

Aesthetics at its very Limits: Art History Meets Cognition

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ABSTRACT

The aim with this master thesis is to prove that prehistoric art is worth the Westerners attention, not the least the attention of art historians. I am interested in placing prehistoric art/cave art in the spotlight, by reminding readers about the stunning craftsmanship and timeless beauty these paintings convey. I will do this by participating in an on-going scientific discourse, which reflects the wide range of scientists participating in the mystery we are facing: who painted this and why?

I am interested in how our species started creating images, and also how our ancestors, who had never seen a painting before, were able to paint beautiful murals. The challenge alone in converting three-dimensional motifs to two-dimensional images is impressive. In terms of brain development, such a skill proves that these early *Homo sapiens* had a fully developed parietal cortex, the part of the brain perceiving 3D, perspective etc.

My approach differs substantially from what is common in art history, quite simply by the fact that there is no common agreement as to whether my material is classified as art or not, at least in a Western sense of the word art, and all theoretical ways to explore art derives from western philosophical Aesthetics. I therefore prefer the word *artification*, as Ellen Dissanayake codes it. I am particularly interested in art in the perspective of cognitive development because findings within this research area are claiming that aesthetic experiences arise from the same neurophysiological processes that comprise the rest of our cognitive-perceptual-emotional life.

INTRODUCTION



Fig. 1 Paintings in Game Pass Shelter, Drakensberg, South Africa

There really is no such thing as Art. There are only artists. Once these were men who took coloured earth and roughed out the forms of a bison on the wall of a cave; today some buy their paints, and design posters for hoardings; they did and do many other things. There is no harm in calling all these activities art as long as we keep in mind that such a word may mean very different things in different times and places, and as long as we realize that Art with a capital A has no existence. For Art with a capital A has come to be something of a bogey and a fetish. You may crush an artist by telling him that what he has just done may be quite good in its own way, only it is not *Art*. And you may confound anyone enjoying a picture by declaring that what he liked in it was not the Art but something different.¹

E. H. Gombrich, *Story of Art*

As you approach the Drakensberg Mountains in KwaZulu-Natal, South Africa, you will see its tall and majestic mountain range stretching out for a long distance. After hiking up some green slopes from Kamberg camp, you notice a steep rock wall crowned by the mountaintop. This place is called Game Pass Shelter, and borders with the African country Lesotho (Fig. 2). This high wall with its cliff overhang often serves as a protection from weather and gives a spectacular view.

As you turn towards the mountain you witness highly detailed paintings in ochre, with great compositions, sometimes utilizing the shape and dynamic of the rock itself to form the paintings. Turning around, you have a spectacular view of the flora and fauna of the Drakensberg area, a view into the external world, while facing away from an internal one on

¹ E. H. Gombrich, *The Story of Art*, [16th ed.] Pocket ed. ed., Phaidon Paperback (London: Phaidon, 2006), 21.

the rock wall. I find it reasonable that anyone with a creative mind would regard this wall fitting for paintings. It is a natural gallery (Fig. 1), a showcase of display, a prehistoric Louvre, a place of inspiration and reflection and this whole mountain area stands today as an UNESCO site with 665 rock art pieces.



Fig. 2 Map of some of the rock art areas in the Drakensberg

I went to South Africa in November 2015 to visit the Rock Art Research Institute (RARI) and to talk with David Lewis-Williams, who is professor in Cognitive Archaeology and the director of RARI at the University of Witwatersrand, Johannesburg. He is famous for his studies on the San Bushmen in South Africa and their rock art, such as those in Game Pass Shelter (Fig. 1). By studying these paintings, he has discovered that although they are not nearly as old as those of the Upper Palaeolithic era, they can possibly serve as a link to help explain the mystery of prehistoric paintings and how they were produced. The model presented by Lewis-Williams and Dowson in 1988² presents an alternative to how we can understand the San bushman rock paintings. He claims to have found the meaning and the connection between the actual paintings and San mythology. This includes *altered states of consciousness* (ASC) and visual phenomena that I will explain in greater detail in chapter 5.

It seems perhaps unconventional to write about prehistoric art in an art history discipline in Northern Europe. In South Africa, however, it is normal for art historians to engage in research of rock art. Yet, this meeting of disciplines is shifting slightly in our hemisphere.

² J. D. Lewis-Williams and T. A. Dowson, "The Signs of All Times: Entoptic Phenomena in Upper Palaeolithic Art," *Current Anthropology* 29, no. 2 (1988).

The reason for my journey to South Africa, and for rock art research in general, is that I am very curious about a field that was almost absent from my education as an art historian in Norway.³ Are we *lost* in a European tradition of western philosophical aesthetics? The question arises: are the cave paintings art, or are they solely artefacts made by the primitive *Homo sapiens sapiens*⁴, not to be included in Art History proper? Although there are a few universities that offer prehistoric art programs, such as University of Denver and University of Barcelona, it does not seem to be a widespread trend in art history degrees.

So who are the experts on rock art research? These are archaeologists and cognitive archaeologists, studying aspects of cognitive developments as reflected in rock art, compared with research on the evolution of the human brain (such as Lewis-Williams). They are neuroscientists (such as Derek Hodgson, chapter 5), evolutionary psychologists and neurobiologists whose research in pre-history is directly based on and tested out in a modern laboratory with brain scanning (for instance Marcos Nadal, cf. chapter 2), and they are, broadly speaking, specialists in *neuroaesthetics*, studying how our brain reacts to aesthetic stimuli (such as Semir Zeki, who, in 1999, coined the word *Neuroaesthetics*, and, again, Nadal), just to mention very few of the actors in the field.

How, then, can art historians contribute in rock art research? The clue is that we have to approach rock art differently from how we normally approach art in the West. This has to do with such basic matters as the definition of art itself. There is particularly one scholar, Ellen Dissanayake, who has made a substantial contribution to avoid the Western Kantian and *disinterested* mind set in dealing with artistic expressions or artefacts. Instead of the word *art* she uses *artification*, things that people do, referring «to the universally observed penchant of human individuals (and groups) to make ordinary reality extraordinary.»⁵ Through this re-definition, the term *artification* will include, for instance, rituals, both in our own Western world, in tribes, the use of masks, dancing, drumming, as well as the production of artefacts in pre-modern societies. She suggests that artists in all different media can simplify, formalize, repeat, exaggerate and elaborate ordinary materials bodies, surroundings, times,

³ None of the art history courses in Norway offers lectures in prehistoric art. That means the art history bachelor degrees at UIB, UIO, UIA, and UIT. To find out, visit their websites.

⁴ *Homo sapiens sapiens* (the double *sapiens*) is the way to clarify that this species is different from *H. Sapiens neanderthalensis*.

⁵ E. Dissanayake and S. Brown, "The Arts Are More Than Aesthetics: Neuroaesthetics as Narrow Aesthetics," in *Neuroaesthetics*, ed. M. Skov and O. Vartanian (Amityville, N.Y.: Baywood, 2009), 49.

beats, body movements, motifs and ideas, which are all a result of making these things more than ordinary. This would result in the artist receiving attentions, sustain interest and create emotion in their audience. She finds that the uncertainties of life lead to emotional investment and is the underlying factor for human invention of religion and its accompanying behaviour expression, which she calls *artification*.⁶

The artification hypothesis conceptualizes art differently from most other schemes – as a behaviour (*artifying*), not as the results (paintings, carvings, dances, songs or poems) or their putative defining qualities (beauty, harmony, complexity, skill). By considering human art as something that people do, it is possible to ask what adaptiveness might be.⁷

The people in the cave did not paint smiley faces or simple drawings. Why? I find that most of the prehistoric cave paintings are feats of great artistic quality, reflecting an extraordinary high creativity; according to doctor Robin Carhart-Harris et al.⁸ the brains of archaic Homo sapiens seem to have been closer to what can be defined as primitive consciousness. Here we could name such concepts as *altered states of consciousness* (cf. Lewis-Williams' theory of shamanism, chapter 5). The evidence of this will be highlighted in chapters 5 and 6.

In the quote from art historian Ernst Gombrich's *Story of Art*, which introduces my thesis, he stresses the need of a different frame of mind when it comes to studies of pre-historic artworks. And, as I will maintain, we find such a new approach in Dissanayake's term *artification*. It is worth to remind ourselves about the choice of words Gombrich uses in the above quote: «there really is no such thing as *Art*. There are only artists». ⁹ This quote serve as a backdrop to my whole thesis, and sparks the idea that artists has always been around, while *Art*, on the other hand, is perhaps an unfit term to what it stands for, although we need to discuss what it could be. I will now list a few reasons why prehistoric art should have a more prominent position in current art history:

⁶ E. Dissanayake, "The Artification Hypothesis and Its Relevance to Cognitive Science, Evolutionary Aesthetics and Neuroaesthetics," *Cognitive Semiotics* Fall, no. 5 (2009): 155.

⁷ *Ibid.*, 156.

⁸ R. L. Carhart-Harris et al., "The Entropic Brain: A Theory of Conscious States Informed by Neuroimaging Research with Psychedelic Drugs," *Frontiers in Human Neuroscience* 8 (2014).

⁹ Gombrich, *The Story of Art*, 21.

1. According to author and researcher Lewis-Williams *inter al.*, we are anatomically the same as we were 40 000 years ago.¹⁰ It appears that humans are, by nature, creative and have always been so.
2. By learning about ancient humans and our ancestors, we can learn more about ourselves today and about the human condition in general.
3. Claiming that cave art is primitive starts to become obsolete. Recent research confirms that even technically, they were able to depict horses in motion more perfectly than any of their artist descendants. From a study of Edward Muybridge's (1886) film of horses running, it has been confirmed that the so-called primitive cave man painted their leap almost correctly, with an error rate of 46,2% vs. that of 65,2% in works of art from the modern West.¹¹
4. According to rock art curator Pippa Skotnes: «(v)isuality is rock art's most important feature».¹² This statement alone is an important argument for a greater engagement by art historians in the caves.

I am interested in how our species started creating images, and also how our ancestors, who had never seen a painting before, were able to paint beautiful murals. The challenge alone in converting three-dimensional motifs to two-dimensional images is impressive. In terms of brain development, such a skill proves that these early *Homo sapiens* had a fully developed parietal lobe (Fig. 3), the part of the brain computing 3D, perspective etc.¹³

My approach differs substantially from what is common in art history, quite simply by the fact that there is no common agreement as to whether my material is classified as art or not, at least in a Western sense of the word art, and all theoretical ways to explore art derive from western philosophical aesthetics. I therefore prefer the word *artification*, as Dissanayake codes it, and I am particularly interested in art in the perspective of cognitive development because findings within this research area indicates that aesthetic experiences arise from the

¹⁰ Lewis-Williams and Dowson, "The Signs of All Times: Entoptic Phenomena in Upper Palaeolithic Art." David Lewis Williams *inter al*

¹¹ Table 1, Ch. 6; G. Horvath et al., "Cavemen Were Better at Depicting Quadruped Walking Than Modern Artists: Erroneous Walking Illustrations in the Fine Arts from Prehistory to Today (Erroneous Artistic Quadruped Walking Depictions)," 7, no. 12 (2012).

¹² P. Skotnes, "The Thin Black Line: Diversity and Transformation in the Bleek and Lloyd Collection and the Paintings of the Southern San.," in *Voices from the Past: /Xam Bushmen and the Bleek and Lloyd Collection*, ed. J. Deacon and T.A Dowson (Johannesburg: Wits University Press, 1996), 236.

¹³ On the relative expansion of the dorsal magnocellular visual stream, the "where pathway", as opposed to the ventral "what" pathway, see Orban et al., 2004; Barton, 2006; Nadal et al, 2009. On the expansion of the parietal lobes, see Bruner and Iriki, 2015.

same neurophysiological processes that comprise the rest of our cognitive-perceptual-emotional life.¹⁴

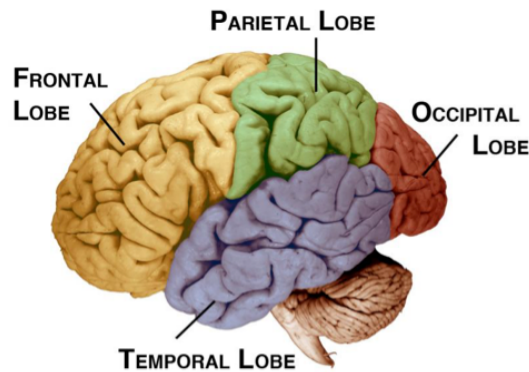


Fig. 3

In order to understand the concepts and research that will be presented in the later chapters it would be useful to present some of the important findings from the Palaeolithic period, the period that will be studied in this thesis. It is essential to be able to grasp the extension of the prehistoric periods and how quickly they evolved. My main objects of study will be the paintings from the Chauvet cave in Southern France and the San bushman paintings from South Africa. Despite the fact that the latter were produced much later, they are included in this thesis as they present a key to how we can learn more about older art. This means that my theoretical standpoint accords with that of Lewis-Williams and his neuropsychological hypothesis, because it shows us how we can radically learn more just by looking at the art and the cognition behind it; still, I will try to sketch a framework of how/ or whether art history proper may have access to the field of pre-historic *artifications*. My particular interest in the Chauvet cave springs from the abnormality in terms of ways of depiction that we find here, and also the early dating of the paintings: about 32,000 before present, hereafter labelled BP.¹⁵ As for the San bushman's paintings, Lewis-Williams assumes a contexts of them; and this approach will serve as a foundation for a further discussion in chapter 5 and 6. It is also important that we should keep in mind the difference in the artistic techniques involved in creating images or sculptures: In modern art history we learn of different methods of making art, such as oil paintings, tempera, frescoes, mosaics, etc., however, in prehistoric times, they had to craft their own tools, this will be explained more in chapter 1.

¹⁴ E. Dissanayake, *Homo Aestheticus : Where Art Comes from and Why* (Seattle: University of Washington Press, 1995), 140.

¹⁵ Before Present (BP) is a time scale used in geology. The "present" time always changes so its standard practice is to use 1 January 1950, which is also when radiocarbon dating first came in use.

What is the definition of *art*? Oxford dictionaries define it as: «The expression or application of human creative skill and imagination, typically in a visual form such as painting or sculpture, producing works to be appreciated primarily for their beauty or emotional power.»¹⁶ Based on this definition one would think this would include rock art like we saw in Fig .1; it showcases creative skill and imagination in the form of painting and are being appreciated for their beauty and also emotional power. But none the less, it does not appear like this. The definition of rock art is vaguer: «prehistoric man-made markings on natural stone».¹⁷ In my opinion this is a too simplistic definition and does not explain the complexity of this art realm. It seems that there are complications in the terms and definitions, and a starting point for my discussion will be to redefine or work with the concept of *art*, so that it will include far more than that of the Western tradition represented in our art galleries. The discussion on whether prehistoric objects should be called *art* or *artefacts* will be issued in chapter 2. The Canadian philosopher Thomas Heyd calls prehistoric artefacts *aesthetics at its very limits*,¹⁸ since both time difference and geographic location makes our comprehension of this *genre* of art very challenging.¹⁹

Did the paintings have meaning for the Palaeolithic people who made them and the people who observed them? Many theories have been suggested over the years since the first discovery of the paintings in Altamira cave in Spain (1879). Is the appreciation and creation of art a pan-cultural behaviour? And does this simply occur naturally in human development? Philosopher Stephen Davies argues that art may have evolved, not as a by-product but as a unique and important behaviour that has been fruitful for hominines over thousands of years.²⁰ Davies, along with Dissanayake, claims that art is not a random event in evolution. This will be highlighted in chapter 3.

Chapter 4 will introduce Nicolas Bullot and Rolf Reber's theory of the *Psycho-Historical Framework*²¹ in order to see if this can be applied to rock art? Following that I will

¹⁶ "Definition of Art," in *Oxford Dictionaries* (Internet).

¹⁷ "Definition of Rock Art," Visual Art Cork, <http://www.visual-arts-cork.com/prehistoric/rock-art.htm>.

¹⁸ T. Heyd and J. Clegg, *Aesthetics and Rock Art* (Aldershot: Ashgate, 2005), 4.

¹⁹ The title of my master thesis derives from Heyd's 'formula' on prehistoric art, explained in detail: chapter 2, p. 30-32.

²⁰ S. Davies, "Why Art Is Not a Spandrel," *The British Journal of Aesthetics* 50, no. 4 (2010).

²¹ N. J. Bullot and R. Reber, "The Artful Mind Meets Art History: Toward a Psycho-Historical Framework for the Science of Art Appreciation," *The Behavioral and brain sciences* 36, no. 2 (2013).

demonstrate how the *Horse Panel* from Chauvet cave can be a result of Dissanayake's *making special*.

In chapter 5 I will return to Lewis-Williams and his neuropsychological model in which he studies the relationship between universal neurophysiological patterns in the wiring of the human brain and San bushman belief/shamanistic rituals, which he further extrapolated to be applied on the paintings from the Upper Palaeolithic period. In order to compare the ethnography based on the San bushman and the hallucinations of the shaman or healer, he used data from laboratory experiments using hallucinogens. This model demonstrates the relation between ASC and the subjective interpretation of hallucinations, and how the cave paintings will seem to be the result of these visions. The model has been strongly criticised by many researchers, and it is not until recently that scientists outside the traditional rock art circles have thrown new and supporting light on the neuropsychological hypothesis and the shaman's presumed role in rock art paintings as well as in ASC in general (Froese et al., chapter 5).

How could our prehistoric ancestors be able to draw and paint such stunning paintings with a precise accuracy in every detail? Were the drawings a product of an altered state of mind? New evidence supports this view. Is it possible that the prehistoric people were highly creative artists? Chapter 6 will analyse the paintings in the cave in light of recent progress in the neuroscience of creativity

To quote Semir Zeki: «the function of art is an extension of the function of the brain».²² Thus it seems that the research of prehistoric art is possible in terms of neuroscience, because our brain is almost the same as it was 40,000 years ago. This makes it possible for us to draw parallels between now and then. If we gather art historians, archaeologists, anthropologists, neurobiologists and linguists around the same table, I believe that research in general will result in solid theories and we will reach a higher understanding of complex matters of high quality. A conference that occurred in 2014 at the University of Catania (Sicily) was called *Neuroaesthetics and Cognitive Poetics*. The goal of this conference was to establish a research network and a website for published articles where they are easily accessible. One of the keynote speakers was Zeki and in the article *Neurobiology and the Humanities* from 2014

²² S. Zeki, "Art and Brain," *Journal of Consciousness Studies* 6, no. 6-7 (1999).

he writes that «many of the critical questions now addressed experimentally by neuroaesthetics have been addressed in philosophical discourse for centuries».²³ This conference illustrated the popularity and the growing interest in these fields of research.

My goal with this thesis is to discuss how prehistoric art can be an arena for art historical research. I am interested in making prehistoric art relevant for today's audiences, by reminding readers about the stunning craftsmanship and timeless beauty these paintings convey. I will do this by participating in an on-going scientific discourse, which reflects the wide range of scientists participating in the mystery we are facing together, who painted this and why? (Fig. 4)



Fig. 4 The Lions in Chauvet Cave

²³ "Neurobiology and the Humanities," *Neuron* 84, no. 1 (2014).

CHAPTER 1

OUT OF AFRICA – A BRIEF HISTORY OF PREHISTORIC ART

«I do not believe evolution, as we know it can explain art, but a deeper consideration of art can enhance our understanding of evolution.»²⁴

David Rothenberg

1.1 WHAT IS ROCK ART?

Thomas Heyd considers rock art strongly detached from the conventional (and Western) label of art; he holds *rock art* to be the name conventionally given to marks, made by human beings on rock surfaces, perceived as pictures or representations around the world, in many different cultures, stretching from prehistory into the present. The term rock art includes paintings, stencils, and drawings that add material to a surface, but also pictographs, engravings or petroglyphs, a technique, which removes material from a surface.²⁵ It usually refers to artefacts made without the direct influence of modern European society.²⁶

Rock art is found under cliff overhangs, inside caves, but also on boulders on ground level. It consists of very different motifs, ranging from geometrical lines to complex painted compositions, such as anthropomorphic, zoomorphic, therianthropic (part animal and part human), and other motif categories in very advanced *wall-shapes*. Some art panels date back to 32 000 years ago (hereafter labelled as before present: BP),²⁷ such as those in the Chauvet cave, while others were made as late as the 1920s.²⁸

1.2 THE (COGNITIVE) DEVELOPMENT THAT LED TO ROCK ART

Tools are needed to create artefacts; in this section I will briefly sketch how the development of tools took place and their meaning for cognitive evolution. The first hominids that used stone tools were the *Australopithecus afarensis* about 3 million years

²⁴ D. Rothenberg, *Survival of the Beautiful: Art, Science, and Evolution* (Bloomsbury Press, 2013), 20.

