

Bringing our ancestors back: an Art to serve Science

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ABSTRACT

In France, the Atelier Daynès combines forensic approach, technology, scientific research and art to create unique hominid reconstructions and show a large public the last stand of our knowledge on the Human Evolution. Here the most probable caricature of the face is not sufficient for the public to understand our past. Reconstructions participate in the transmission of a better knowledge of the physical appearance of these men of the past and allow us to be aware that Man has accomplished during the past millions years extraordinary things, reaching sometimes artistic perfection. Reconstructions must be used as a pedagogic tool, an initiatory path through which emotion leads to reflection, to questioning our origins.

Key words:

hominid reconstruction, human evolution, pedagogic tool.

RIASSUNTO

Il ritorno dei nostri antenati: l'arte al servizio della scienza.

In Francia l'Atelier Daynès crea ricostruzioni di ominidi uniche che permettono di comunicare al grande pubblico le ultime conoscenze dell'evoluzione umana, utilizzando differenti approcci (medico legali, tecnologici, di ricerca scientifica e artistici). La più probabile rappresentazione della faccia non è sufficiente al pubblico per comprendere il nostro passato. La ricostruzione permette di trasmettere la miglior conoscenza dell'aspetto fisico di questi uomini del passato e la consapevolezza che l'uomo ha vissuto cose straordinarie nei suoi passati milioni di anni. Le ricostruzioni, realizzate anche con perfezione artistica possono essere utilizzate come strumento pedagogico, una traccia attraverso cui le emozioni portano a riflettere e interrogarsi sulle nostre origini.

Parole chiave:

ricostruzione di ominidi, evoluzione umana, strumento pedagogico.

Who never wondered what our ancestors looked like and if their faces were similar to ours? This question and many more fascinate and puzzle the scientists as well as the general public. If we compare the different representations of human and early human subspecies over the years, we can notice that they have changed a lot as they were influenced by our preconceptions and by the scientific knowledge at different specific periods. Neanderthals, for instance, were often represented as brutish and bestial people. This depiction started fading out when scientists made important discoveries. Evidence of some advanced cultures helped, in some ways, rehabilitate them.

Reconstructing a face means going on a journey through time and space. It involves following man during the past seven million years and understanding the role played by climate and many other environmental factors on human evolution.

Each reconstruction is the produce of constant and close collaborations with the international scientific community (anatomists, paleontologists, anthropo-



Fig. 1. Reconstitution of a Neanderthal

woman based on the skull of Saint-Césaire (36.000 years B.P.). Set up of craniometrical marks (© 2007 P. Plailly/E. Daynès// Eurelios - Reconstruction: Atelier Daynès Paris).

Ricostruzione di una donna neandertaliana basata sul calco del cranio di Saint-Césaire (36.000 anni B.P.). Identificazione dei punti craniometrici.

logists, paleopathologists, etc.) during which the artist intuition intermingles with the convictions of the scientists.

All reconstructions are based on the architecture of the skulls. Depending on what is available, original casts, stereolithographic casts and/or post-cranium are provided. Reconstructing a face is a risky task as it is an esthetical and most of all a scientific challenge. The objective is to recreate a unique and specific human or pre-human face from the remains of its thousand- or even million-year-old skull and stay as close as possible to its physiognomy.

There are two main steps in the reconstruction process. The characteristics of the fossil family are separated from those specific to the individual. The whole process is made in accordance with the latest scientific findings and data known at the time of the instigation of the project.

The cast of the skull provided must be of outstanding quality and as complete as possible. The more complete the cast, the more information gathered, the more precise the reconstruction. Aside from skulls' shape and proportions, which allow to get close to the original face, it is absolutely necessary to combine anthropometrical and morphological data with some other key parameters: origin (fossil family), date of the skull, age of the individual when he/she died, sex, possible pathologies and diseases,



Fig. 2. Ecorche - Laying down of muscles
(© 2007 P. Plailly/E. Daynes// Eurelios - Reconstruction: Atelier Daynès Paris).
Scorticato. Posa dei muscoli.



Fig. 3. Complete face made of clay
(© 2007 P. Plailly/E. Daynes// Eurelios - Reconstruction: Atelier Daynès Paris).
Faccia completa realizzata in argilla.

distinctive characteristics in comparison to other fossils of the same group, diet, way of living, and finally climate, natural environmental setting and culture that surrounded the individual.

Post-cranium elements will give guidelines to the height and the corpulence of the individual.

The ecorche is the most important step of the reconstruction. When dealing with Neanderthal or sapiens periods, I specifically work with Dr. Jean-Noël Vignal, a specialist in judicial identification and an experimented forensic anthropologist. His methodology is to use the cast of the skull as a starting point to carry out anthropological study and make the skull "speak". Using the State of the Art technology to reveal the mystery of the fossils, this behind-the-scene expert is able to measure the thickness of the soft tissues (muscles, fat and skin) and even detect the tiniest sign of the wearing process of bones. These measurements are materialized by markers directly placed on the cast of the skull to show maxima and minima of 18 cranial references and help confer the face its shape and curves (fig. 1). These markers are very specific to each case studied as they incorporate variables such as the age and the corpulence of the individual.

Regarding more ancient periods, I have to work directly on the bone structure in very close collaboration with scientists specialized in comparative anatomy.

The sculpture can then begin with the laying of muscular tissues over the skull. This stage is crucial. It enables to visualize the face proportions and thus verify the coherence of the result (fig. 2).

The next step is the positioning of skin layers. As the individual is still totally lacking signs of life, I will, little by little, confer the newly born ancestor a "spirit", that is to say an identity. Thorough



Fig. 4. Pierrette de Saint Césaire (© 2007 P. Plailly/E. Daynes// Eurelios - Reconstruction: Atelier Daynès Paris).

Pierrette di Saint-Césaire.

awareness is given to wrinkles and texture of the skin, and extreme attention to the look and expression taking into account any eventual pathologies or diseases (fig. 3). The presence of the ancestor is felt real.

Of course, if the shape and proportions of the face and of the body are determined as objectively as possible, some characteristics, like the color of the eyes, of the skin and of the hair can only be approached with subjectivity. The color of the skin, for instance, even if decided without certainty, will be chosen according to the environmental setting.

I must confess to have self-censored many times, acting with disciplined scientific caution when dealing with body tattoos or paintings.

Once the reconstructions are achieved, they complete the collection of a museum and are displayed for the public.

Science is of course the base to understand and decrypt Human Evolution. However, art makes possible to give our ancestors a face (fig. 4).

Through the use of scientific research, technological innovations and art, I practice my discipline today to show the large public the last stand on our knowledge of the Human Evolution and to create a physical illusion to fill the gap of the millions of years that separate today from the Dawn of Man.

Indeed, I hope and wish through my reconstructions to participate in one way in the transmission of a better knowledge of the physical appearance of these men of the past and allow us to be aware that Man has accomplished during the past millions years extraordinary things, reaching sometimes artistic perfection (Chauvet cave).

Reconstructions must be used as a pedagogic tool, an initiatory path through which emotion leads to reflection, to questioning our origins.

But a reconstruction is not totally achieved until the appropriate museography to display the subject(s) is complete. Even if the face of our ancestors has been revealed, it is essential to keep a certain amount of mystery. Soft lighting in the display could do the trick.