintings. The errors include inaccurate

heights of the Neanderthals and Cro-Magnons in *Science Monthly* (Knight, 1921), and Knight continued to provide value judgments and reference "lowly Neanderthals" and the "more perfect man-type" Cro-Magnons, as well as prejudicial views toward non-Western peoples (Knight, 1935). Of Le Moustier cave, Knight wrote: «One may imagine

these primitive little fellows... eagerly scanning their limited horizon for game or possible human enemies—perhaps men of their own race, or still more to be dreaded, the tall powerful forms of the Cro-Magnon people who were later to succeed them » (Knight, 1935, p. 108)

We can consider whether Knight created paleoart according to the directives of scientists, and that his opinions emerged solely from the authorities. That scenario is contradicted, however, by Knight's interactions with the Field Museum scientists, Oliver C. Farrington (1864-1933) and Elmer S. Riggs (1869-1963). On multiple occasions, Knight challenged these scientists' critiques and even brought in his own experts to support his alternative views. The Field Museum correspondence between Knight and the Director documented many of these situations; the position of the *Zeuglodon* (now *Basilosaurus*) tail provides a particularly illuminating interaction (Clary, 2021). In the final mural resolution, Knight painted the Eocene whale's tail as requested, but not before he engaged in multiple rounds of argumentation.

With the depictions of prehistoric humans, Knight readily accepted the contemporary views on early hominins; he adopted Osborn's views on the Dawn Man. In 1949, Knight wrote: «*Some-where, perhaps in Central Asia, changes took place in our anatomical form which enabled the once lowly Neanderthal and Peking races of humanity to so tremendously advance their personalities and physical status that the truly manlike*

type as exemplified in the Cro-Magnon people at last became an actuality » (Knight, 1949, p. 158). Knight accepted the Asia origin, not the Africa one. Ironically, his comments toward modern Asians were derogatory in some of his publications (Knight, 1935). Knight claimed: «*Although the Chinese were very early seekers of petrified objects, it is evident that their activities in no way contributed to any real knowledge concerning them* » (Knight, 1935, p. 10).

Henry Field offered insight as to a possible reason for stereotypical depictions of more brutish, dark-skinned Neanderthals and artistic, light-skinned Cro-Magnons. In his biography, Field wrote: «*When completed, these two Halls [Pre-historic Man and Races of Mankind] would be the most popular, not only in the museum, but on any continent. For man is more interested in himself than anything else. The finest dramatic presentations will draw the greatest crowds for decades to come* » (Field, 1953, p. 132). Both Field and Knight promoted images of early hominins that supported the racial stereotypes of the early twentieth century. The more artistic, advanced of the prehistoric peoples, the Cro-Magnon, would reflect the Caucasians that segregated and discriminated against the formerly enslaved African peoples. Knight's murals and the Field Museum's dioramas reflect not only the contemporary scientific views, but also the cultural and societal constraints during which the art was created (Clary & Wandersee, 2011; Clary et al., 2021).

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