²⁵ Heyd and Clegg, *Aesthetics and Rock Art*, 1.

²⁶ *Ibid.*, 39.

²⁷ Before Present (BP) is a time scale used in geology. The "present" time always changes so its standard practice is to use 1 January 1950, which is also when radiocarbon dating first came in use.

²⁸ Heyd and Clegg, *Aesthetics and Rock Art*, 39.

ago (hereafter: MYA) in Africa.²⁹ These tools were used for cutting flesh from animals, and cutting through bone marrow. The oldest evidence of stone tool manufacture is known as *Oldowan* technology, a term coined by archaeologist Louis Leakey after the discovery of the site of Olduvai Gorge in Tanzania, Africa. These tools date from around 2.5 MYA, and are associated with *Australopithecus* and the first species of *Homo* that also appeared around the same time, the *Homo habilis*. This technology stands as an important milestone in evolutionary history, because it is linked to major changes in cognitive development, such as morphological features: body and brain size. The visual characteristics of the *Oldowan* technology are of rural form: they are simple and could easily be mistaken as natural unmodified rocks.³⁰

Could stone tools be one of the first signs of creative behaviour? It can almost appear to be so, at least if we follow the changes in stone technology. The next set of stone tools was developed more recently, around 1.5 MYA ago. It includes hand axes and cleavers. This technology is known as the *Acheulean*; it coincided with the appearance of *Homo ergaster* and *Homo erectus*. At this time a new aesthetic feature arrived: The *Acheulean* hand axes with their teardrop form which reflect a strong preference for symmetry. It is also around this time that the archaic *Homo sapiens*, such as *H. sapiens neanderthalensis* appear. The Lower Palaeolithic period was, in terms of speed in technological change, remarkably slow.³¹

In the Middle Palaeolithic period (300,000 to 40,000 years ago) the technological advancements sped up. This is also when the first *Homo sapiens sapiens* appeared.³² This would also mean the gradual extinction of all other hominid species. Despite the relatively shorter time span, this period is characterized by a greater variety in tools regarding design, function and materiality, and includes composite tools such as spears.³³

²⁹ For an overview on the hominid evolution and the stone tool industry see: Nadal et al., 2009, and also Froese, 2013.

³⁰ C. M. Turcotte, "Exploring the Fossil Record," Bradshaw Foundation, http://www.bradshawfoundation.com/origins/oldowan_stone_tools.php.

³¹ T. Froese, "Altered States and the Prehistoric Ritualization of the Modern Human Mind," in *Breaking Convention: Essays on Psychedelic Consciousness*, ed. C. Adams et.al (London: Strange Attractor Press, 2013), 11.

³² *Homo sapiens* consisted of two specimens: *H. Sapiens neanderthalensis* and *H. sapiens sapiens*

³³ Froese, "Altered States and the Prehistoric Ritualization of the Modern Human Mind," 12.

1.2.1 THE REVOLUTION HYPOTHESIS

As we have seen from stone tool production, there was a gradual process of methods and shapes. However, there are different views on how the modern human evolved. One model is called the *revolution hypothesis* maintaining that a sudden and rapid burst of modern human behaviour appeared between 50,000 and 40,000 years BP. The main reasons for this view is the archaeological evidence from European Upper Palaeolithic sites (Fig. 5), such as intentional burials, ornamentation for tools, bodies and cave walls, as well as elaborating bone and ivory blade technology, and other substantial changes in human cognition.³⁴ This period contrasts with the Middle Palaeolithic period remains, which are viewed as simpler and less varied lithic technology, lower effectiveness of resource exploitation and absence of symbolic behaviour.³⁵

63 million years after the extinction of dinosaurs...					
Prehistory	Stone Age	Lower Paleolithic	2.500.000 - 300.000 BC		
		Middle Paleolithic	300.000 - 30.000 BC		
		Upper Paleolithic	Baradostian	36.000 - 35.000 BC	
			Châtelperronian	35.000 - 29.000 BC	
			Aurignacian	32.000 - 26.000 BC	
			Gravettian	28.000 - 22.000 BC	
			Solutrean	21.000 - 17.000 BC	
			Magdalenian	18.000 - 10.000 BC	
			Hamburg	14.000 - 13.000 BC	
			Ahrensberg	13.000 - 10.000 BC	
Swiderian	10.000 - 3.300 BC				
History	Ancient History	Bronze Age	Early Bronze Age	3.300 - 2.100 BC	Sumer, Old Kingdom Egypt
			Middle Bronze Age	2.100 - 1.550 BC	Babylonia, Middle Kingdom Egypt
			Late Bronze Age	1.550 - 1.200 BC	New Kingdom Egypt, Greece
		Iron Age	Early Iron Age	1.200 - 460 BC	Greece
			Middle Iron Age	460 BC - 250 AD	Roman Empire
			Late Iron Age	250 - 500 AD	Roman Empire
		Middle Ages		500 - 1.500 AD	
		Modern History		1.500 - Today	

Fig. 5 Timeline of prehistoric phases.

1.2.2 THE GRADUALIST HYPOTHESIS

A great number of reinterpretations of archaeological records give reason to question both place for the emergence of modern human behaviour and the cognitive development behind it. The revolutionary hypothesis ignores several problems such as population movements, difference in abundance and richness between European, African and Asian Archaeological sites.³⁶ The *gradualist hypothesis* argues that contrary to the predictions made by the revolution hypothesis, the set of behaviour taken to indicate human cognitive modernity did

³⁴ M. Nadal et al., "Constraining Hypotheses on the Evolution of Art and Aesthetic Appreciation," in *Neuroaesthetics*, ed. M. Skov and O. Vartanian (Amityville, New York: Baywood Publishing Company Inc., 2009), 106.

³⁵ C. S. Henshilwood and C. W. Marean, "The Origin of Modern Human Behavior: Critique of the Models and Their Test Implications," *Current Anthropology* 44, no. 5 (2003).

³⁶ Ibid.

not appear at the same time and place. The anthropologists Sally McBrearty and Alison Brooks presented rich evidence supporting the notion that Upper Palaeolithic remains found in Europe are the result of an accumulating and gradual process over a long period of time;³⁷ and Nadal et. al. in (2009) states that:

(r)ecent revisions of the archeological record from a global, not just European, perspective suggest that the origin of art, symbols, and aesthetic appreciation, is diffuse, extending in space, and continuous in time, with deep roots in our Middle Paleolithic ancestors' cognitive and neural structures.³⁸

The revolution hypothesis regards the works of the European Upper Palaeolithic era as products of a modern human mind. What is meant by the so-called *modern human mind and behaviour*? According to the rock art researcher and cognitive archaeologist Robert Bednarik there is no proof that the *artists* painting, say for example the Chauvet cave, had a modern mind;³⁹ so what is meant by modern mind and behaviour is, in fact, hotly debated.

In the article entitled *We Have Never Been Behaviourally Modern: The Implications of Material Engagement Theory and Metaplasticity for understanding the Late Pleistocene record of human behaviour*,⁴⁰ Patrick Roberts (2015) draws on cognition researcher Lambros Malafouris' terms *Metaplasticity*⁴¹ and *Material Engagement Theory*⁴² in an attempt to avoid the conception of the *modern mind*. Metaplasticity is here considered to be the continuous ongoing change of the human brain's connectivity pattern in pace with different environmental and cultural conditions. By introducing such linearity in the development of the human mind, it becomes impossible to define exactly when the human mind becomes modern, hence the title: *We Have Never Been Behaviourally Modern*.

Similarly, we saw that Nadal *et.al.* claim that, «the murals found in the caves in France and Spain are a result of cognitive processes that were most likely present at the dawn of our

³⁷ S. McBrearty and A. S. Brooks, "The Revolution That Wasn't: A New Interpretation of the Origin of Modern Human Behavior," *Journal of Human Evolution* 39, no. 5 (2000).

³⁸ Nadal et al., "Constraining Hypotheses on the Evolution of Art and Aesthetic Appreciation," 107.

³⁹ R. G. Bednarik, "Brain Disorder and Rock Art," *Cambridge Archaeological Journal* 23, no. 1 (2013).

⁴⁰ P. Roberts, "'We Have Never Been Behaviourally Modern': The Implications of Material Engagement Theory and Metaplasticity for Understanding the Late Pleistocene Record of Human Behaviour," *Quaternary International* 2015, no. xxx (2015).

⁴¹ L. Malafouris, "Metaplasticity and the Human Becoming: Principles of Neuroarchaeology," *Journal of Anthropological Sciences* 88 (2010).

⁴² *How Things Shape the Mind* (London: The MIT Press, 2013).

species, some of which is inherited from earlier ancestors»⁴³, i.e. through a gradual evolution both in a Darwinian, and mutation driven biological sense, and, not the least, by a cultural evolution, where DNA sequences are unchanged, and where genes are activated as a response to changes in environment and culture (more information in Appendix).⁴⁴

Changing Ways of Life			
	Paleolithic Era circa 70,000 B.C.–12,000 B.C.	Mesolithic Era circa 10,000 B.C.–8500 B.C.	Neolithic Era circa 9000 B.C.–1800 B.C.
Arts and Crafts	painted cave walls; usually painted animals	made pottery and cave paintings	made pottery; carved objects from wood; built shelters and tombs
Obtaining Food	hunted animals; gathered nuts, berries, and grains	hunted; gathered plants; stored food for later use	began farming in permanent villages; raised and herded animals
Adapting to Surroundings	learned to make fire; developed language; created simple tools and shelters	settled villages located near rivers and lakes; used bows and arrows and other simple tools; began taming animals	built mud-brick houses and places of worship; had specialized jobs; created more complex tools out of copper and bronze

Fig. 6 Timeline of the different lithics

1.3 WESTERN EUROPE

Most of the rock art that we are familiar with, comes from Europe, and are mainly depictions of animals. In the next section we will discuss some of the major findings in prehistoric art and discuss what makes them so significant. This will also be a background for the discussion in Chapters 5 and 6. Animals are a recurring feature in rock art all over the world and through time.⁴⁵ What appears to have been the norm was to depict animals mainly in profile. Virtually every animal in all the different epochs of Palaeolithic, Mesolithic and Neolithic periods (Fig. 6) were presented in strict profile. The reason for the consequent preference for profile could be the desire to view the whole animal in its entirety: the head, body, tail and all four legs. All the other views would not only be very difficult to depict, but also most of the body would be hidden. Humans were rarely depicted, especially males. It is assumed that animals were

⁴³ Nadal et al., "Constraining Hypotheses on the Evolution of Art and Aesthetic Appreciation," 107.

⁴⁴ K. N. Laland, J. Odling-Smee, and M. W. Feldman, "Cultural Niche Construction and Human Evolution," *Journal of Evolutionary Biology* 14, no. 1 (2001).

⁴⁵ H. Gardner and F. S. Kleiner, *Gardner's Art through the Ages : A Global History*, 14th ed. Fred S. Kleiner. ed. (Australia: Wadsworth Cengage Learning, 2013), 2.

chosen to be in profile by the earliest painters so as to create a convincing image of a subject, capturing its very essence.⁴⁶⁴⁷

The first sculpture in Europe is one of the earliest sculptures discovered to this date. It is an ivory statuette originally dated 30,000 BP from a cave at Hohlenstein-Stadel in Germany (Fig. 7). It is carved out of mammoth ivory and nearly a foot tall, which is unusual for its time. What is significant about this statuette is that it is a *therianthrope* – half human and half animal. It is shaped in a human form but with a feline head and it is known as the Lion Man.⁴⁸ What is striking about the maker of this sculpture is that he or she must have been capable of imagination, instead of representing real forms. It is not necessary to have a brain with a highly developed pre-frontal cortex to form the mental image of a human or a lion – but it is so to make the figure of a lion man.⁴⁹ How this was possible will be confronted in chapters 5 and 6, in a more general manner.

Therianthropes are common in the ancient arts in the East and Egypt, e.g. the Egyptian god Anubis and the Hindu god Ganesh. However, it is hard to interpret the *therianthropes* of the Stone Age, because unlike other civilizations who have some sort of documented record of mythology or religion, we know nothing of the mind of the artist in the Stone Age. The animal headed figures in Palaeolithic art have been called sorcerers and thought to be magicians or shamans in outfits.⁵⁰

Why the statuettes were made is unknown. Since the sculpting of the ivory was a complex process, we can imagine that the sculptures were important to those who created them. First of all, a tusk would be removed from a dead animal by cutting into the ivory close to the head. The artist would proceed by resizing the tusk into preferred size and rubbing it with sandstone. Then the sculpting would begin, by using a sharp stone blade to carve the body, limbs and head. The fine lines would be made with a burin (a pointed engraving tool) to incise the lines into the surface, like we see on the Lion Man's arm.⁵¹

⁴⁶ Ibid.

⁴⁷ cf. neurologist Vilianur S. Ramachandran's eight laws of aesthetics, where the 6th law stresses that art represents a scene in its most generic viewpoint V.S Ramachandran and W. Hirstein, "The Science of Art: A Neurological Theory of Aesthetic Experience," *Journal of Consciousness Studies* 6-7 (1999). Fig. 5 and 6

⁴⁸ Gardner and Kleiner, *Gardner's Art through the Ages : A Global History*, 3.

⁴⁹ M. Bailey, "Ice Age Lion Man Is World'S Earliest Figurative Sculpture,"

<http://old.theartnewspaper.com/articles/Ice-Age-Lion-Man-is-worlds-earliest-figurative-sculpture/28595>.

⁵⁰ Gardner and Kleiner, *Gardner's Art through the Ages : A Global History*, 3.

⁵¹ Ibid.



Fig. 7 The Lion Man

In the recent article *Ice Age Lions Man is World's Earliest Figurative Sculpture* by Martin Bailey, we are informed that when conservators experimented with a replica of this statuette a skilled carver needed at least 400 hours using a flint tool (2 months' work in daylight). The same article mentions that the dating has been pushed back to 40,000 BC, which makes it much older than previously suggested.⁵² This shows the sculptors dedication to this statuette, and certainly indicates its importance.

1.4 FEMALE FIGURINES

Recurring motifs for the Upper Palaeolithic period are what the archaeologist usually refers to as *Venuses*. These are a wide range of sculpted women in slightly different style, but are all depicted as nude. They are called *Venuses*, with reference to the Greco-Roman goddess of beauty and love, but we should remember art historian Marilyn Stokstad's warning about «the power of naming» leading even researchers «to assume that these had to be fertility figures and mother goddesses, although there is no proof that this was so.»⁵³ The *Venus of*

⁵² Bailey, "Ice Age Lion Man Is World'S Earliest Figurative Sculpture".

⁵³ M. Stokstad and D. Cateforis, *Art History*, Rev. 2nd ed. ed. (Upper Saddle River, N.J: Pearson/Prentice Hall, 2005), 1-5.

Willendorf (28,000 – 25,000 B.P.) located in the Naturhistorisches Museum, Vienna, is one of the most famous pieces from prehistoric art, although it is only a bit more than four inches tall (2nd from the right in Fig. 8). The carved limestone figure was found in Austria and has an exaggerated body in terms of anatomy. This has been thought to be a fertility image, such as with similar statuettes that were found. But there are other stone women from the Palaeolithic period that have a slender figure and delicate proportions, which makes the fertility idea as elusive as everything else found from this era. The fact that female figures are much more common than male indicates a preoccupation with women.⁵⁴ The name *Venus* is not appropriate because it excludes other interpretations that are not relevant with fertility. It could be a represented beauty ideal, but it has also been interpreted as a guardian figure.⁵⁵ Still, the exaggerated female form would seem to indicate a convention of fertility cults.



Fig. 8 Different Venuses from the Palaeolithic period

When you look at *Venus of Willendorf* it is not naturalism that crosses our minds. As with other figures from the Palaeolithic period, the sculptor avoided any facial features. What has been carved is what could imply curly hair, or a hat woven from plant fibers, which could suggest textile manufacture. What is more distinct is the emphasis on the female parts and fertility. The breasts are very big, much larger than the forearms and hands resting upon them. The belly is protruding more than it would do in a pregnancy and the artist also scratched in a pubic triangle outline. The outline is often carved in detail in early figurations, which again lead some scholars to believe it has to do with fertility images. Independent of

⁵⁴ Ibid.

⁵⁵ Gardner and Kleiner, *Gardner's Art through the Ages : A Global History*, 1-5.

what exactly the artist meant by this figurine, when looking at it we get the idea of womanhood, and not a specific woman.⁵⁶



Fig. 9 The Laussel Woman

The earliest relief sculpture is known as the *Laussel woman* (France). The aforementioned figures were round freestanding objects, while in this one the artist used a chisel to cut into the relatively flat surface of a big rock. It is dated around 25,000-20,000 years B.P. and is now in France in Musée d'Aquitaine, Bordeaux (Fig. 9). When the *Laussel woman* was discovered, she was a part of a great stonewall measured to be around 140 cubic feet. It was positioned in open air in front of a rock shelter from the Palaeolithic period. These kinds of shelters were common dwellings for early humans, along with mouths of caves and huts. The Laussel relief is in limestone and is one example of open-air art in the Old Stone Age. It is a common misconception that early humans dwelled and made all the art exclusively in caves.⁵⁷ Moreover, and as previously remarked, South African San art is painted on the surfaces of the mountainside of the Drakensberg (Fig. 1).

What is interesting with both the Willendorf statuette and the Laussel relief is that red ochre has been applied. The two Venuses share similar exaggerations of the hips, breasts and abdomen. The head again displays no features, but the arms display something of importance.

⁵⁶ D. G. Wilkins, B. Schultz, and K. M. Linduff, *Art Past Art Present*, 5th ed. ed. (Upper Saddle River, NJ: Pearson Prentice Hall, 2005), 26.

⁵⁷ Gardner and Kleiner, *Gardner's Art through the Ages : A Global History*, 4.

The left arm rests on the assumed pregnant belly, while the right arm is raised, holding a bison horn. What the raised arm and bison horn is supposed to mean is debated.⁵⁸

1.5 ALTAMIRA - THE DISCOVERY THAT CHANGED HISTORY

From the examples I have presented so far, the reader may get the impression that rock art only exists as small artefacts. There are, however, huge paintings covering entire cave walls. The paintings that first come to mind when we talk about prehistoric rock art are those in Northern Spain and Southern France. Don Marcelino Sanz de Sautola and his daughter discovered the first site in Santander, Spain in 1879, now known as the Altamira Cave. In the ceiling of this cave they found beautiful paintings of bison (Fig. 10).⁵⁹

At first these paintings was dismissed as forgery, but as time passed more cave paintings were discovered, which were covered by minerals that would have taken thousands of years to accumulate. This forced sceptics to acknowledge the fact that these beautiful paintings were made in an age far more remote than they could ever have imagined. The Altamira paintings have been dated to around 12,000-11,000 years B.P. but there have been more Palaeolithic paintings found that are much older. In total they have found more than two hundred sites.⁶⁰ Cave paintings are still considered as rare, even though they are produced in a number of hundreds, because one must consider the massive timespan of twenty thousand years of creation.⁶¹

1.6 HANDPRINTS

What is also common in rock art is the print of human hands. Around the famous painted horses in the Pech-Merle (Fig. 11) cave in Midi-Pyrénées region in France, the majority of hands are produced as a type of negative. This is where the artist placed his hand on the cave wall and then painted or blew pigment around it. The positive print is where the artist would dip the hand in paint and press it on the wall. These handprints are also believed to have a significant meaning or purpose. Some scholars consider them as *signatures* of cult or community members or even less likely as by an individual artist.⁶² I prefer Lewis-Williams idea that the hand touching the cave wall has to do with entering a spiritual world, where the

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Ibid., 8.

⁶¹ Ibid.

⁶² Ibid.

paint would be like the glue to keep the two worlds together.⁶³ This together with the *dotted* horse gives it a spiritual element as well as impression of the artist influenced by some visual phenomenon (discussed in more detail in chapter 5).



Fig. 10 The bison in the ceiling of the Altamira cave

1.7 BULLS IN LASCAUX

The Lascaux cave, near Montignac, France, is extensively decorated. Many of the painted chambers are far from the entrance, and the first one is called the *Hall of the Bulls* (Fig. 12). Not all the animals depicted are bulls despite the name. Many of the animals represented have been painted by using coloured silhouettes, just like in the cave at Altamira.⁶⁴ Other bulls have been painted using outline alone, the same as the Pech-Merle horses. This could suggest that different artists painted them at different times, and we could even talk about styles in an art historian sense.⁶⁵

What is fascinating with the paintings in the *Hall of Bulls* is that the bulls have been represented with a twisted perspective, which means the viewers see the horns in frontal view, while the animal is depicted in profile. This shows that the artist's approach was more descriptive, in order to show more of the animal's features than how it actually looks naturally if you see a bull in profile. This was the norm in prehistoric painting, but not the

⁶³ Ibid., 8.

⁶⁴ Lewis-Williams and Dowson, "The Signs of All Times: Entoptic Phenomena in Upper Palaeolithic Art."

⁶⁵ Gardner and Kleiner, *Gardner's Art through the Ages : A Global History*, 2.

rule, for example the Chauvet cave (below), containing some of the oldest representational paintings discovered so far, shows the horns in a more natural way, i.e. in profile. This has caused art historians to rethink their assumptions about Palaeolithic art.⁶⁶ What I mean is that the development is not linear in the manner we usually refer to in art history: horns in profile in Chauvet (32 000 BP); twisted horns in Lascaux (15 000 BP) returning again to heads in strict profile (Fig. 12 and 13).



Fig. 11 The spotted horses at Pech Merle cave

1.8 THE CHAUVET CAVE

The paintings in Chauvet Cave in Vallon-Pont-d'Arc, France were surfaced in December 1994 and created a media storm. This is partly because the age established by carbon dating showed that they were fifteen thousand years older than those in Altamira. The Chauvet paintings are therefore the oldest ever found in Europe. Chauvet caused scholars to reevaluate the scheme of stylistic development from simple to more complex forms that had been ruling the art history discipline and the linear way of thinking for decades.⁶⁷

Many species of animals appear on the cave walls, including carnivorous animals, which were never a part of the Palaeolithic human diet, such as lions and bears. This cave was

⁶⁶ Ibid., 9-10.

⁶⁷ Ibid., 10.

inhabited by bears, and more than fifty bear skulls were found there. This explains what a dangerous place this cave could be to enter. From the examples found in Chauvet we learn that, thousands of years before the paintings in Lascaux, the horns of aurochs (extinct long-horned wild oxen) were painted naturally (Fig. 13). Not in a twisted perspective like in Lascaux and others. Another norm introduced by the Chauvet artists is that they would sometimes paint aurochs and horses incomplete (but still in profile as normal) and this violates the norm that Palaeolithic paintings were always sketched with complete forms.⁶⁸



Fig. 12 and 13 The bull from Lascaux to the left with "twisted" horns and to the right the aurochs in Chauvet cave with "naturalistic" horns.

The discovery of Chauvet, and other new findings make it obvious that the hypothesis that Palaeolithic art *evolved* from primitive to more sophisticated representations is wrong. In time, other widely accepted theories will also be proven false. For example the recent finding of handprints and a painted boar in an Indonesian cave created a big shift in cultural history. This finding was published last year and the painting(s) is said to be dated at 35,700 years BP, which not only changes the chronological aspect of how the arts have evolved but also the geographic aspect.⁶⁹ This indicates that painting did not only start in Europe, and thus contradicts the revolutionary hypothesis mentioned earlier. The study of prehistoric culture is an exciting, yet frustrating field for research as studying art from such a remote period often

⁶⁸ Ibid., 11.

⁶⁹ C. Brahic, "Worlds Oldest Hand Stencil Found in Indonesian Cave," news release, 11th of October 2014, 2014, <https://www.newscientist.com/article/mg22429904-600-worlds-oldest-hand-stencil-found-in-indonesian-cave/>.

results in every new find flipping our whole knowledge and perception on its head, forcing us to reevaluate our theories and thoughts. Such case is the Blombos cave.

1.9 BLOMBOS - ANOTHER “CHAUVET”

Recent findings in Blombos Cave in South Africa suggest that symbolic practices and events taking place would occur around 70-100,000 years BP, reflecting brains with advanced cognitive capacities. The discoveries of the incised ochre pieces in Blombos (Fig. 14) pushed back the time for the first arrival of modern behaviour. The layers in this cave were found to contain tools for pigment processing (such as ochre and containers for mixing colours). As remarked above, some of these pieces of ochre have abstract geometrical engravings and other pieces may have been used for body decoration.⁷⁰ Dr. Tom Froese experiments with the thought that the engraved ochre pieces in Blombos may have played some role in ritualistic maturation rites of girls as they got their first menstruation, the red colour of the ochre symbolizing menstrual blood.⁷¹ Added to this, there is evidence for other bodily decoration, such as pierced shell beads for necklaces.⁷²

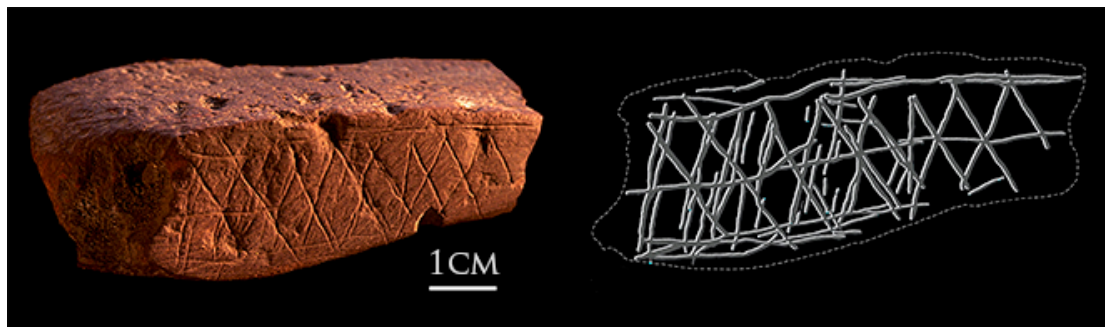


Fig. 14 The Blombos piece with detailed engravings

The different symbolic practices increased as time passed, and in the Upper Palaeolithic era, we reach the period of the famous European cave paintings dated from about 40,000 to 10,000 years ago. The first representational art takes places within this period, but also a

⁷⁰ C. S. Henshilwood et al., "Emergence of Modern Human Behavior: Middle Stone Age Engravings from South Africa," *Science* 295, no. 5558 (2002).

⁷¹ T. Froese, "The Ritualised Mind Alteration Hypothesis of the Origins and Evolution of the Symbolic Human Mind," *Rock Art research* 32, no. 1 (2015): 20.

⁷² Henshilwood et al., "Emergence of Modern Human Behavior: Middle Stone Age Engravings from South Africa."

wider artistic practice in general, including more ornamentation and decoration of tools. This is also where the famous *Venus* figurines appear in Europe (cf. Fig. 8).⁷³

Still we should keep in mind Nadal et al.'s (2009) warning against an Eurocentric interpretation of cognitive evolution:

(r)ecent revisions of the archeological record from a global, not just European, perspective suggest that the origin of art, symbols, and aesthetic appreciation, is diffuse, extending in space, and continuous in time, with deep roots in our Middle Paleolithic ancestors' cognitive and neural structures. Only by neglecting the African and Asian archaeological record [such as the Blombos Cave] is it possible to be surprised by the 'sudden' artistic explosion of the European *Aurignatian culture*. This set of cultural manifestations had been gradually growing since the appearance of our own species and left some early samples, not in Europe, but in Africa. The murals found in Southern France and Northern Spain are sophisticated and beautiful manifestations of cognitive processes that were probably present at the dawn of our own species, such as in the symmetry-'loving' *Homo ergaster* and *Homo erectus*, some of which might even have been inherited from earlier ancestors. Artistic activities and aesthetic experiences, broadly conceived, seem to have evolved by integrating preexisting neural systems, common to other primates, with innovations that occurred throughout the human lineage. Such a process intertwined with the evolution of cognitive and affective processes linked to other human activities were the result of more than one selective pressure, and it resulted in multiple adaptive advantages.⁷⁴

An interesting point that Froese highlights is the speed of technological innovation, and how it increases with time. In the Upper Palaeolithic era, instead of referring to millions of years, it is more relevant to think in thousands of years. This acceleration continues up to our present era of information technology. What is interesting is that from the Middle Palaeolithic period and onwards the technological change started to outpace the biological change. Now instead of reflections of technological and symbolic practices one needs to look at the changes in for example socio-cultural context.⁷⁵

1.10 SUMMARY

In this chapter we have focused on the different findings that have changed the way we view prehistoric art and its chronological order. We have seen that artistic behaviour may have started earlier than 40,000 year B.P., as was previously thought (revolution hypothesis), and that it was manifested first as abstract patterns, such as the marks on the Blombos pieces demonstrate. Thus, it was not necessarily in Europe that the *birth of art* happened, but perhaps in South Africa, or maybe even in Indonesia. Despite it being prehistoric, the pieces just discussed appears to have a rich variety in style and techniques and even subject matter.

⁷³ Froese, "Altered States and the Prehistoric Ritualization of the Modern Human Mind," 12.

⁷⁴ Nadal et al., "Constraining Hypotheses on the Evolution of Art and Aesthetic Appreciation," 107.

⁷⁵ Froese, "Altered States and the Prehistoric Ritualization of the Modern Human Mind," 12.

Gardner's *Art Through the Ages* stresses that the artistic environment we have in the West today cannot be projected into the remote past. The authors' belief is (common to many art historians) that humans started to *intentionally manufacture* sculpture and paintings 30,000 years BP and that this is when the story of art begins.⁷⁶ But as we saw with the discovery of Blombos, what if it began even earlier? The enormous span in time and space shows the significance of this *art period*. To understand what rock art is and how it is related to evolution, whether in Darwinian or in a cultural sense, is highly significant.

⁷⁶ Gardner and Kleiner, *Gardner's Art through the Ages : A Global History*, 2.

CHAPTER 2

IS IT ART OR ARTEFACT?

In *The Arts are More than Aesthetics*,⁷⁷ Ellen Dissanayake and Steven Brown presents a new and very radical definition of art that is far from the European and philosophical tradition. She stresses that the arts in society today is very different from what it was when art first evolved; e.g. she finds that the aborigines in Australia and their relation to art is much closer to the culture of prehistoric times than to our own. Maybe the way we can answer what the arts are for today is through learning more about what the arts *were* for.⁷⁸ This is reflected in this quote:

Someone told me just recently that *rock art* is dead. If *art* was dead, that would not matter to we Aborigines. We have never thought of our rock paintings as *art*. To us they are IMAGES. IMAGES with ENERGIES that keep us ALIVE – EVERY PERSON, EVERYTHING WE STAND ON, ARE MADE FROM, EAT AND LIVE ON.⁷⁹

This is a very good example of how the word and concept of art has different meaning as it crosses cultural boundaries. It is a statement by an aborigine named David Mowaljarlai who found the term *art* inappropriate in the context of Ngarinyin rock painting. I agree with art scholar Reinaldo Morales Jr. who states that when there are living voices available to give their perspectives on their rock art, they should be taken into account, even though we call it by different names.⁸⁰

The idea proposed by contemporary art philosophers that art has only existed for two centuries,⁸¹ - is a radical and astonishing statement to Dissanayake. She argues that they have forgotten that the abstract conception of *art* is not only a construction of the Western culture; it has a clear and obvious origin.⁸²

⁷⁷ Dissanayake and Brown, "The Arts Are More Than Aesthetics: Neuroaesthetics as Narrow Aesthetics."

⁷⁸ Teaching and Learning in South Australia., "What Are the Arts For?," (Youtube, 2013).

⁷⁹ D. Mowaljarlai, ed. *Ngarinyin Perspective of Repainting: Mowaljarlai`S Statement*, Retouch: Maintenance and Conservation of Aboriginal Rock Imagery (Melbourne: Australian Rock Art Research Association, 1992), 8.

⁸⁰ R. Morales Jr., "Considerations on the Art and the Aesthetics of Rock Art," in *Aesthetics and Rock Art*, ed. T. Heyd and J. Clegg (Hamshire, England: Ashgate Publishing Limited, 2005), 64-65.

⁸¹ Dissanayake refers to a comment made by Paul Mattick made during a presentation in panel entitled "The institution of Art/2" at the Forty seventh Annual Meeting of the American Society for Aesthetics, 25-28 October 1989, New York City.

⁸² Dissanayake, *Homo Aestheticus : Where Art Comes from and Why*, 39.

2.1 AESTHETICS AT ITS VERY LIMITS – a review of a hotly debated subject

Morales Jr. argues that it is important to not only understand rock art, but all art in *context*, beyond the limited definitions promoted by conservative nineteenth century academic principles of taste and judgment:⁸³

The questions of what art *is* is by no means limited to discussions of West versus non-West, or historic versus prehistoric. When, in the late nineteenth century, artist began to challenge renaissance ideals of representational illusionism, when they began to emphasize colour over drawing, when they began to stress content over subject matter, the conservative institutions of the European art world were not ready to consider this new art as *art*. Contemporary experimental art continues to challenge conservative and oversimplified definitions of art.⁸⁴

Despite that, the interest in rock art research has increased in recent years, as has the appreciation of its visual attractiveness and emotional valence. Philosopher Thomas Heyd states that the researchers in anthropology and archeology rarely discuss the aesthetic point of view. Neither have discussions on rock art aesthetics interested art historians or philosophers; hence non-specialists in art history are the only ones saying anything about the aesthetic value of rock art.⁸⁵

The aesthetics of rock art is a fascinating area of study; it is an area where contemporary academic researchers are on unfamiliar ground. Rock art researchers might find the philosophical debate on aesthetics intimidating, especially entering discourses with questions such as *what is art*. And *what is aesthetic appreciation?* In contrast, this is also intimidating for art historians and the philosophical aesthetics, because they might not be familiar with the discipline and research in anthropology and archaeology, which means that they might feel unqualified to discuss this in a rock art research arena, which is so heavily based on a body of work which art historians are not acquainted with.⁸⁶ This remains a neglected area, which scholar Anne Solomon states clearly in her article: *Towards Visual Histories: Style, Interdisciplinarity and Southern African Rock Art Research*⁸⁷, in which she criticizes in particular the southern African archaeology, where *style* deserves a central place in rock art studies, and should be enriched by the engagement of art history.

⁸³ Morales Jr., "Considerations on the Art and the Aesthetics of Rock Art," 68.

⁸⁴ Ibid.

⁸⁵ Heyd and Clegg, *Aesthetics and Rock Art*, 2.

⁸⁶ Ibid., 2

⁸⁷ A. Solomon, "Towards Visual Histories: Style, Interdisciplinarity and Southern African Rock Art Research," *The South African Archaeological Bulletin* 66, no. 193 (2011).

Solomon is stating that *style* has been neglected to most rock art researchers in the last three decades since the 1970s. She blames the preoccupation with the shamanistic centred research together with iconography and the neuropsychological point of views that has obstructed an in depth praxis on *style*. Lewis-Williams and Dowson implied in their book *Images of Power* from 1989 that *style* was irrelevant to the makers. Solomon refers to the Hampson *et al.* article (2002) *Rock art of Bongani Mountain Lodge and its Environs, Mpumalanga Province, South Africa: an introduction to problems of South African rock art regions*⁸⁸ that regards style as subjective and useless for researchers investigating regionality. Solomon maintains that such ideas are what underpin archaeological resistance to art historical ideas. The fact that *style* involves subjectivity, and that researchers repeatedly make implicit or explicit use of *style* needs considered attention.⁸⁹

Solomon seeks new ways of recognising style that are not necessarily impressionistic but are based in an extended understanding of *visuality* and production, and with a better descriptive vocabulary. A visual history must, according to Solomon, engage more closely with the images themselves, instead of broadly correlating art and historical context, without specification of the process involved (more about the process of making in chapter 4).⁹⁰ In light of the studies she refers to, she suggests that if they had incorporated the more thoughtful art historical approach to *style* and *visuality*, it might have led to more insight. None of the studies she mentions can propose a theory of features of artworks and how these traits (stylistic or iconographical) can relate to society, history and culture.⁹¹ Unfortunately, she does not present us with an example of what it means to be researching this.

One must not forget that most of the rock art was made by people in a great distance from us, not only in time and space, but also culturally. A term coined by Heyd; *aesthetics at its very limits*, where he stresses the disappointment that is avoided in the discourses between experts. Instead of neglecting this area of art history, rock art represents a fundamental opportunity for common ideas concerning the evolution of styles, cross-cultural themes and technical advances, integration of art and life as a whole. Learning about cross-cultural aesthetics can

⁸⁸ J. Hampso et al., "Rock Art of Bongani Mountain Lodge and Its Environs, Mpumalanga Province, South Africa: An Introductin to Problems of South African Rock Art Regions," *South African Archaeological Bulletin* 57 (2002).

⁸⁹ Solomon, "Towards Visual Histories: Style, Interdisciplinarity and Southern African Rock Art Research," 54.

⁹⁰ *Ibid.*, 56.

⁹¹ *Ibid.*, 57.

make us discuss the beginning of art. In short, anatomically and physiologically we are more or less the same as we were 40, 000 years ago, so it is not unheard of to draw parallels between ourselves then and now. As mentioned above, we can learn more about the human condition:

Even the attempt to do justice to the aesthetic values present in some object created or appreciated by another human being can be a rich form of participation in the complex experiences of another person's life. The importance of such attempts to participate in the life experiences of other people is not necessarily lessened by our lack of accuracy in the grasp of their aesthetic perspectives. Rather, by itself the attempt to see (and possibly, to feel, hear, smell and taste) with those who preceded us constitutes an experiment in the sharing of lives, which can generate an awareness of our common human condition.⁹²

To use or not use the term *art* when discussing prehistoric artefacts opens a huge discourse. How can *artworks* be separated from other prehistoric crafts?

2.2 THE *ART* IN ROCK ART

The term *rock art* arrived in English language in 1959 through the Oxford English Dictionary. Already within a decade the term received objections due to the word *art* in *rock art* and after three decades the *art* part rapidly decreased. From observing this trend, archaeologists Paul Bahn and Jean Vertut proposed a few alternatives such as *pictures*, *iconography*, *images*, *pictograms/ideograms*, *symbolic graphisms*, and *decoration*.⁹³ Lewis-Williams, to whom we will return in chapter 5, considers the San Bushman paintings as complex metaphors, not just aesthetically pleasing depictions. The maker of the rock art was just participating in a continuing tradition, rather than creating an individual object of *art*.⁹⁴

Archaeologist Carlos Díaz-Granados prefers the term *rock graphics* because we cannot be certain that the markings were intended and created as *art* for aesthetic purposes. He does not dismiss that some could have been created as art, but to call all rock graphics *art* only functions as disfavour to art and the people who made it.⁹⁵ Heyd on the other hand, believes it is not necessary to know the intentions of the makers of rock art, to be able to approach this

⁹² Heyd and Clegg, *Aesthetics and Rock Art*, 4.

⁹³ P. G. Bahn and J. Vertut, *Images of the Last Ice Age* (New York: Windward, 1988), 10.

⁹⁴ J. D. Lewis-Williams, *The Rock Art of Southern Africa*, The Imprint of Man (Cambridge: Cambridge University Press, 1983), 54.

⁹⁵ C. Diaz-Granados Duncan and D. Browman, "The Petroglyphs and Pictographs of Missouri: A Distributional, Stylistic, Contextual, Functional, and Temporal Analysis of the State's Rock Graphics. (Volumes I and II)," (ProQuest Dissertations Publishing, 1993), 10.

from an aesthetic point of view.⁹⁶ This is the same as a person who enters an art gallery; you do not have to know anything about art or the artist, to be able to have a strong aesthetic experience.

2.3 BEYOND ART

These alternatives serve as attempts to free rock art from the assumed confines of art and how it is defined in contemporary discourse. Was art perceived as simply *art for art's sake*, just aesthetic pleasing depictions and *not* created for various purposes? Morales Jr. believes that such a conception of art excludes a lot of great works that are widely accepted to be art: Greek sculpture, medieval stained glass, gothic architecture, and many other forms of art that serve a purpose. He claims that the disservice here is not in calling rock art *art*, but in confining *art* to the definitions used by authors seeing art as inextricably tied to the modern conception of it.⁹⁷

Archaeologist Silvia Tomaskova avoids the term *art* altogether preferring instead to call it *representation*. She acknowledges that the discipline of art history does have conceptual tools and theoretical approaches that are applicable to prehistoric materials. But she also states that in the *narrow corridor* of purely aesthetic realm, art belongs to our modern conception of it while prehistoric *representation* did not.⁹⁸ In Tomaskova's opinion,⁹⁹ using *art* with regards to prehistoric marks on rocks may lead to a reproduction of our own cultural preconceptions, reflected and transported into the prehistoric past.

Anthropologist George Mills also agrees with Tomaskova; if art is a primary means to express individual and social value, then viewing rock art is an attempt to appreciate something without the attention of social context, and we export our own values upon the cultural setting at hand (This will be elaborated in a chapter 4).¹⁰⁰

⁹⁶ Heyd and Clegg, *Aesthetics and Rock Art*, 3.

⁹⁷ Morales Jr., "Considerations on the Art and the Aesthetics of Rock Art," 62.

⁹⁸ S. Tomaskova, "Places of Art: Art and Archeology in Context," in *Beyond Art: Pleistocene Image and Symbol*, ed. M. W. Conkey, et al. (San Francisco, CA: California Academy of Sciences/University of California Press, 1997), 266.

⁹⁹ *Ibid.*, 268-69.

¹⁰⁰ G. Mills, "Art and the Anthropological Lense," in *The Traditional Artist in African Societies*, ed. W. L. d'Azevedo (Chicago: Indiana Univeristy Press, 1973/1989), 379.

Another actor who uses the word *representation* is anthropologist Randall White.¹⁰¹ He thought *representation* had a wider and more theoretically complex usage, and that unlike *art*, *representations* can take on many forms and have very different underlying logics. And most important, not all representational media is within the visual format, it could also be auditory for example. He agrees with Tomaskova that *art* is limited to the narrow corridor of purely modern aesthetic. White writes: «by conceiving Upper Palaeolithic representations as art in our sense, we have prevented a serious treatment of meaning(s).»¹⁰²

2.4 AESTHETIC VALUE IN ROCK ART

We will now return to Heyd who claims that the study of aesthetics in rock art is more in a general way to be attentive to the marks on the stone so that those marks become of interest *for and in itself* as objects of perception. And if one can say that being interested in the markings on rocks as an aesthetic approach, we must be committed to claim that the rock markings are a form of art itself, with all the complexity it might involve.¹⁰³

Heyd maintains that even if we consider aesthetic appreciation as a free play of imagination and understanding, it seems relevant that we are more likely to achieve a fuller appreciation if we place ourselves within a viewpoint that is crucial. Hence, Heyd claims that aesthetic appreciation is likely to benefit from taking on, or trying to take on, the viewpoints of the cultures from which the artistic phenomenon originated (cf. Bullot and criticised, my chapter 4).¹⁰⁴ Heyd suggests we should choose an ethnocentric way to exclusively ascribe the ability to make art our own, and adopt the American artist and philosopher Paul Ziff's description of an artwork as something that is made «fit to be an object for aesthetic attention.»¹⁰⁵ This opens up the whole idea of which objects are considered to be art. It would then be more independent of a particular historical definition of *art*. If an object of aesthetic interest is not necessarily called a work of art, its status largely depends on what effort was invested in making the object fit for aesthetic appreciation.¹⁰⁶

¹⁰¹ R. White, "Substantial Acts: From Materials to Meaning in Upper Paleolithic Representation," in *Beyond Art: Pleistocene Image and Symbol*, ed. M. W. Conkey, et al. (San Francisco, CA: California Academy of Sciences, 1997), 93.

¹⁰² *Ibid.*, 94.

¹⁰³ Heyd and Clegg, *Aesthetics and Rock Art*, 6.

¹⁰⁴ *Ibid.*

¹⁰⁵ P. Ziff, "Anything Viewed," in *Aesthetics*, ed. S. Feagin and P. Maynard (Oxford: Oxford University press, 1997), 285.

¹⁰⁶ Heyd and Clegg, *Aesthetics and Rock Art*, 7.

2.5 NON-WESTERN POINT OF VIEW

As we saw in the start of this chapter, a way to understand rock art and its contents is to receive input from people who partake in making it, such as Native American artist Frank LaPena: «As an art form, rock art is aesthetically some of the finest work ever done. It continues to fascinate and relate to contemporary people because philosophically it gives us a vision of a living earth balanced: the spiritual and the physical being in harmony.»¹⁰⁷ For Native Americans, calling their work *art* can actually be insulting. LaPena believes that *rock art* is not only *art*, but some of it is great *art*. This statement might be confusing, but Morales Jr. points out that the difference here most likely goes in the understanding how the natives themselves regards the word *art*, and how they apply that definition to their cultural legacy.¹⁰⁸ Based on the two quotes from LaPena and Mowaljarlai (page 35 and 31) we can draw many parallels in their relation to art and their view of it. The word *art* is strange because it seems too grand a word for *rock art*, but when we talk about the makers of rock art, the word will seem insufficient.

Morales Jr. notices two repeated factors in the objections we just discussed. One view is that art has an important utilitarian function – as a socially vital form in for example a tribe. The other is Western theories of art and aesthetics' approach to prehistoric art forms with the point of view taken from the modern fine arts of the galleries, salons, and museums - an approach not capable of addressing the visual expressions of non-Western communities who do not share this conceptual framework.¹⁰⁹

It can also appear that the root of this problem is not in the concept of *art* but in the limits of linguistics. Most of the ethnographers and anthropologists who analysed non-Western cultures and their art not only achieved higher understanding of their culture and its artistic creations but also provided valuable insight into the many ways in which arts and aesthetics can function in different societies (Western or non-Western). Morales Jr. believes that when a society does not have a word for *art* (or at least a word equivalent to ours) this does not mean that they are without it. The reason why some cultures have art and others supposedly do not, is probably less a reflection of any concept of art in one culture and the absence of it in

¹⁰⁷ Ibid., 8.

¹⁰⁸ F. Lapena, "A Native American'S View of Rock Art," in *Ancient Images on Stone: Rock Art of the Californias*, ed. J. A. V. Tillburg (Los Angeles: The Institute of Archeology, Univeristy of California, 1983), 27.

¹⁰⁹ Morales Jr., "Considerations on the Art and the Aesthetics of Rock Art," 65.

another; it is more likely a reflection of the definition of art used by the investigator or understood by the indigenous consultant.¹¹⁰

2.6 ARTEFACT OR ART: BASKET FOLK AND POT PEOPLE

It is a common tendency in the Western mind to divide cultural objects into two categories; in historian James Clifford's art-cultural system those cultural objects which fail to meet the criteria for classification as *fine arts* are relegated to a status of artefacts.¹¹¹ Art philosopher Denis Dutton provides us with an intriguing thought experiment; this thought experiment is, in fact, a critical answer to a comparable one set forth by Arthur Danto. Their experiments are not about prehistoric art, but focus on tribal art today; In agreement with Dissanayake (cf. Chapter 3, section 5), I believe it is appropriate to compare tribal art and rock art. Can we imagine that a set of aesthetic values in one culture is inaccessible to aesthetic perception in another? Do we have to be told by an insider of a foreign culture what art is? And why is cultural artefacts considered less than *fine arts*?

To answer these questions Danto compares two fictive African tribes: *the Pot People* and *the Basket Folk*. These tribes live on different sides of a high mountain, and with no contact between them. Both tribes produce pots and baskets, and it is hard for Westerners to tell the difference between them. Despite this similarity, they have very different practices and ways of life. In the culture of the *Pot People*, their pots have a rich symbolic meaning. In their belief, the god is a pot-maker and the pots that are made express a divine cosmology. The pot-makers are respected and honoured as artists in their society. On the other side of the mountain live the *Basket Folk*. This society centres their cosmology and belief in their basket making, and each basket holds great meaning and spiritual power.¹¹²

What is also important to note is that the *Basket folk* also make pots, and the *Pot People* also make baskets. Even when ethnographers admire the pots made by the *Basket Folk*, the tribe themselves attaches no special meaning to this, and considers it as a utensil like fishnets or

¹¹⁰ Ibid., 67.

¹¹¹ J. Clifford, "Histories of the Tribal and the Modern," in *The Predicament of Culture: Twentieth-Century Ethnography, Literature, and Art* (Harvard, MA: Harvard University Press, 1988).

¹¹² D. Dutton, *The Art Instinct : Beauty, Pleasure, & Human Evolution* (Oxford: Oxford University Press, 2009), 77.

arrowheads. You find a similar idea with the *Pot People*, who are talented basket makers, while not regarding the baskets as having any special significance.¹¹³

Further in Danto's narrative, problems arise when objects from these different tribes are placed in a Fine Arts Museum or in a Natural History Museum. The pots from the *Pot People* and the *Basket Folk* are placed in the primitive wing in the Fine Arts Museum, as one would expect, while the baskets from the *Pot People* and the pots from the *Basket Folk* are displayed along utilitarian artefacts in the Natural History Museum. The museum presents two dioramas for visitors. One is from everyday life and one shows how venerated the baskets are in their society. When a school group arrives, a girl points out that she cannot see the difference between the baskets strewn about, some broken in the *Pot People* diorama, and the baskets being venerated in the diorama of the *Basket Folk*.¹¹⁴ The girl feels cheated over how the experts can tell a difference, and not her. Her problem is: «If we cannot see the differences that make one class of objects into works of art while leaving the other class as utilitarian artefacts, should the distinction make any difference to us?»

The basic line is that Danto's example is challenging the aesthetic criticism applied to the art of remote cultures. Danto is even suggesting that if we can't see the difference that make one class of objects into works of art while leaving the other class as utilitarian artifacts, should the distinction then make any difference to us? He even goes as far as saying that *Pot People* potters would themselves be unable to distinguish their own creations from the utilitarian artifacts of the other tribe over the mountains.¹¹⁵ Hence, in Danto's thought experiment there is no idea of a *particular cultural competence* within a tribe as opposed to the other tribe.

The lack of a cultural competence within the tribes in Danto's experiment means that Danto's aesthetic paradigm will seem to be anchored outside the tribes. As we will see (below), Dutton reprimands him for applying an eye of Western aesthetics. Dutton believes that the meaning of a pot or basket to a tribe, if it carries any meaning at all, might be irrelevant to our aesthetic appreciation of it. Admiring a mask or carving, or in our case a prehistoric painting,

¹¹³ Ibid., 77-78.

¹¹⁴ Ibid.

¹¹⁵ Ibid.

could thus raise the question: is this a good work in the context it was made? Did it move its maker? Is it of spiritual significance or was it made as a utilitarian object only?¹¹⁶

2.6.1 A COUNTER THOUGHT EXPERIMENT

Dutton suggests that Danto's *tribes* are humanly impossible; so he presents a new thought experiment. There are also two different tribes in his experiment; one group is called *Jungle People*. They are master carvers who use stone and bone tools and produce sculptures of animal and human form. They particularly appreciate carvings made out of hard old wood, which the gods seem to favour. Sometimes the carvings are made and hidden in the jungle, left for the gods. Other times they pray to these carvings and cover them with semen, pig fat or blood with the goal of energizing them to bring about good luck in hunting or healing. Separated from modern civilization, the *Jungle People* have never seen a representational image; they have never seen pictures or carvings from other cultures like their own. The carvings are very important to them and their culture.¹¹⁷

Dutton then introduces the second group that is historically and traditionally very similar to the *Jungle People*, particularly in their sacred carving and in mythology. But these people were exposed to modern civilization and Dutton calls them *Tourist People* (for the sake of the thought experiment). They no longer pray to their carved idols, and consider it silly to smear it with blood or semen, because they have become devout Methodists. Despite this, they still carve their traditional sculptures for tourists. Using steel on soft wood they are capable to make sculptures quickly; they shine with varnish. They are able to live comfortably on welfare benefit, and they order movies for their video players.¹¹⁸

In the manner of Danto, Dutton is trying to imagine that no one can tell the difference between the carvings of the *Jungle People* and those of the *Tourist People*. He asks: How is it possible to imagine that carvings produced in such completely different contexts, for such completely different aims, could turn to be indistinguishable? According to Dutton, Danto insists on a conceptual distinction between art and utilitarian artefact. To Danto, artefacts are simply nicely made useful objects. Art works are altogether something else, «(a) compound of thought and matter»; a utilitarian artefact, on the other hand, is «shaped by its function, but

¹¹⁶ Ibid., 78.

¹¹⁷ Ibid., 80-81.

¹¹⁸ Ibid., 82.

the shape of an artwork is given by its content... To be a work of art, I have argued, is to embody a thought, to have content, express meanings, though the objects (the artefacts) they resemble do not.»¹¹⁹

Dutton explains that the carvings of his Jungle People's are used to express their own deep ideas, about their values, their own lives, or their mythical history. This differs from the Tourist People whose carvings are only for mercantile purposes, and express little or nothing about the people who made them. He explains that the difference between his and Danto's stories is that Danto tried to construct an image of art, in which perceptions do not count at all and institutional status and interpretation determine the aesthetic value. In the world of Danto's *Pot* and *Basket folk*, the cultural outsider will never know an artistic masterpiece unless some insider appears with that information that: yes, this is a work of art.¹²⁰

Different from Danto, what Dutton is trying to convey is that trained perception, the ability of tribal people themselves to see systematic differences – is fundamental. Tribal art works are mainly works of craftsmanship that are intended to excite or delight the viewer. There are no Duchamps or Warhols in the realms of indigenous art. Danto is taking upon himself the ignorance of an outsider and trying to apply it into some sort of principle, where perception does not count at all.¹²¹ Concept art is basically not a part of the tribal art world, but Danto is acting as if it is.

As we have seen, Danto argues that the very existence of art objects depends on interpretation. This is fitting with the conceptual European Modernism, but it is a world away from the different tribe art all over the world. Dutton maintains that these objects are made with the intention to amaze, amuse, and enchant. This is a part of the artistic interpretation that constitutes their very being as works of art. According to Dutton's own experience with traditional societies, he believes that learning a primitive art genre is about getting knowledge of cultural contexts in which the objects can thus be set as *art* or *artefact*: Dutton asserts that it is a matter of gaining cultural knowledge to be able to see the aesthetic qualities that have been intentionally put into the objects to be viewed.¹²²

¹¹⁹ Ibid.

¹²⁰ Ibid., 83.

¹²¹ Ibid.

¹²² Ibid., 84.

Hence, to understand whether an artefact could be seen as art or not is to apply cultural knowledge. Sacred ancestor carvings will then be richer and will provide a more powerful visual experience. This is true to Dutton's experience with tribal cultures. Dutton is not directly saying Danto is an ethnocentric, but in his thought experiment based on his failure to interrogate indigenous artists and connoisseurs of these tribes as to whether they can perceive differences that escape Western curators and schoolchildren.¹²³ Dutton argue that if we step out of the philosophical studies and into the real world of human values and artistic creation, the prospect would seem to be as likely as *Hamlet* having been written by a monkey.¹²⁴

2.6.3 SUMMARY

What we learn from this discussion is that it is easy to get caught up in Western ideas of interpretation and how to perceive art. It is not worth applying our modernist and Western concepts onto tribal art. If *art's* existence depended on interpretation, Danto would certainly dismiss the prehistoric paintings as art. It almost would seem like Danto assumes that contemporary art has somehow completed its evolutionary purpose. But even if there are limitations in the interpretations, we shall see later (chapter 4) how we may attempt to make it approachable.

2.7 IN THE INSTITUTION

Cultural theorist Mieke Bal also claims that the error lies with the Western museums and how they divide and present objects as either *art* or *artefact* and are thus perceived as so by the visitors. She also detects a Western Power play, where certain objects deriving from Western societies are perceived as important works of art, while similar ones but from a different context become *only* simple artefacts.¹²⁵ The art collections in the museums simply exist as objects of beauty, form and individual genius. Bal is stating that these collections contain the highest form of art, and the climax of human achievement, regardless of what it tells us.¹²⁶

The artefacts on the other hand are understood as a *synecdoche*, which is a rhetoric term Bal uses to describe a part that stands for the whole: through synecdochical reading, the artefact is only readable as part of a particular culture, no matter what aesthetic quality it may have. It is

¹²³ Ibid.

¹²⁴ Ibid., 82.

¹²⁵ M. Bal, *Double Exposures: The Subject of Cultural Analysis* (New York and London: Routledge, 1996), 16.in ; Heyd and Clegg, *Aesthetics and Rock Art*. Morales Jr., "Considerations on the Art and the Aesthetics of Rock Art."

¹²⁶ Bal, *Double Exposures: The Subject of Cultural Analysis*, 15.ibid

a modest representative, a token of cultural difference, and as such it does not stand on its own.¹²⁷

If... We mean by art some kind of luxury, something to enjoy in museums and exhibitions or something special to use as a precious decoration in the best parlour, we must realize that this use of the word is a very recent development and that many of the greatest builders, painters or sculptors of the past never dreamed of it.... (We) are not likely to understand the art of the past if we are quite ignorant of the aims it had to serve... not as something nice to look at but as something powerful to use.¹²⁸

Gombrich's approach to art, as interpreted by Reinaldo Morales Jr., was based on the understanding that art has been, and continues to be an important and diverse activity, meaning different things to different people at different times. Gombrich made it clear that museums and galleries of the nineteenth-and twentieth-century art world, also viewed as the modern institutions of art, can only provide a limited selection of what art was and is.¹²⁹ Art theorist Donald Brook criticizes the modern art institutions for occasionally leading viewers to a misleading idea of art: «a fatal weakness of the art institution... as the defining authority of art in its essential conservatism.»¹³⁰

Morales Jr. explains that context is essential in order to understand art's role in the history of human expression, and that this is important for consideration of any art or artist from any time or period. Brooks, like others, are interested in finding a more inclusive definition of art. This other more inclusive term for art allows work outside the conservative institutional canon.

2.8 CROSS-CULTURAL ETIQUETTE

Scholar John Clegg argues that it is not only unreasonable, but also arrogant and demeaning to suppose that people with European origin are the only ones who have a capacity for aesthetic appreciation. Clegg and Heyd believe that we need to revise a way when discussing aesthetic appreciation of marks on rock. We need to think from the perspective and context of the people who made and lived with rock art. Heyd therefore calls for a *cross-cultural etiquette* (as in both Europeans and non-Europeans) with which it is essential to negotiate cross-cultural etiquette with regard to both aesthetic and the scientific consideration of rock

¹²⁷ Ibid., 78.

¹²⁸ Gombrich, *The Story of Art*, 37.

¹²⁹ Morales Jr., "Considerations on the Art and the Aesthetics of Rock Art," 68-69.

¹³⁰ D. Brooks, *What, Even Mona Lisa?*, Are: Art, Representation, Education (Perth: Perth Institute of Contemporary arts Ltd., 1992), 34.

art.¹³¹ In terms of art history, it is already a research discipline stretching across others such as cultural history, psychoanalysis, literature, mythology, neuroaesthetics a.o. Thus, Heyd proposes to adapt to a cross-cultural etiquette, which would be more including of rock art as well.

This was discussed in Manchester in 1993 in a debate over the notion that *Aesthetics is a cross-cultural category*. Anthropologist Joanna Overing was the opposed debater and she answered that the category of aesthetics is specific to the modernist era. It therefore «characterizes a *specific consciousness of art*».¹³² She continued with her claim that «the aesthetic is a bourgeois and elitist concept in the most literal historical sense, hatched and nurtured in the rationalist Enlightenment».¹³³ She also states that Kant's influence has «disengaged *the arts* from the social, the practical, the moral, the cosmological, and have made artistic activity especially distinct from the technological, the everyday, the productive.»¹³⁴

2.9 TRANSCULTURAL AESTHETICS

Art philosopher Peter Lamarque uses the term *transcultural aesthetics*, which is similar to Heyd's term *cross-cultural etiquette*. Lamarque uses the Chauvet cave as an example to explain his term. The Chauvet paintings, pose the problem of aesthetics and the universal applicability of art historical methodology. The fact that they were painted 32 000 years ago, and in a highly naturalistic style is challenging the art history paradigm.¹³⁵ Shortly after the discovery the French rock art expert Jean Clottes expressed: «I felt I was standing in front of some of the great artistic masterpieces of mankind».¹³⁶

Lamarque highlights a problem that we saw earlier, that art historians are uncomfortable with Palaeolithic artefacts. The paintings on the surface of the rocks naturally invite to description in aesthetic or art historical terms. There are a wide variety of familiar aspects in terms of interpretation: the techniques, use of material and pigment, but also the form and texture of

¹³¹ Heyd and Clegg, *Aesthetics and Rock Art*, 8-9.

¹³² J. Weiner, "Aesthetics Is a Cross-Cultural Category," (Manchester: Univeristy of Manchester 1994). In Dutton, *The Art Instinct : Beauty, Pleasure, & Human Evolution*, 65.

¹³³ Ibid.

¹³⁴ Dutton, *The Art Instinct : Beauty, Pleasure, & Human Evolution*, 65.

¹³⁵ P. Lamarque, "Paleolithic Cave Painting: A Test Case for Transcultural Aesthetics," in *Aesthetics and Rock Art*, ed. T. Heyd and J. Clegg (Hampshire, England: Ashgate Publishing Company, 2005), 21.

¹³⁶ The independent, 20 january, 1995, p. 21

the paintings, and how the paintings are located and adapted to the natural features of the cave wall. How are the motifs repeated and how close to natural representation are they? And how are the impression of the sheer power as a whole and the vitality of the depiction? On the other hand, Lamarque remarks, the paintings are un-interpretable. As Tomaskova argued, we can never know for certain their role in a cultural or social sense, as well as their attitudes, aspirations, values and beliefs of those who viewed the paintings thousands of years ago.

Lamarque is interested in finding a suitable definition for aesthetics, one that could transcend its own historical roots and be applied not just across time, but also across cultures, even back to those unknown worlds in the caves of the ice age.¹³⁷ In Lamarque's article, he uses cave paintings from the Palaeolithic era and the reason for that is that despite the immense cultural divide, between then and now, the paintings offer a sense of affinity that modern viewers experience.¹³⁸ One could therefore question if aesthetics could be transcultural? To this Lamarque answer is yes: «To the extent that underlying aesthetics are precisely such universally held human capacities as the ability to create intentional objects with meaning and value and the disposition to respond imaginatively and positively to artefacts of universal human appeal.»¹³⁹ But he concludes that the cave paintings are only works of art appropriated into our own traditions.¹⁴⁰ Perhaps then Lamarque would concur with Dissanayake and Brown's *artification*.

2.10 ARTIFICATION INSTEAD OF ART

It is within this discourse that a replacement of the word *art* with that of *artification* may lead us onto a new path for comprehending the marvellous world in the cave. Brown and Dissanayake state that «neuroaesthetics should not be limited to the arts, but should instead focus on all types of aesthetically appraised objects and phenomena.» The concept of art as known today is burdened with Eurocentric conceptions deriving from eighteenth century philosophy of fine art and was mainly created for the wealthy elite. Brown and Dissanayake, however, believe in a comprehensive scientific understanding of art, and this must include its manifestations in *all* human cultures. Not only does this view remove us from the *disinterested* aesthetic practices of Western Art, but also forces us to consider arts as not

¹³⁷ Lamarque, P. Heyd and Clegg, *Aesthetics and Rock Art*, 21-22.

¹³⁸ Lamarque, "Paleolithic Cave Painting: A Test Case for Transcultural Aesthetics," 33.

¹³⁹ *Ibid.*, 34.

¹⁴⁰ *Ibid.*, 35.

necessarily as *beautiful* in our Western conception.¹⁴¹ In our context it will make sense to read this also as aesthetics broadly speaking and should not be restricted to the Western tradition of fine arts. This is an excerpt from Dissanayake and Brown where they argue further for the reason to reconsider our aesthetic view:

And a proper understanding of the arts does not benefit from a narrow (neuro)aesthetics of perceptual preferences, but instead requires (*neuro*)*artsology* that seeks to explain the full array of cognitive, neural, and cultural phenomena involved in the universal behaviors of *artification*.

A glimpse of the arts of non-Western cultures not only compels us to confront art practices that are removed from the "disinterested" aesthetic practices of Western fine art, but also forces us to consider the arts as behaviors that may have no necessary connection with beauty.

We suggest that it is profitable to consider the arts not as objects (paintings etc.), quality of objects (beauty etc.) ... But as *behaviors of artification*- things that people do ... Artification refers to the universally observed penchant of human individuals and groups to *make ordinary reality extraordinary*.

When we look at the context for the production of the arts in premodern societies around the world and throughout time, we find that they are notably practiced in ritual ceremonies.

We suggest that one of the most significant emotions that drive the arts is social affiliation, an emotion of strong reward value. This is tied in with our view that one of the most important functions of the arts is to create and reinforce a sense of social unit so as to promote cooperation and cohesion within social groups.¹⁴²

Dissanayake maintains that early humans, like other animals, could distinguish between ordinary and the extra-ordinary. Unlike other animals, however, their more complex mental endowments gave them the unprecedented ability to see themselves (rightly) as special creatures, different from the rest of nature.¹⁴³

According to Dissanayake, this uniqueness of human art does not (or does not only) reside in being symbolic. Similar to the bowerbirds, which are known for their elaborate nests of woven in complex design out of hundreds of sticks and, at times, painted with pigments from crushed leaves or oils¹⁴⁴ human *making special* is undeniably based on tendencies inherited to elaborate and shape our surroundings. Unlike animals, humans have more conscious control and thought about their creative endeavours. Humans shape and embellish in a variety of ways within new contexts and under different circumstances, as if saying: «this must be

¹⁴¹ Dissanayake and Brown, "The Arts Are More Than Aesthetics: Neuroaesthetics as Narrow Aesthetics," 45.

¹⁴² Ibid., 45-46.

¹⁴³ Dissanayake, *Homo Aestheticus : Where Art Comes from and Why*, 94.

¹⁴⁴ K. Coe, *The Ancestress Hypothesis: Visual Art as Adaptation*, The Rutgers Series in Human Evolution (Rutgers University Press, 2003), 69.

good because it feels so good!» *Making special*, or *artification*, gave ritual significance in gatherings, and united people in communal belief and religion.¹⁴⁵

For Dissanayake, art is a behavioural predisposition called forth under certain circumstances, like making important objects and activities special in situations of high emotional and survival investment. This provides an etiologically acceptable way for understanding art as a normal part of the evolved behavioural repertoire of the human species. She means that the arts were *enabling mechanisms* for the performance of selectively valuable behaviours selected-for in their own right.¹⁴⁶

2.11 MAKING SPECIAL

As she describes in her book *Homo Aestheticus* is interested in how art became so central to the early *H. Sapiens*. She states that there is an aesthetic ability innate in every human being, and that art is like another essential element, such as food and shelter. In short, her point of view is that art is a product of what she calls *making ordinary reality extraordinary*, also called *making special*, and this includes not only objects but also behaviour.

In *Homo Aestheticus* she highlights the evidence of how far back people have been *making special*. The evidence goes as far back as 300,000 years, which is ten times earlier than the supposed beginning of the making of art (such as the cave paintings in France and Spain in Upper Palaeolithic Europe era). There have been numerous sites indicating the *making special*. In sites associated with human dwellings, pieces of red ochre and hematite have been found which often originated from places much further away. That these colouring pigments were used for painting and decoration is not hard to believe, considering this is a still ongoing tradition in many cultures. The aforementioned findings of the Blombos ochre piece are very early examples of *making special* as well. Dissanayake also refers to South African researcher Deacon who has found shaped ochre pencils that were used at occupation sites from the Middle Palaeolithic period. This indicates that drawing and marking became more and more significant as time went on.¹⁴⁷

¹⁴⁵ Dissanayake, *Homo Aestheticus : Where Art Comes from and Why*, 95.

¹⁴⁶ *Ibid.*, 96.

¹⁴⁷ *Ibid.*

There were signs of recognising *specialness*, as long as millions of years ago. In the cave of Makapansgat in South Africa a group of researchers discovered in 1925 bones of Australopithecus, a predecessor of humans who lived three million years ago. Among the bones was a water-worn, reddish jasperite pebble that bears a striking resemblance to a human face. The nearest known source of this variety of stone is twenty miles from the cave, which could imply that our ancestors saw this pebble with the face on it and decided to keep it.¹⁴⁸

Dissanayake also mentions archaeologists discovering this kind of similar behaviour in the Middle Palaeolithic era (ca.120,000 to 35,000 B.P.) where wandering Mousterian hominids (such as the Neanderthal and the early homo sapiens sapiens) have been noted to spot, pick up and bring with them particular objects. These objects could be unusual fossils or rocks, pyrites or concretions. Later in the early Aurignacian (35,000 B.P.) they would pick exotic materials like shells and bring it with them to perforate them into beads after travelling a hundred kilometre distances.¹⁴⁹ Could the pebble and the other *special* objects mark the beginning of *art*?

To Dissanayake, these activities show more than just a *curiosity*, which are the mental qualities usually ascribed to them. She suggests that instead they show an appreciation and deliberate creation of *specialness*. Why? No one knows, but she speculates it included pleasure and delight that was excited before and apart from their application to utilitarian or symbolic ends, like personal and group identification or status differentiation. Dissanayake claims that the faculty of appreciating specialness eventually led to the employment of special things for important utilitarian and symbolic purposes, not the reverse.¹⁵⁰

2.12 WHY PURSUE ROCK ART?

We may never know whether a certain set of marks on a rock was intended for aesthetic attention, or if it was some by-product of a different activity. Heyd maintains, however, that

¹⁴⁸ M. F. Péricles and B. V. Maurice, "Neuropareidolia: Diagnostic Clues Apropos of Visual Illusions Neuropareidolia: Pista Diagnóstica a Partir De Uma Ilusão Visual," *Arquivos de Neuro-Psiquiatria* 67, no. 4 (2009): 16.

¹⁴⁹ Dissanayake, *Homo Aestheticus : Where Art Comes from and Why*, 96-97.

¹⁵⁰ *Ibid.*

this should not stop us from attending the aesthetic value of the old marks. Considering the lack of cross-cultural information, it is true that we have no security in our interpretation. Still it is possible to approximate as well as adopting the mind-set and embody the appreciation of those who made the marks by taking note of the general life conditions in the area, and attribute sufficient complexity to their life experiences.¹⁵¹

Morales Jr. asserts that if assuming that all art production and reception must be limited to specific disinterested and aesthetic realms, even the most rudimentary and critical analyses will not be able to lead us anywhere. He thinks modern anthropologists and art historians have made positive progress in moving beyond their traditional nineteenth-century theories and disciplines, but where the limitations are most obvious is within rock art:

The imaginary segregation of aesthetic sensibility from the practical aspects of living not only ignores that fact that there is much art with practical uses in *every* culture, but also serves to impose an illegitimate dialectic upon the aesthetic sensibilities of non-western cultures. To acknowledge the aesthetic considerations manifested in, for example, American Indian art is not to deny the art's communicative, functional or spiritual significance. In fact, it serves to plate it alongside the most meaningful expressions of Western Cultures. Coming to terms with the art-ness of rock art complements the understanding of prehistoric and non-Western visual expression and enlightens the overall conception of art as a pan-cultural human phenomenon.¹⁵²

In the absence of a reasonable argument that that art is a recent manifestation of culture (Western or non-Western), Morales Jr. claims that it is likely that production, reception and criticism of art existed also in prehistory. He believes that the formal evidence is clear, just by looking at found materials, techniques, and the diversity in rock art. All of this should prove signs of traditions that were as sophisticated and diverse as much modern art.¹⁵³

Heyd argue it is important to pursue more research in rock art aesthetics. First of all, if one has an object from another society that exhibits aesthetically important values to us, then it is reasonable to think that it is the same for the people form the other society. As we saw in Dutton's thought experiment, it is not unreasonable to distinguish the difference between carved merchandise for sale and a carved sculpture embedded with meaning; it needs, however, a cultural competence. In a similar way, this can also be applied to rock art. Heyd states that much of the rock art images show qualities of aesthetics in the same terms as we

¹⁵¹ Heyd and Clegg, *Aesthetics and Rock Art*, 8.

¹⁵² Morales Jr., "Considerations on the Art and the Aesthetics of Rock Art," 71.

¹⁵³ *Ibid.*, 69.

appreciate in European cultures. Secondly, expressive values such as narrative, proportion, quality of line and so on were likely to be important if we find them expressed there.¹⁵⁴

As Dutton conveys from his fieldwork with the Sepik people, this is also obvious with their artwork/woodcarvings. It is expressed with a passionate intensity comparable to Van Gogh or other great artists.¹⁵⁵ And why should the aesthetic quality be the most important? A.M. Ludwig proposed that «the visionary or magic function of these media...was perhaps more important than aesthetics.»¹⁵⁶ If this seems to be the case, we might have significant sources of information on those societies, from which we will be able to learn. An example of this is Lewis Williams's research, which I will explain in chapter 5.¹⁵⁷

2.13 SUMMARY

The discussion in this chapter has looked at the terms *art* and *artefact*, and what it means to us in the Western modern world vs. the pre-modern/prehistoric world. As we have seen this dilemma has engaged many philosophers in the quest for the most fitting terminology and whether it is Heyd's *cross-cultural etiquette* or Lamarque's *transcultural aesthetics* they both struggle with the fact that it is influenced from our Western point of view. Dissanayake and Brown with their new term *artification* avoid this because *artification* is a universal term which does not necessarily have associations with the visual arts, but can include human behaviour where *art* could also mean communal ritual and bonding. As stated by Morales Jr.: «In short, there is little reason to assume that simply being prehistoric somehow means pre-art»¹⁵⁸

¹⁵⁴ Heyd and Clegg, *Aesthetics and Rock Art*, 4-5.

¹⁵⁵ Dutton, *The Art Instinct : Beauty, Pleasure, & Human Evolution*, 80.

¹⁵⁶ A.M. Ludwig, "Culture and Creativity," *American Journal of Psychotherapy* 46 (1992): 459.

¹⁵⁷ Heyd and Clegg, *Aesthetics and Rock Art*, 4.

¹⁵⁸ Morales Jr., "Considerations on the Art and the Aesthetics of Rock Art," 70.

CHAPTER 3

WHAT WERE THE ARTS FOR?

Before entering the topics of genetics, the main subject of this chapter, we will briefly return to questions akin to those raised in chapter 2: Did the paintings have meaning for the Palaeolithic people who made and observed them? What meaning can be found in other signs including dots, squares, and other lines which accompany the animal paintings? Some believe this could be a primitive form of writing, but could it be more literal? Like the hunting-magic theory where a hunter insures the success of killing an animal if it has been painted with arrows or rocks thronged at them.¹⁵⁹

When the cave paintings in Europe appeared, people came up with different hypotheses for the cause and meaning to these signs/images. What led them to paint images on the walls inside the caves? Different scholars (below) have provided us with theories to why this happened, but often the theories say more about the scholars and the time they lived in than the paintings itself.¹⁶⁰

3.1 ART FOR ARTS SAKE

The idea that humans have an *art instinct*, which is an inherent desire to decorate their surroundings and themselves, was prevalent in the nineteenth century. This innate sense of aesthetics is special for the human species, and was promoted as an idea called *art for art's sake*. People believed humans created art for the sheer love of beauty, which, in fact is supported by scientists; still they maintain that this is not the sole reason for creating these paintings. Humans do have an aesthetic impulse and take pleasure in pursuing seemingly impractical activities, but the effort it would take to paint the caves of Chauvet or Lascaux suggests that the artists were motivated by more than a simple pleasure.¹⁶¹

3.2 SYMPATHETIC MAGIC

Archaeologist Salomon Reinach was the representative of a new theory of *sympathetic magic* and believed that art fulfils a social function and aesthetics are culturally relative. He and his

¹⁵⁹ Gardner and Kleiner, *Gardner's Art through the Ages : A Global History*, 8.

¹⁶⁰ Stokstad and Cateforis, *Art History*, 10.

¹⁶¹ *ibid.*

followers proposed that prehistoric cave paintings could be the product of rites to strengthen clan bonds and induce ceremonies to increase the fertility in animals they depended on for food. Reinach believed the cave paintings were expressions of *sympathetic magic*, which is still encountered in many societies today. *Sympathetic magic can be defined as*, for example, things that look like each other can have a psychological influence on each other. Meaning for example that, if a bison is painted lying down, this will ensure that hunters will find their prey sleeping. A ritual killing of the bison in a picture would guarantee victory over the beast itself.¹⁶² The archaeologists Abbé Henri Breuil took the ideas of *sympathetic magic* further in the early 1920s. He concluded that the cave paintings were early forms of religious expression and that the caves were places of worship and locations for rites where paintings aided rituals and functioned as instruction.¹⁶³

3.3 STRUCTURALISM HYPOTHESIS

In the second half of the twentieth century, scholars had a tendency to base their interpretations on different scientific methods and current social theory. The French scholars Annette Laming-Empeaire and Andre Leroi-Gourhan dismissed the *sympathetic magic* theory. They based their research on findings from early human settlements which revealed that animals which were most frequently used for food were not the same animals depicted in the paintings. These two French scholars claim that the cave images seemed organized and had different animals dominating different areas of a cave.¹⁶⁴ Although the details were argued over, Laming-Empeaire concluded that cave images are meaningful pictures: «the paintings might be mythical representations... they might be the concrete expressions of a very ancient metaphysical system... they might be religious, depicting supernatural beings. They might be all these at one and the same time...»¹⁶⁵

These are just some of the popular older theories that are no longer dominating this research area anymore. Modern research and new eyes give new perspective on the artworks. For example, Palaeolithic scholar Leslie G. Freeman argued in the 1980s that the bison in Altamira are not depicted dead, asleep or disabled, but in mating season. The bison are on the ground

¹⁶² Ibid.

¹⁶³ Ibid.

¹⁶⁴ Ibid.

¹⁶⁵ A. Laming-Empeaire, *La Signification De L'art Rupestre Paléolithique : Méthodes Et Applications* (Paris: Picard, 1962), 236-37.

dust wallowing, which is a common behaviour during breeding season. In addition, better dating techniques have enhanced the ability to date the works more accurately. Chauvet cave, as previously mentioned is an important reminder for how much the discovery of one new site can turn around everyone's arguments.¹⁶⁶ These older theories might be obsolete today, but they still function in part as a foundation for new ones.

3.4 GENES AND SELECTIVE PRESSURES

In a recent study by Dahlia W. Zaidel et al., a group of cognitive neuropsychologists, it is emphasised that artistic production is a result of many selective pressures, at different times, which need not have been related to aesthetic preference originally. As Zaidel *et.al.* explain:

Artistic activities and aesthetic experiences, broadly conceived, seem to have evolved by *integrating preexisting neural systems common to other primates with innovations that occurred throughout the human lineage*. Such a process intertwined with the evolution of cognitive and affective processes linked to other human activities was the result of more than one selective pressure, probably involving more than one adaptive advantage. Once the necessary neural systems were in place, humans began expressing and experiencing symbolic meaning through many different forms of material culture. Such activities were intimately related to social and cultural practices. They were likely profoundly affected by group size, make-up (kin and nonkin living together in the same group), and social dynamics. The challenge for future research is to characterize the evolutionary modifications to the underlying neural systems with greater detail and to determine the way they coevolved with other cognitive faculties in relation to the interplay of mutually reinforcing or competing selective pressures. (My italics).¹⁶⁷

Zaidel et al. base their evolutionary theory on evidence deriving from the *biology* of evolutionary genetics. The appearance of aesthetics in evolution has, however, also produced a substantial amount of literature from the hands of philosophical psychological evolutionists. I find it interesting that these philosophers seem to be solely concerned with Darwinian mutation based evolution, and not with the now fully accepted cultural evolution, where genes are not changed (cf. Appendix).

¹⁶⁶ Stokstad and Cateforis, *Art History*, 11.

¹⁶⁷ D. W. Zaidel et al., "An Evolutionary Approach to Art and Aesthetic Experience," *Psychology of Aesthetics, Creativity, and the Arts* 7, no. 1 (2013): 106.

3.4.1 ART AS A BY-PRODUCT

To be able to understand how to view prehistoric pictures as *artefacts* or *art*, we must discuss how art evolved in the first place. Is the appreciation and creation of art a pan-cultural universal behaviour? And does this occur naturally in our development? Dutton (from chapter 2) puts it: «Human beings are born image-makers and images enjoyers.»¹⁶⁸

What is the evolutionary explanation for this? Dutton makes it clear that the gold standard for evolutionary explanation is a biological concept of an adaptation. «It is an inherited physiological, affective, or behavioural characteristic that reliably develops in an organism, increasing its chances of survival and reproduction.» But how do we differentiate between the adaptations (i.e. changes in gene expression as an adaptation to environment) and the endless features of human biology that are not part of this process?¹⁶⁹

According to classic Darwinian evolutionary theory, anything that is not an adaptation, but follows an adaptive process must fall into two categories. It can either be (1) a one off random or accidental effect of gene combination, as a result of gene mutations or (2) a causally related by-product of an adaptation or arrangement of adaptations (i.e. without any clear biological function for survival).¹⁷⁰

Dutton elaborates on categories of how we can connect evolution to the arts. Humans are concerned with ancient, persistent patterns of human interests, capacities and preferences. Random mutations as a result of changes in DNA structure are dependable drivers of evolution, to be sure, but they are not necessarily the patterned features of its end results. Can arts be best understood as by-products of adaptations in an on-going evolution? There is a certain ambiguity in Dutton's position as to the role of the genetic evolution of art.¹⁷¹ He is sceptical to regard all art as a by-product of evolution: «calling arts for by-products cannot make sense in light of the ancient origins of aesthetics». He claims that art should not be dismissed as by-products of a collision of human biology together with culture. Arts intensify the experience, enhance it, extend it in time and make it coherent.¹⁷²

¹⁶⁸ Dutton, *The Art Instinct : Beauty, Pleasure, & Human Evolution*, 33.

¹⁶⁹ *Ibid.*, 91.

¹⁷⁰ *Ibid.*

¹⁷¹ *Ibid.*

¹⁷² *Ibid.*, 102.

3.4.2 ART AS A SPANDREL

The by-product of adaptation has also been defined as a *spandrel* (Fig. 15), an architectural term, originally referring to the triangular spaces formed by the intersection of rounded arches or windows with a dome. Hence, these are architectural by-products that have no functional significance on their own. Palaeontologist Stephen Jay Gould defines spandrels for evolution as such: «spandrels define a major category of important evolutionary features that do not arise as adaptations.» He claims that the human brain is rich with spandrels: «In fact, it must be bursting with spandrels that are essential to human nature and vital to our self-understanding but that arose as non-adaptations, and are therefore outside the compass of evolutionary psychology». Dutton criticizes Gould for not submitting which type of behaviour are spandrels and not adaptations, but later in Gould's career he claim that writing and reading are spandrels. Dutton maintains that: «his spandrel-laden brain turns out in the end to be a behavioural and cultural equivalent of the *blank slate* - an array of blank spandrels, actually: unutilized, but ready to be picked up and decorated with whatever values, interests and capacities history and culture have in mind». ¹⁷³

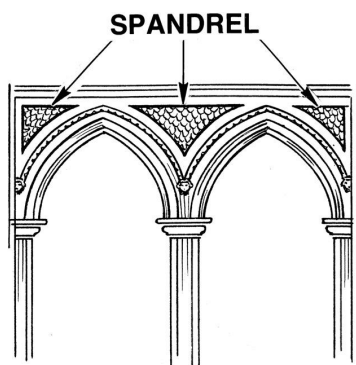


Fig. 15 Example of spandrel

The philosopher Stephen Davies, argues that if one does choose to view humans' creation and appreciation of art as a part of natural selection and grounded in biological nature, there are two main possibilities:

- (i) Art behaviours are adaptations, which is to say they emerged as transmissible capacities that increased the ecological fitness of those who displayed them, so that their possessors parented more extensive and far-reaching lineages; or

¹⁷³ Ibid., 93.

- (ii) Art behaviours are spandrels, that is, adventitious by-products of adaptations, without adaptive significance in itself.¹⁷⁴

Davies points out how quick some theorists are to label things as a spandrel. He believes it involves far more than identifying something as a by-product of some form of adaptation. He states that art as an adaptation cannot be dismissed on the grounds that art could be a by-product of the general intelligence evolved in *Homo sapiens*. Spandrels can be identified as such, but only after the possibility that they are adaptations in their own right which have been tested and defeated.¹⁷⁵

There are, indeed, several theorists which suggest that art *is* a spandrel. In his book *The Prehistory of the Mind*, archaeologist Steve Mithen puts forth the theory that art, science and religion all appeared as by-products of cognitive developments.¹⁷⁶ The British naturalist Alfred Russell Wallace in *Darwinism* narrows in on certain aspects of art, such as dance and music, and claims this is a by-product of the power of our brain and its excessive vitality¹⁷⁷

3.4.3 FORM BECOMES NORM

The slogan for Davies' objection against art as a spandrel is: *form becomes norm*. He suggests that traits that feature normalcy and *fitness*, even if they started out as spandrels, take on the function to honestly signify *fitness* (or unfitness); thus, they take on adaptive significance. The foremost examples he uses are physical traits. How we view others in terms of symmetry, proportion, and balance affects how we view each other. Depending on these factors we get an indicator of *fitness*, which is signalling health and immunity from disease. This structural integrity, as Davies calls it, is appreciated as an aspect of human attractiveness. E.g. symmetry in human faces correlates with judgments of beauty.¹⁷⁸

Anything that differs from the norm, like having an extra nipple, or blue teeth, or having no navel at all, is against what Davies call the structural integrity. You would be sceptic towards

¹⁷⁴ Davies, "Why Art Is Not a Spandrel," 333-34.

¹⁷⁵ *Ibid.*, 337.

¹⁷⁶ S. J. Mithen, *The Prehistory of the Mind : The Cognitive Origins of Art, Religion and Science* (London: Thames and Hudson, 1996).

¹⁷⁷ A. R. Wallace and C. Darwin, *Darwinism : An Exposition of the Theory of Natural Selection : With Some of Its Applications*, 2nd ed. ed. (London: Macmillan, 1889).

¹⁷⁸ J. H. Langlouis and L. A. Roggman, "Attractive Faces Are Only Average," *Psychological Science* 1 (1990).

someone who had one or all of these characteristics and you would ask: would they make healthy offspring?

According to Davies, the same thing can be applied to all aspects of human behaviour. Failure to develop in the customary fashion, such as dysfunction in language, would be seen by others as a neural problem or some other problem. The same goes for social aspects – for instance, a sense of commitment and team spirit would be beneficial in the every day life in the Upper Palaeolithic era. If art appreciation and creation was as widespread in prehistoric times as Davies believes, a person who showed no interest in any of the art forms would be as unappealing as someone without intelligence, humour, social grace or a navel.¹⁷⁹ Davies believes that an interest in art emerges spontaneously, as a part of the human's normal development, and will thereof signify the norm (being normal). If there is a selection for art behaviour (including both creating and appreciating art) based on that normalcy, then this is behaviour that could not count as spandrels.

Davies finds art's long history and great originality as a nuanced signal of fitness, reflecting huge individual differences. We are not only drawn to what is very normal, but also the unusual,¹⁸⁰ i.e. diversity is selective pressures on our aesthetic minds during evolution. Davies states, that the variety in art interests and different specializations make art potentially a rich indicator of many different capacities relative to *fitness* enhancement. He therefore concludes that art is not a spandrel.¹⁸¹

3.5 ART AS AN EXPERIENCE

Philosopher Hans Georg Gadamer was concerned with art as an experience in his book *Die Aktualität des Schönen. Kunst als Spiel, Symbol und Fest* (1977). Gadamer seeks the anthropological prerequisite for an experience of art in order to achieve an understanding of what art is. For him this includes both traditional and modern art.¹⁸²

Gadamer finds that as the attention in art increases towards itself, it eventually creates a divide between *traditional art* and art that breaks with the traditional conventions. This opposition

¹⁷⁹ Davies, "Why Art Is Not a Spandrel," 338.

¹⁸⁰ Langlouis and Roggman, "Attractive Faces Are Only Average."

¹⁸¹ Davies, "Why Art Is Not a Spandrel," 341.

¹⁸² K. Bale, *Estetik : En Innføring* (Oslo: Pax, 2009), 14; H. G. Gadamer, "Fra Die Aktualität Des Schönen : Kunst Als Spiel, Symbol Und Fest (1977)," (Oslo: Universitetsforl., cop. 2008, 2008).

creates a challenge if we want to understand what art is as a whole, that is, if we include both the art of the past and more contemporary art. Gadamer proposes that the terms play, symbol and *Fest* (a social gathering) has a leading role in this. An artwork is a result of a working process in which it is *released* when it is completed. He finds that in the term *artwork* itself is the notion that the *work of art* will be presented in front of an audience, regardless if it ever meets the audience or not.¹⁸³

This is why Gadamer writes about the experience of art rather than art as an object: the *spiel* which he uses refers to the anthropological prerequisites for art experience. This also includes sports, making visual arts, acting, music and dance. With *Spiel* he is particularly thinking of movement with no aim, because the focus is on the act itself. Lastly and foremost it is about an experience in its own right; freedom, fascination, happiness, pleasure and forgetting yourself. This idea concerns both traditional and contemporary art. Gadamer maintains that the artwork is a form of communication that does not necessarily deal with conceptual meaning but encourages the viewer or listener to play along.¹⁸⁴

This is very relevant to prehistoric art and how we should consider a work of art and its quality regardless of conceptual meaning. Gadamer points out that symbolical aspect of the quality of an artwork are not just a carrier of meaning, but also something more: the artwork can carry something unique, such as having a special atmosphere or aura (i.e the cave paintings). It is through the symbolic that the artwork contributes to a potential community; as we gather around the artwork it becomes a *Fest*. Gadamer explains that *Fest* is community in its most completed form, and the celebration is an image of the experience of art.¹⁸⁵ Not only does this remind us of Dissanayake's approach to art as a ritualistic experience, but also, I believe, it show how prehistoric art can carry a special atmosphere and aura, even if it should lack conceptual meaning.

Another scholar who is concerned with art as an experience is philosopher John Dewey. In his book *Art as Experience* he argues, like Gadamer, that art's anthropological foundation is in celebration and rituals.¹⁸⁶ Due to modernity the different functions of society have been separated from each other. In Dewey's opinion this has unfortunately led to the divide between

¹⁸³ Bale, *Estetikkk : En Innføring*, 15.

¹⁸⁴ *Ibid.*, 15-16.

¹⁸⁵ *Ibid.*

¹⁸⁶ J. Dewey, *Art as Experience*, A Perigee Book (New York: Berkley Publishing Group, 2005).

fine arts, which are now viewed as finished works closed off in museums, and what we know as the daily experience. His project is to re-establish the aesthetic continuity with ordinary life processes. To Dewey, aesthetic experience and art are two sides of the same coin. Experience represents increased vitality, which means active and awake interaction with the world.¹⁸⁷

3.6 ART IS UNIVERSAL

The evolutionary psychologists John Tooby and Leda Cosmides regard art to be universal, and that each human being was designed by evolution to be an artist. They claim that evolution drive mental development towards (evolved) aesthetic principles. This happens from infancy, where the original artistry medium is a self-orchestrated experience, and the audience is the self. Although it is difficult to share most of the self-generated aesthetic experiences (such as imagined scenarios) with others, there are forms of expression that can be experienced by both the creator and others; an example is sounds that are made for aesthetical purposes, such as music and words. As soon as the audience extends further than the self, the individual's aesthetic experiences become social, and the motives for its production could become mixed.¹⁸⁸

When the individual aesthetic experience is not only shared but has the availability to re-perform and be repeated then results will be improved. Tooby and Cosmides explain how art forms develop from individual to socio-cultural performances, creating the cultural category that we label as *art*. The invention of further forms of additional recording material (photography, paint, clay etc.) has increased the audience-accessible art forms throughout history. Tooby and Cosmides suggest that the socially recognized arts are only a small part of the realm of human aesthetics.

I find interesting to contemplate on how we might have evolved just *some* of our other aesthetic behaviours. Perhaps, if certain behaviours were granted the same attention and repetition (over a long period) it also could evolve into what we define as the fine arts today. The act of painting, for example, have been *focused* on for as long as we know in human history; it has been practised, repeated, imitated, documented and discussed etc. which results in paintings achieving a *fine art* status. This is also Dissanayake's belief who claim that we still

¹⁸⁷ J. Dewey, Art as Experience, in: Bale, *Estetikkk : En Innføring*, 17.

¹⁸⁸ J. Tooby and L. Cosmides, "Does Beauty Build Adapted Minds? Toward an Evolutionary Theory of Aesthetics, Fiction, and the Arts," *SubStance* 30, no. 1 (2001): 25.

practice vestiges of different older art forms which she regards to be art. Her example is the wedding ritual; in which we walk in a certain way, talk in a certain way, dress in a certain way etc. None of these rituals are considered as art today,¹⁸⁹ but if Tooby and Cosmides' idea is right, they might be art forms not developed and improved enough, to be able to climb the art status ladder.

3.7 WHAT *WERE* THE ARTS FOR?

«Only by knowing where art comes from biologically will we know what it is and what it means.»¹⁹⁰

Ellen Dissanayake.

Asking «what the arts were for?» when looking at prehistoric art, Dissanayake argues, may be a way to learn what the arts are for today? Her point is that our society today is very different from the society in which art evolved. We have to go back to see what the arts seemed to be for us as the foragers and hunters in prehistoric times. She finds it appropriate to compare what the arts are for the indigenous aborigines in order to learn how it was for the prehistoric people. Because in traditional societies the arts are pre-modern and since we cannot talk to the artists from the Upper Palaeolithic, it helps to study people who can be assumed to practice art in a similar way.¹⁹¹

One aspect is through ceremonial, ritual contexts that are performed in a multimedia way. This is a different multimedia from how we know it (images, animation, sounds, video etc.). What Dissanayake means by multimedial, is the different visual arts performed, such as costume, dancing, body decoration, song and poetic language etc. All of these things happen at the same time in the ritual, performed as one and experienced as one. This is very different from how we experience art today. In traditional/pre modern art, people are *participating* and there are *no* bystanders who are observing. *Traditional art* is also very dynamic and can go on for a very long period of time. And anybody, whatever their level of ability, can participate.¹⁹² As a

¹⁸⁹ Ellen Dissanayake in an interview June 24th 2013 <https://www.youtube.com/watch?v=tVJeGd7AIMA> by Australia., "What Are the Arts For?."

¹⁹⁰ Dissanayake, *Homo Aestheticus : Where Art Comes from and Why*, xix.

¹⁹¹ Dissanayake from Youtube interview by Teaching and Learning in Australia., "What Are the Arts For?."

¹⁹² Ibid.

matter of fact, the most fundamental aesthetic is that there is no meaning without participation, as stated by John Chernoff, a scholar of West African drumming.¹⁹³

This is again very different from how we experience art today, where it is more of a milieu for specialists, where you have to be very talented or skilled to participate. If you don't have the talent, you simply do not make art. In a tribe, however, it is significant that everyone participate in the arts; it is important for building the community. This is stated in an excerpt from a book based on the San Bushmen beliefs in Africa:

We dance because it is fun. We also dance because it makes us feel better about each other. It fills our hearts with happiness and takes away any bad feelings we might have for another person. Dancing keeps us healthy. In the hands of a Bushman doctor, our sickness may be taken away and our life revitalized.¹⁹⁴

A significant difference is that the arts that pre-modern or traditional societies were involved in were very important. These rituals had to be done with the aim to cure illness, make hunting expeditions or life transitions easier or to manifest life events such as death, birth and marriage. These ceremonies signify what is the most important to a community and we have vestiges of them still. As mentioned above, Dissanayake argues that the wedding is a sort of vestige of practicing art. We dress in a special way, walk in a special way, play special music, and have a special way of speaking. These are still strong rituals that we have, but we do not necessarily think of them as arts.¹⁹⁵

Another aspect of pre-modern society is how children learn about society through the arts. They were practical and functional and not just hanging in an art museum for the sake of *art*, as Dissanayake calls it. People in pre-modern societies spent a lot of their materials, resources and energy on this. They would clear spaces, design the area, make costumes, and paint themselves.¹⁹⁶

An example could be the case of the San Bushmen, where preparing the paint itself is a lengthy process. Lewis-Williams tells of a man named Mapote who learned how to make the red ochre

¹⁹³ J. M. Chernoff, *African Rhythm and African Sensibility* (Chicago: University of Chicago Press, 1979), 23; Dissanayake and Brown, "The Arts Are More Than Aesthetics: Neuroaesthetics as Narrow Aesthetics."

¹⁹⁴ B. Keeney, *Ropes to God: Experiencing the Bushman Spiritual Universe (Profiles of Healing)* (Ringier Rock Press, 2003), 23.

¹⁹⁵ Dissanayake from Youtube interview by Teaching and Learning in Australia., "What Are the Arts For?."

¹⁹⁶ Ibid.

paint in the San bushman way. Mapote distinguished between regular red ochre and red ochre called *qhang qhang*. The *qhang qhang* sparkled and glistened (and has often been associated with *altered states of consciousness* and potency) and should be heated and grounded to a fine powder by a woman during a full moon. For it to become paint, the blood of a freshly killed eland (Africa's biggest antelope) is needed. Of all the pigments used to paint it was only the *qhang qhang* (red ochre) that required this procedure.¹⁹⁷

It is not a far-fetched idea to imagine that these same rituals and ideas could have originated in prehistoric societies. With all of this in mind, Dissanayake finds it hard to answer what are the arts for today. She reminds us of the vast time aspect we are dealing with and argues that this is proof of how being artistic is deeply embedded into all of us through thousands of years of dealing with arts in new and different ways. This is reflected in young babies; they suddenly begin to sing and move, play with words; if you give them a marking instrument, they will mark with it; they love to play, and pretend.¹⁹⁸

3.8 SUMMARY

Perhaps art evolved, not as a by-product but as a unique and important behaviour that we have made use of over thousands of years. Dissanayake believes that this could be the case if we again look at children and how they imitate their grown-ups and their surroundings; if the arts were so important to them, this would have been passed down to their children. Today there is less imitating of artistic practices, and instead children imitate parents driving a car or working on computers. This is because art is more removed from the ordinary life today, and more installed in an institution.¹⁹⁹ Nothing, as in for instance the Upper Palaeolithic period, was made artistically without it having huge importance. Both Leo Tolstoy and Charles Murray argue that the best art is produced in societies that believe in something.²⁰⁰ The arts, it has been argued so far, is something more than a by-product or a spandrel. It may have started out as a spandrel, but developed into a fitness enhancing tool as a way of creating community, or what Davies claims, as a sign of normalcy.

¹⁹⁷ J. D. Lewis-Williams and D. G. Pearce, *San Spirituality : Roots, Expression, and Social Consequences*, African Archaeology Series (Walnut Creek, Calif: AltaMira Press, 2004), 101-02.

¹⁹⁸ Australia., "What Are the Arts For?."

¹⁹⁹ Ibid.

²⁰⁰ Dutton, *The Art Instinct : Beauty, Pleasure, & Human Evolution*, 239.

CHAPTER 4

HOW TO LOOK AT ROCK ART

- «To understand the cave, you have to go outside the cave.»
- «Where?»
- «Everywhere! Looking at the different cultures, you will learn and understand. There are many different ways of looking at cave art.»²⁰¹

From the documentary *Cave of Forgotten Dreams*

How do we experience something aesthetically that was made 40-100,000 years ago? This is one of the conflicting aspects of rock art aesthetics. According to Lewis-Williams it is difficult for westerners to confront complex panels such as the example of San rock art in Africa (Fig. 1). Viewers do not know where to start. Do we start left to right as with a traditional reading pattern, or the opposite way?

Not knowing where the painting begins or ends, a frustrated westerner might break up the panel into different clusters of images. This would be done preferably with images that seem to have been painted by the same painters at a single moment, thus resulting in excluding parts of a bigger picture. Usually one narrows in on a part of the image where actions are depicted and might suggest some narrative or clues. Lewis-Williams maintains that modern viewers lose sight of the panel as a whole and therefore loses what meaning it had to the San people.²⁰²

One of Lewis-Williams main points of research has been to study how the painters added new motifs to the art panels, and how their contributions relate to the images which were already there. According to him, it is essential to be aware of how the large and complex panels were made. It has been confirmed through research that the paintings accumulated over many years, and were not made at one certain moment. Lewis-Williams finds it unreasonable that they were made with a distinct ending-form in mind.

One central clue in Lewis-Williams method is to compare the paintings with the San myths; the paintings reflect the myths as they are both open-ended and invite generations of painters

²⁰¹ W. Herzog, "Cave of Forgotten Dreams," (2010).

²⁰² J.D. Lewis-Williams, "The Imagistic Web of San Myth, Art and Landscape," *South african humanities* 22 (2010): 4-5.

to participate in one great work of art (I will elaborate on the connection between myths and San paintings in chapter 5). The reason why the San paintings appear to us like they do today, is that their traditional lifestyle ended and so they stopped painting.²⁰³ In the aboriginal culture in Northwest Australia, however, rock art remains a vital component even now. To this day, they still paint to honour their traditions at the rock art sites where they mainly re-paint over previous work, in order to please their ancestors.²⁰⁴

Lewis-Williams method in deciphering the meaning of rock-art goes through one particular topic: the San paintings; the results of his studies becomes the basis for how to interpret even rock paintings of the Upper Palaeolithic era; in both cases shamanism and altered states of consciousness has a central position in his research. We will now ask whether there are other approaches, on a broader basis, for how to understand ancient art in general.

4. 1 PSYCHO-HISTORICAL FRAMEWORK AND THE MINDS MIRROR

In the article titled *The Artful Mind meets Art History*,²⁰⁵ Nicolas Bullot and Rolf Reber from fields of psychology, philosophy and cognition, give a closer scientific foundation for the theory of art appreciation, which includes art history *as well as* psychological experimental aesthetics. In short, the authors take as their departure the controversies between an historical approach to art and the expanding psychological approaches: «Historicists argue that psychological and brain sciences ignore the fact that artworks are artefacts produced and appreciated in the context of unique historical situations and artistic intentions. After revealing flaws in the psychological approach, we introduce a *psycho-historical framework for the science of art appreciation*.» It has three levels: *Basic exposure, the artistic design stance, and artistic understanding*.²⁰⁶

Can this model be applied to rock art where the historical context is highly blurred, and can only and partly be reconstructed as based on pure thought experiments?²⁰⁷ As Lamarque

²⁰³ Ibid., 5.

²⁰⁴ V. Blundell and D. Woolagoodja, "Rock Art, Aboriginal Culture, and Identity: The Wanjina Paintings of Northwest Australia," in *Companion to Rock Art*, ed. Jo McDonald and Peter Veth (Blackwell Publishing Ltd., 2012), 472.

²⁰⁵ Bullot and Reber, "The Artful Mind Meets Art History: Toward a Psycho-Historical Framework for the Science of Art Appreciation."

²⁰⁶ Ibid., 123.

²⁰⁷ In their article Bullot and Reber stress the importance of a certain insight into an historic frame, but their artworks are all deriving from a relatively modern era in the West, where the context is easy to construct, at least partly.

remarked earlier, we will never be certain why the prehistoric paintings and sculptures were made, but we can attempt to reach a form of understanding via different research methods. Since many researchers in the fields of aesthetics have already quoted Bullot and Reber's psycho-historical framework²⁰⁸ it is tempting to try it out. In our context within the cave, however, we will very soon realize that we 'bump our head against the wall'.

Because an artwork is a human product-in-context, Bullot and Reber claim that appreciators (appreciators is the word Bullot and Reber use for spectators) understanding of historical context is essential for their conception of the artwork.²⁰⁹ It is this requirement of context that is the very argument against using their framework on pre-historical art. We can say that automatic emotions are elicited when we are being exposed to the panel. One can feel awe, a strong exposure to such a sublime scenery, or even confusion. What we can learn from this in terms of historical context is, however, not much, except for perhaps an empathetic engagement with the prehistoric viewer who saw the painting for the first time, i.e. a feeling of magical fellowship and mind reading across 40,000 years of separation.

The cognitive scientist Jerry Fodor claims that appreciators can adequately interpret a work of art without knowing the intentional-causal history, simply by imagining fictitious, causal history and fictitious art-historical contexts. This differs from Bullot and Reber's psycho-historical framework where the appreciator is most likely to be mistaken in artistic understanding.²¹⁰ The approach of Fodor, however, is similar to both Gadamer and Dewey (cf. chapter 3); for them it is the experience that is important, regardless whether it is a fictitious idea or the original context of the prehistoric artist and his intention that is communicated through the work; it is still possible for the viewer to have a rich aesthetic experience.

We now arrive at the modern and almost revolutionary discovery of the mirror neurons in the 1990s. The dynamic drawing of lines activates our mirror neuron system in a way that mirrors the neuronal firing in the brain of the executer of the paintings 40,000 years ago, the

²⁰⁸ 16.05.16 on Google Scholar: cited by 89

²⁰⁹ Bullot and Reber, "The Artful Mind Meets Art History: Toward a Psycho-Historical Framework for the Science of Art Appreciation," 126.

²¹⁰ Ibid.

neurons moving the hand, making these masterpieces.²¹¹ In the words of David Freedberg and Vittorio Gallese:

We propose that even the artist's gestures in producing the art work induce the empathetic engagement of the observer, by activating simulation of the motor program that corresponds to the gesture implied by the trace. The marks on the painting or sculpture are the visible traces of goal-directed movements; hence, they are capable of activating the relevant motor areas in the observer's brain. *Despite the absence of published experiments on this issue, the mirror-neuron research offers sufficient empirical evidence to suggest that this is indeed the case* (My italics).²¹²

Thus, we as spectators can follow the artist's trace corporeally as he was producing it. The mirror neurons are located in premotor and posterior parietal cortices and these neurons discharge when an action is observed as well as when it is executed. These neurons are directly involved in the perception of facial actions, in the imitation of simple movements and in the learning of complex motor acts even when not previously practiced.²¹³ It is also suggested that this involves empathetic involvements with movements in work of art and in life in general.²¹⁴

So, yes these paintings are stirring our emotions. But since an understanding of the context cognitively, as when we behold artworks from more recent eras with written sources, is impossible here, my conclusion will be that Bullot and Reber's psycho-historical framework for the science of art appreciation is not applicable on rock art. I will therefore leave it out from further exploration.

4.2 ELLEN DISSANAYAKE: SEPARATING THE ORDINARY FROM THE EXTRAORDINARY

Can art be re-defined from a strict adherence to Western tradition, and in such a manner that prehistoric cave paintings will be included in the definition? I find it interesting to see what makes, for instance, the *Horse Panel* of Chauvet *extraordinary* in Dissanayake's terms of *making extraordinary*.

²¹¹ V. Gallese, "Mirror Neurons, Embodied Simulation and the Neural Basis of Social Identification," *Psychoanalytic Dialogues* 19 (2009).

²¹² Vittorio and Freedberg in: M. Foster Cage, "Aesthetic Theory: Essential Texts for Architecture and Design," (W.W. Norton & Company, 2011), 318.

²¹³ For a more recent article on mirror neurons, confer with: G. Rizzolatti and L. Fogassi, "The Mirror Mechanism: Recent Findings and Perspectives," *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 369 (2014).

²¹⁴ D. Freedberg and V. Gallese, "Motion, Emotion and Empathy in Esthetic Experience," *Trends in Cognitive Sciences* 11, no. 5 (2007): 197-98.

This panel is among the most interesting pieces in Chauvet, mostly because of its twenty animals and its dynamic drama (Fig. 16). There are rhinoceroses confronting each other, which is unique in Palaeolithic art. It is most likely that it was the same artist that drew the two rhinos at the same time. The charcoal that was used has been dated between approximately 30,000 and 32,000 years B.P.²¹⁵

Added after the rhinos were the four heads of horses in charcoal, as well as two more rhinos, a stag and finally two mammoths. Similar to the other panels in the cave, this panel was also prepared and scraped. When depicting the four horses, the artist started at the top with the first head, and the bottom one as last. It is believed that the same person drew all the four heads. The artist also used charcoal, but mixed it with the surface clay to get different hues and visual effects (shading and perspective). The technique that was used was stump drawing, as well as scraping the outer edges of the images to give them a highlight of a pale aura.²¹⁶



Fig. 16 Detail of the Horse Panel, Chauvet cave 30,000 -32,000 BP

As previously stated, Dissanayake has set forth the theory that evolution of art comes from a proclivity to *make special*: being in a normal state versus one that is unusual, extra-ordinary or

²¹⁵ "Fighting Rhino and Horses," in *The Cave Art Paintings of the Chauvet Cave* (http://www.bradshawfoundation.com/chauvet/fighting_rhino_four_horses.php: The Bradshaw Foundation, 2011).

²¹⁶ Ibid.

super-natural is a common experience of all humans.²¹⁷ She argues that this predisposition is where we should look for the core behaviour of art. This is present in human groups where the separation between ordinary and extraordinary is blurry, but yet still demonstrate an awareness of it.²¹⁸ Anthropologist Robert Tonkinson writes about the Mardudjara aborigines in Australia:

The Dreamtime (the spiritual dimension or domain in which ancestral beings have their existence) is crucial because it is held to be the source of all power, given in response to ritual performance, but also available to individuals when they are able to briefly transcend their humanity and tap this reservoir (for example, during dance, trance, visions, dreams and heightened emotional and religious states).²¹⁹

These *other worlds* have been documented by anthropological studies from all over the world.²²⁰ Dissanayake claims that there are hardly any people who do not recognise or manifest by actions the non-ordinary, if not sacred dimension along with everyday reality.²²¹ She asks how and why humans evolved to create these *other worlds*. Perhaps it was to explain natural events that we today consider common knowledge. Why does the earth sometimes rumble? And what are the shifting lights in the sky? If a person believes in spirits and *other worlds*, these things might be easier to explain. A human's tendency to acknowledge an extra-ordinary realm is inherent in our behaviour of play, where actions are *not for real*. Accordingly, in the state of play we become more imaginative and flexible and this can result in innovative behaviour (this is further discussed in the following chapters). The same can be applied to rituals, where all of our regular behaviour are exaggerated and formalized, where it acquires a meaning and weight that makes it different from normal

²¹⁷ Dissanayake, *Homo Aestheticus : Where Art Comes from and Why*, 49.

²¹⁸ Ibid.

²¹⁹ R. Tonkinson, *The Mardu Aborigines : Living the Dream in Australia's Desert*, 2nd ed. ed., Case Studies in Cultural Anthropology (Belmont, Calif: Wadsworth/Thomson Learning, 2002), 16.

²²⁰ The Yoruba call the mysterious and permanent dimension of reality for *iron*. Henry John Drewal and Margaret Thompson Drewal, *Gelede : Art and Female Power among the Yoruba, Traditional Arts of Africa* (Bloomington, Ind: Indiana University Press, 1983).

The *spirit of the forest* of the Ituri forest pygmies. C. M. Turnbull, *The Forest People* (London: Chatto and Windus, 1961).

The *engang*, also known as the unseen world of dead spirit, of the Fang of Gabon. J.W. Fernandez, *Microcosmogony and Modernization in African Religious Movements*, vol. 3, Occasional Paper Series (Montreal: Centre For Developing Studies, McGill University, 1969).

The Eskimo *sila* or *life force*. K. Birket-Smith, *The Eskimos, Eskimoerne* (London: Methuen, 1959).

The *kore* (wilderness) of the Gimi. G. Gillison, "Images of Nature of Gimi Thought," in *Maccormack*, ed. P. Carol and M. Strathern (1980).

²²¹ Dissanayake, *Homo Aestheticus : Where Art Comes from and Why*, 50.

state: it becomes *extra-ordinary*. To Dissanayake, it seems undeniable that at some point evolving hominids would have been able to recognise and even create *meta-* or *as-if* realities through play and ritual.²²² She refers to scholar Walter Burkert and his thoughts on biological origins of religion where humans in the Middle or Early Upper Palaeolithic time must have been «painfully aware of the past and the future.»²²³

Dissanayake suggests that the ability to recognise things as special, to be able to differentiate ordinary from extra-ordinary must have developed over tens thousands of years. Planning ahead or assessing causes and consequence, were also evolving as a part of higher-level of cognitive abilities. During evolution, at some point, humans began purposely to make things *special* or *extra-ordinary*, perhaps to influence the outcome of important events that were uncertain or element of worry, which required more than just simple fight or flight approaches.²²⁴

4.3 SUMMARY: IS THE HORSE PANEL *EXTRAORDINARY*?

As we have discussed earlier in this chapter, there are several elements with this panel that are unique. The confronting rhinos which create some form of narrative, and the sketched style of the horses. This is only described as unique compared to other cave paintings. Keywords from how Dissanayake explains the extraordinary seem to be: play, other world, pretend, exaggeration and ritual. In viewing this panel, one gets a sense of a different world, not just a view into deep past, but also as if the painter experienced a different state of mind or an *altered state of consciousness* (ASC, cf. next chapter). The lines of charcoal seem so dynamic and vibrant as if the artist knew exactly what to paint, and how. This is a remarkable feat in terms of how well depicted these animals are, and it proves that the imagination of the artist was impressive. It is, at least, an extraordinary representation of animal form, where the more simple depiction of an animal in a static pose, is transformed to become a boost of energy (cf. chapter 6).

²²² Ibid.

²²³ R. G. Hamerton-Kelly et al., *Violent Origins : Walter Burkert, René Girard, and Jonathan Z. Smith on Ritual Killing and Cultural Formation* (Stanford: Stanford University Press, 1987), 172.

²²⁴ Dissanayake, *Homo Aestheticus : Where Art Comes from and Why*, 51.

CHAPTER 5

LEWIS WILLIAMS, THE NEUROPSYCHOLOGICAL MODEL, AND ALTERED STATES OF CONSCIOUSNESS

Let me tell you how I became a lion. It was a good dance several years ago...I felt the pull of the fire... and danced while staring at it... I saw the fire become very large...I saw a lion in it. I trembled when I looked at it. Then the lion opened its mouth and swallowed me. The next thing I remember seeing was the lion spitting out another lion. That other lion was me. I felt the energy of the lion and roared with great authority. The power scared people.²²⁵

A San Bushman shaman

This is the description by a modern bushman shaman in South Africa and his experience of an *altered state of consciousness* (ASC) that has been recorded and archived. This account gave Lewis-Williams a clue to what our ancestors might have experienced in trance, and it also became the start of his own theory of how the prehistoric man was able to make the very first images.

What Lewis-Williams did not understand is why paintings occurred in the depths of the caves, and how humans sometimes are depicted with characteristics of animals. Then, suddenly, shells fell from his eyes. In 1988 Lewis-Williams and Dowson published their theory that ASC affects our vision and perceptions, and that this was reflected in the paintings onto the cave walls. Lewis-Williams argue that the subject in the cave paintings (from both South Africa and Upper Palaeolithic) spring from shamanistic rituals and *altered states of consciousness* (ASC) and this would also explain the wide range of depictions and how they painted them. From studying the San Bushman in Africa, Lewis-Williams draw lines to our prehistoric ancestors and find it likely that they also achieved ASC to perform rituals and obtain visions.²²⁶

ASC is hard to define; it can be conceived as a continuum, where on the one end, we have alert consciousness and on the other we are in a deep trance. The skill here for shamans is to control their imagery and dreamlike state into something they can use. It is in the deep states the subject start to perceive things as hallucinations, and this is considered the most important stage in shamanistic practice. Lewis-Williams studied the effects of hallucinations and it appears to include all the different senses; it can cover the whole spectre from feeling blissful, ecstatic, or terrifying. Not only is the vision affected, but also the subject can also hear, smell

²²⁵ N. Spivey, *How Art Made the World* (London: BBC Books, 2005), 43.

²²⁶ Lewis-Williams and Dowson, "The Signs of All Times: Entoptic Phenomena in Upper Palaeolithic Art."

and taste things that are not real and it is essential to the shaman to enter this state. Flickering light, psychoactive drugs, sensory deprivation, intense concentration, migraine, and rhythmic movement can trigger ASC, as well as many other factors. It is also an effect of pathological conditions such as schizophrenia.²²⁷ The reason for entering such an intense experience could be one of the many different tasks a shaman would take upon himself/herself. Shamans enter trance in order to cure the sick, perform out-of-body experiences, make it rain and to control animals. The caves would be a natural choice of location to perform such a ritual considering that they were perceived as being very spiritual.²²⁸

The shamanic practitioner Mike Williams claims that our view of shamanism today has been influenced by the industrialised world, which makes it easier for us to reject trance experiences. It is now common to view it as something degenerate and as something to be avoided, but Williams remarks that in the non-industrialised world over 90 per cent of people have culturally patterned forms of ASC. For pre-modern societies, trance is not a strange and unnatural thing, rather the opposite was true: It was something common and useful. He supports his claim with recent brain-imaging research which shows signs that trance can cause a degree of instability in our mental processes that result in new connections between neurons (cf. Appendix). Williams explains that this can be a realignment of both understanding the *self* (something that defines higher-order consciousness) and also the world it inhabits. When in trance the frontal lobe is stimulated, and this area is associated with working-memory. Based on this, Williams is certain that even if the pre-modern people did not remember their trance dances, they almost certainly had them. Being exposed to this experience across countless generations may have established a hard-wired manner of thinking. Williams argues that even though this would not directly cause the genetic mutation behind the evolution of the human mind, these traits most certainly could set the conditions for a gradual genetic shift from primary to higher order of consciousness.²²⁹ Williams' thoughts are more or less parallel with those set forth by Froese (below).

The state of trance would also present other advantages, such as problem solving. Williams believes that if humans of the Palaeolithic period entered trance regularly, this would give

²²⁷ J. Clottes and D. Lewis-Williams, *The Shamans of Prehistory : Trance and Magic in the Painted Caves*, Chamanes De La Préhistoire (New York: Harry N. Abrams, 1998), 14.

²²⁸ *Ibid.*, 19.

²²⁹ M. Williams, *Prehistoric Belief* (The Mill, Brimscombe Port: The History Press, 2010), 30.

them an advantage in terms of thinking in new ways,²³⁰ which could explain why they outlived the Neanderthals. However, trance is also about going on journeys and this can be compared to dreaming where we enter a completely different world than what we are used to, still it feels very real to us, at least while we are in the state of sleep. Williams argues that when humans started to remember their dreams, and had evolved a language to communicate it to others, it is likely that the dreams formed an important part of their world. This, combined with reaching an enhanced sense of awareness of the self, could result in thinking about what happens when we die. An answer could be as simple as comparing death to the state of sleep, which means that the *soul* goes into the world(s) we experience during sleep. Thus, the afterlife is born. That the world in our dreams could also be accessed through trance, must have confirmed for them that there are other worlds that might be accessed, either through trance, dreams or death. Williams points out that we can enter trance like this today, the same way as they did it thousands of years before us.²³¹

5.1 ANIMALS IN ASC

There are three stages in ASC, whereas the two first has other abstract visual phenomena, the third stage allows animals appear to appear (called Zoopsia). This stage is reached via a so-called vortex or tunnel: you feel drawn into it; when on the other side of the tunnel, you enter a bizarre trance where monsters, people and scenery are intensely real.²³² Transformation into an animal is the most frequent experience in stage three of ASC. *James*, a subject in a research experiment conducted in the 1970s, describes it as: «I thought of a fox, and instantly I was transformed into an animal. I could distinctly feel myself as a fox, could see my long ears and bushy tail and by a sort of introversion felt that my complete anatomy was that of a fox.»²³³ Lewis-Williams draws parallels from these experiments to the San bushman images, where shamans depicted on the rock surface appears to turn into antelopes, because of their human upright bodies, but also having antelope heads and hooves as well (Fig.17).²³⁴ He asserts that what a person hallucinates is culturally conditioned, e.g. a San bushman would hallucinate an eland, while an Inuit would hallucinate a polar bear etc.²³⁵

²³⁰ This is confirmed in research by Robin Carhart-Harris, which he explains this in further depth in this video on Vimeo: <https://vimeo.com/44412867>

²³¹ Williams, *Prehistoric Belief*, 31.

²³² Clottes and Lewis-Williams, *The Shamans of Prehistory : Trance and Magic in the Painted Caves*, 17.

²³³ Lewis-Williams and Dowson, "The Signs of All Times: Entoptic Phenomena in Upper Palaeolithic Art," 212.

²³⁴ Clottes and Lewis-Williams, *The Shamans of Prehistory : Trance and Magic in the Painted Caves*.

²³⁵ *Ibid.*



Fig. 17 The shaman holding the Eland's tail is a half human/half animal in this painting from Game Pass Shelter. Notice the shaman has an antelope head and hooves.

The neurologist Derek Hodgson, on the other hand, claims the opposite. He finds that it is not only hunter/gatherers that hallucinate animals, but also urban modern humans,²³⁶ and maintains that if Lewis-Williams was right in his theory (here he refers to Lewis-Williams' strongly upheld thesis that the depictions in the cave – made during ASC - were closely connected to culture in the society in which they were produced), then animals would be absent from people in urban environment, but quite the reverse seems to be the case. Hodgson draws the conclusion that there must be another reason for the appearance and persistence of animals in such cases, besides cultural factors.²³⁷ On the other hand, can this be enough evidence to exclude any cultural record? And how can Hodgson exclude the possibility of shamanism and ASC based on this evidence, particularly since animals are a common feature in all kinds of cultures during ASC?

The hallucinatory visions we see in ASC are experienced either with opened or closed eyes. Lewis Williams find this to be a reason why the prehistoric people were able to depict and paint the animals on the cave wall, because the visions they had are *projected* onto the surrounding walls/ceilings; Western humans have described the experience as *pictures painted before your imagination* or *a motion picture* or *a slide show*. He explains that the visions seem to float across ceilings and walls: the surface itself becomes animated. An example of what you

²³⁶ D. Hodgson, "Altered States of Consciousness and Paleart: An Alternative Neurovisual Explanantion," *Cambridge Archaeological Journal* 16 (2006): 32.

²³⁷ Ibid.

would see in ASC is: a picture hanging on a wall and it looks three dimensional with saturated colours and it might come alive and start to move. It is also normal that people feel they can fly and change into a bird during their hallucinations.²³⁸

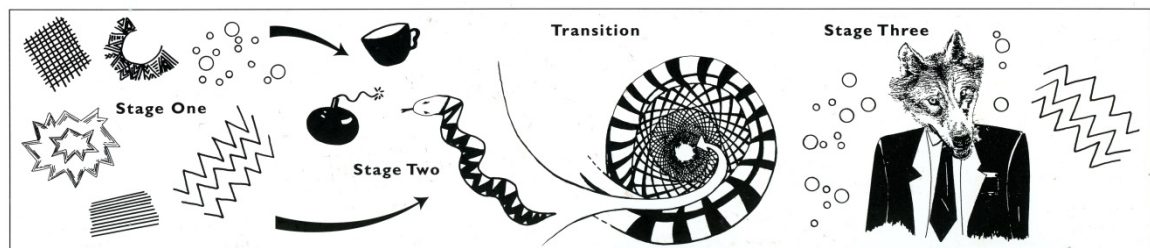


Fig. 18 Three stages of altered states of consciousness.

In Fig. 18 you can see the three different stages of mental imagery, where entoptical phenomena are characteristic for the first stage. Entoptic phenomena are divided in two different groups: (1) *form constants* that derive from the visual system (2) *phosphenes* that are derive from the *eye apple*. You can see them with the eyes closed or shut, and they seem to have a life of their own, and are characterized by saturated and varied colours. The speed of their transformations will also be varied. In stage two, these phenomena turn into iconic forms, as we try to understand what they are. For example, if you feel hungry, your brain might see a circle but your hunger will mistake it for an orange. In the transition to stage three, we experience a rotating tunnel or vortex that surrounds the subject and gives a progressive exclusion of perceptual information. The sides of the vortex have been described as having square patterns resembling TV-screens. Inside these squares are the iconic hallucinations and these images come from memories and are often connected to powerful emotional experiences after activating the limbic areas. Lewis-Williams and Clottes emphasise that the three stages are universal and wired into the human nervous system through evolution; some of the visions, such as animals, must be culture specific since the species varies between cultures.²³⁹

5.2 RESISTANCE TO THE NEUROPSYCHOLOGICAL THEORY

Lewis-Williams *neuropsychological theory* has been strongly questioned in a substantial amount of publications;²⁴⁰ it is particularly the shamanism *dogma* and the presumed relation

²³⁸ Clottes and Lewis-Williams, *The Shamans of Prehistory : Trance and Magic in the Painted Caves*, 19.

²³⁹ Ibid.

²⁴⁰ Hodgson 2006a, Hodgson 2006b; Bednarik, 2013

between the early *H. sapiens sapiens* contemporary culture and the cave *art* that has been criticized. Again, Hodgson disagrees and suggests that the development of form in prehistoric art, from geometrical to representational, is analogous to how the brain perceives visual input.²⁴¹ He calls this the *neurovisual resonance theory* of mark making (Fig. 19);

It both simulates and stimulates the process by which the visual system constructs form primitives and how the two functions are reciprocal. I propose that an organism, at any given moment, is tuned to resonate to incoming patterns of the optical array corresponding to the invariants that are significant to it. On perceiving repetitive-like patterns, the early visual centers are thought to become hyper-stimulated, leading to an undifferentiated sense of arousal, due to the fact that the early visual areas are already pre-tuned to be responsive to such lines because they play such an important role in discrimination of objects in the world at large.²⁴²

Despite a period of strong criticism of the *neuropsychological theory*, it has recently (2014) been supported by a group of biological and mathematical scientists: Tom Froese, Alexander Woodward and Takashi Ikegami²⁴³ who refer to mathematician Allan Turing's model of instabilities from 1952.²⁴⁴ Turing's model can explain activator/inhibitor firing in massive excitation of the brain, neurons being destabilized, and activation spreading by new excitation patterns, reactions between nerve cells that, under normal conditions, do not interact. In other words, the brain's steady state is broken down, replaced by, what Turing calls, a «diffusion-reaction» pattern, ultimately leading to hallucinations.»²⁴⁵

We will now further explore Lewis-Williams' theory of hallucinations based on models from recent neurobiology. The hot discourses between Hodgson and Lewis-Williams, including Helvenston, and their responses to Froese et al. will be left out, since they can be followed elsewhere (footnote), because it is mostly repetitive and does not bring anything new to my thesis.²⁴⁶

²⁴¹ Hodgson, "Altered States of Consciousness and Paleoart: An Alternative Neurovisual Explanantion."

²⁴² *Ibid.*, 56.

²⁴³ T. Froese, A. Woodward, and T. Ikegami, "Turing Instabilities in Biology, Culture, and Consciousness? On the Enactive Origins of Symbolic Material Culture," *Adaptive Behavior* 21, no. 3 (2013); Tom Froese, Alexander Woodward, and Takashi Ikegami, "Are Altered States of Consciousness Detrimental, Neutral or Helpful for the Origins of Symbolic Cognition? A Response to Hodgson and Lewis-Williams," *ibid.* 22, no. 1 (2014).

²⁴⁴ A.M. Turing, "The Chemical Basis of Morphogenesis," *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 237, no. 641 (1952).

²⁴⁵ T. Froese, A. Woodward, and T. Ikegami, "People in the Paleolithic Could Access the Whole Spectrum of Consciousness: Response to Helvenston," *Adaptive Behavior* 22, no. 4 (2014). Tom Froese, Alexander Woodward, and Takashi Ikegami, "Are Altered States of Consciousness Detrimental, Neutral or Helpful for the Origins of Symbolic Cognition? A Response to Hodgson and Lewis-Williams," *ibid.*, no. 1. O. Sacks, *Hallucinations* (London: Picador, 2012).

²⁴⁶ D. Hodgson, "Commentary on Turing Instabilities and Symbolic Material Culture by Froese, Woodward and Ikegami," *Adaptive Behavior* 22, no. 1 (2014). P. A. Helvenston, "Comments on the Paper "Are Altered

The reason Lewis-Williams strongly associates the ASC with shamanism, springs from his first hand information from studies on San rock art and their rituals: where ethnographic studies explain the San iconography (but see Robert G. Bednarik's criticism).²⁴⁷ Perhaps it would seem farfetched to staunchly uphold the shaman's central role in the cave paintings from the European Upper Palaeolithic era; considering this period to be very different, from the San Bushmen culture described by Lewis-Williams.

Lewis-Williams also accepts that that consuming hallucinogens is another factor triggering ASC.²⁴⁸ In his response to the Froese et al. paper:²⁴⁹ «Froese et al. and I... recognize that consciousness may be altered by ingestion of hallucinogens... by fasting, sensory deprivation, hyperventilation, rhythmic dancing and music»; following this he goes on to stress sociological levels:

The shaman's superior position in the pre-modern society, the man that has visionary capacities that far transcends the other, can cure sick people and animals, can bring forth rain etc. ...How can people be distinguished from one another within these small-scaled societies? Archaeologist Stephen Shennan²⁵⁰ claims that the transmission of ritual knowledge may be «the only legitimate locus for the generation of inequality ... As a result of his mediating position with the spirit world, the shaman has power, privileges and position which are unavailable to anyone else.²⁵¹

I agree with Lewis-Williams that shamanism might explain the extreme levels of creativity that seem to govern the expressiveness of paintings from the period of Upper Palaeolithic Europe. The critical voices raised against his argumentation are governed mainly by the opposition to Lewis-Williams' incorporation of the cultural factors in his *neuropsychological theory*, where cultural factors interact with psychosocial features predominating in the society within which they were created, such as the suggested elevated social status of the shaman as opposed to the normal group of conspecifics. This stands out in contrast to Hodgson's *neurovisual resonance*

States of Consciousness Detrimental, Useful or Helpful for the Origins of Symbolic Cognition? A Response to Hodgson and Lewis Williams", by T Froese, a Woodward and T Ikegami," *ibid.*, no. 4. J. D. Lewis-Williams, "Comment On: Froese Et Al.: 'Turing Instabilities in Biology, Culture, and Consciousness'," *ibid.*, no. 1.

²⁴⁷ Bednarik, "Brain Disorder and Rock Art."

²⁴⁸ J. D. Lewis-Williams, "Comment On: Froese Et Al.: 'Turing Instabilities in Biology, Culture, and Consciousness'," *Adaptive Behavior* 22, no. 1 (2014).

²⁴⁹ T. Froese, A. Woodward, and T. Ikegami, "Turing Instabilities in Biology, Culture, and Consciousness? On the Enactive Origins of Symbolic Material Culture," *ibid.* 21, no. 3 (2013).

²⁵⁰ S. Shennan, *Genes, Memes and Human History: Darwinian Archaeology and Cultural Evolution* (London, UK: Thames and Hudson, 2002), 223.

²⁵¹ Lewis-Williams, "Comment On: Froese Et Al.: 'Turing Instabilities in Biology, Culture, and Consciousness'."

theory²⁵² (where cultural factors are reduced almost to zero, just focusing on the neurobiology of the visual pathways).²⁵³

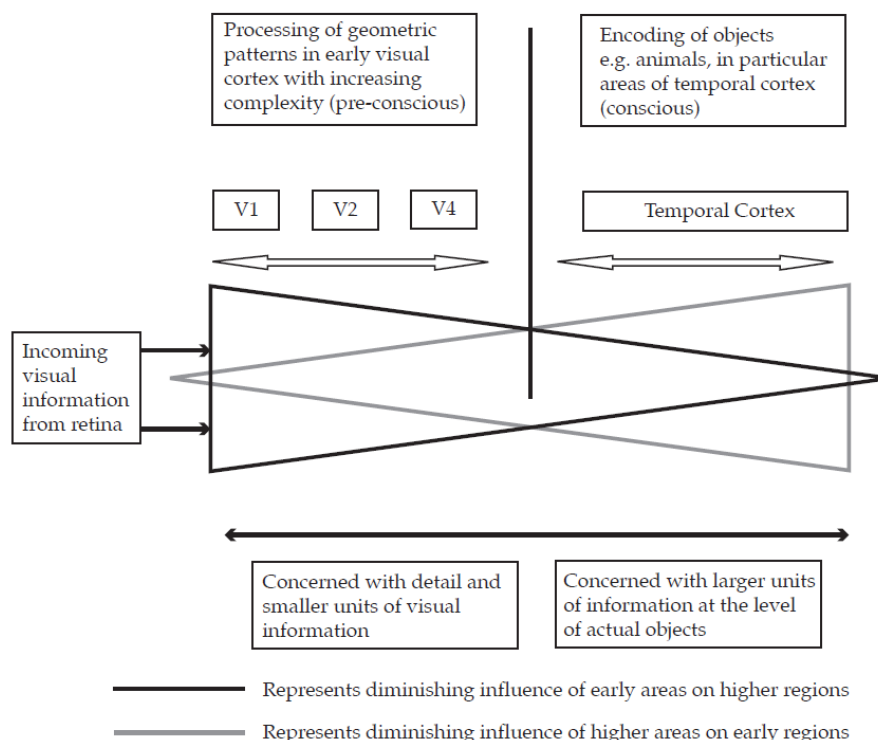


Fig. 19 Bi-directional fibre pathways connect the primary visual areas and the form recognition areas in the temporal lobe, and leads to a hyper-stimulation of the early visual centres (V1, V2, and V4); those are pre-tuned to be responsive to particular forms. Hence, they play an important role in discrimination of objects in the world at large, such as animal predators and prey. The interlocking triangles show how resonance occurs between the two systems.

What I find odd in the scientific discourse is that Lewis-Williams opponents seem to have forgotten that hallucinations driven by floral alkaloids are far from absent in the argumentation by this scholar; for instance he argues that «it is highly probable that the (San communities of the Later Stone Age in the southern Cape) used the plant as a hallucinogen to induce altered states of consciousness and thus to access the spiritual world»²⁵⁴; so the hypothesis of the shaman's role should not overshadow the wider perspectives in Lewis-Williams' theories: hence, we should be free to regard the artefacts as products of a shaman or another brought into ASC, by cultural rituals, such as dance, by natural drugs or by both (Cf. Dissanayake's *making*

²⁵² Hodgson, "Altered States of Consciousness and Paleoaart: An Alternative Neurovisual Explanantion."

²⁵³ "Understanding the Origins of Paleoaart: The Neurovisual Resonance Theory and Brain Functioning," *PaleoAnthropology* (2006).

²⁵⁴ Lewis-Williams and Pearce, *San Spirituality : Roots, Expression, and Social Consequences*, 57.

extraordinary above). Concerning ASC, I prefer to anchor the term in the Upper Palaeolithic, and hence to avoid confusion with modern concepts of ASC.²⁵⁵

A very attractive model would be to consider the brains of archaic *Homo sapiens* as representing *primary consciousness*, as opposed to normal *waking consciousness* of healthy adults (cf. Carhart-Harris et al. 2014, below);²⁵⁶ the model also prevents us from a strict separation in time and space between modern consciousness and primary consciousness, since it suggests that our mind can switch between the two. This may also free us from sticking to neuro-pathology in our explanation of the extraordinary creativity in cave paintings (cf. Helvenston & Bednarik 2011);²⁵⁷ still pathology should far from be excluded.

Moreover, I find it strange that the opponents of the ASC-hypothesis evade the crisp and clear evidence in favour of the presence of psilocybin-containing mushrooms in Europe during the Upper Palaeolithic era: Helvenston and Bahn argue against drug induced ASC in this period by stating that «neither mescaline nor psilocybin has ever been found in Europe».²⁵⁸ Froese et al. rightly reprimand them, stating: «The mushroom genus *Psilocybe* has a worldwide distribution, and over a dozen hallucinogenic species have been identified in Europe»²⁵⁹²⁶⁰ In their response to Helvenston they also maintain that there is no reason to doubt that «(people in Upper Palaeolithic era) were able to experience all kinds of hallucinations if they...wanted to». Their statement is based on the proof that psilocybin-mushrooms existed in Upper-Palaeolithic Europe.²⁶¹

In a recent contribution Froese again underlines that «Psilocybin-containing fungi existed in pre-Historic Europe since millions of years ago, and in any case the three stage sequence of hallucinations, i.e. a transition from simple geometric to figurative imagery, could also have

²⁵⁵ For a detailed and modern day experience of trance, please read chapter 5 in *Prehistoric Belief* by Mike Williams (2010).

²⁵⁶ Carhart-Harris et al., "The Entropic Brain: A Theory of Conscious States Informed by Neuroimaging Research with Psychedelic Drugs."

²⁵⁷ P. A. Helvenston and R. G. Bednarik, "Evolutionary Origins of Brain Disorders in *Homo Sapiens Sapiens*," *Brain Research Journal* 3, no. 2 (2011).

²⁵⁸ P. A. Helvenston and P. G. Bahn, "Waking the Trance-Fixed," *CAJ* 14, no. 1 (2004): 94.

²⁵⁹ G. Guzman, "Species Diversity of the Genus *Psilocybe* (Basidiomycotina, Agaricales, Strophariaceae) in the World Mycobiota, with Special Attention to Hallucinogenic Properties.," *International Journal of Medical Mushrooms* 7, no. 1-2 (2005).

²⁶⁰ Froese, Woodward, and Ikegami, "People in the Paleolithic Could Access the Whole Spectrum of Consciousness: Response to Helvenston," 92.

²⁶¹ T. Froese, G. Guzmán, and L. Guzmán-Davalos, E-mail, 12 Januar 2016 2015.

been ritually induced using only sensory deprivation techniques.»²⁶² In this same article Froese introduces his so-called *ritualized mind alteration hypothesis* for the evolution of the symbolic human mind. This hypothesis acknowledges that ASC may have been an important factor in the cultural evolution towards a modern human mind in the single individual as well as in social networks:

During the initial emergence and development of symbolic culture there may have been a mutually and reinforcing feedback cycle of structural self-optimization spanning both neurobiological and social networks. On the individual level, periodic induction of altered states could have enhanced neural coordination and facilitated abstract cognition, while, on the social level that same interruption of normal behaviours could have improved the configuration of relations, leading to more co-ordinated social behaviours, which in turn could have encouraged the development of more complex culture, including more extensive ritual practices of mind alteration. ... (This hypothesis) helps us to make sense of the fact that starting from around 300,000 years BP the pace of cultural development quickened exponentially, suggesting that the changes were increasingly autocatalytic.²⁶³

As we have seen, the cultural level is also of paramount importance in Lewis-Williams *neuropsychological theory*, where the shaman becomes the superior person in his community»; Froese, however, makes ASC a significant factor in the development of society itself, a step in the otherwise normal cognitive, as well as cultural, evolution of society.

An interesting corollary to Froese's belief is that «altered states could have enhanced neural coordination and facilitated abstract cognition», on the individual level, while, «on the social level it could have ultimately encouraged the development of more complex culture» (two excerpts from the long quote above) is found in psychiatric Stanley Krippner's acceptance of ASC, and *Spiritual Transferred Experiences* (through shamanism) as not necessarily abnormal and psychotic; according to Krippner it may have extremely negative consequences, but also very positive effects on the patient,²⁶⁴ tapping into neural networks that was part of the cultural evolution because they had a positive effect on individual and society. Krippner has this to say on the biological versus cultural part of this development: «(a)ll cultural changes in the past 90,000-100,000 years of homo sapiens sapiens have been environmental, not genetic. Therefore (his essay) takes the position that once homo sapiens sapiens arrived on the scene, and once shamanism developed as social specialisation, the contribution of shamanism to the

²⁶² Froese, "The Ritualised Mind Alteration Hypothesis of the Origins and Evolution of the Symbolic Human Mind."

²⁶³ Ibid., 4.

²⁶⁴ Stanley Krippner in an interview July 9th 2012: <https://www.youtube.com/watch?v=GOl-zmVl8Tk>. KMVT, "Present! Stanley Krippner, Ph.D. (Part One) Spiritually Transformative Experience," (Youtube, 2012).

evolution of human consciousness took on socio-cultural roots that built upon humanity's biological groundings».²⁶⁵

5.3 SUMMARY

M. Williams maintains that shamanism emerges from the neuropsychology of every human whether she or he lived in the Palaeolithic era, a historical Inuit community, or even in the heart of a modern metropolis. What differs is how these experiences are interpreted, used and reflected in the ideas and lifestyles of those adopting them. To conclude that shamanism is only real if it was practised in the past or is practised only in certain parts of the world is to set parameters that bear no relation to the authenticity of the experience or the efficacy of its results. Williams assert that the experience of trance is in everyone's capabilities and that the other worlds are domains that can be accessed by all, because entering a trance state is natural, useful and even convenient.²⁶⁶ He finds it especially so for the humans who lived during the Palaeolithic period, not only because it expanded their minds but also explained the world they lived in. He firmly believes that entering trance is important for the human condition today, and that it was integral for the emergence of the modern mind and may still be so.²⁶⁷

Lewis-Williams's theory has been hotly debated, and despite resistance in the established research community, his theory appears to be supported by new research (Froese, Woodward, Ikegami) and new methods such as mathematical models and neurobiology. The unexpected new results are the fruits of interdisciplinary work between archaeology, cognitive sciences, neurobiology and mathematics.

²⁶⁵ S. Krippner, "The Epistemology and Technologies of Shamanic States of Consciousness," *J. Conscious. Stud.* 7, no. 11-12 (2000).

²⁶⁶ Williams, *Prehistoric Belief*, 239-40.

²⁶⁷ *Ibid.*, 35-36.

CHAPTER 6

PALEOART AND THE BOOST OF CREATIVITY

An elementary school teacher was giving a drawing class to a group of six-year-old children. At the back of the classroom sat a little girl who normally didn't pay much attention in school. In the drawing class she did. For more than twenty minutes, the girls sat with her arms curled around her paper, totally absorbed in what she was doing. The teacher found this fascinating. Eventually, she asked the girl what she was drawing. Without looking up, the girl said, "I am drawing a picture of God." Surprised, the teacher said, "But nobody knows what God looks like." The girl said, "They will in a minute."²⁶⁸

Ken Robinson

Ken Robinson recalls this story as it reminded him of how children can be so confident in his or her own imaginations, but how most of them lose that confidence as they grow up. I wanted to open this chapter with Robinson's ideas because he believes passionately that we are all born with tremendous natural capacities and that we lose touch with many of them as we spend more time in the world. He claims: «We are all born with extraordinary powers of imagination, intelligence, feeling, intuition, spirituality, and of physical and sensory awareness.»²⁶⁹ This claim made me think of the Palaeolithic artists, and how their markings remain as evidence of incredible creative achievements.

6.1. CREATIVITY IN THE CAVE

A very impressive feat is the animals depicted in prehistoric art with naturalistic movements, animals running in high speed, fighting etc. One famous example is the paintings in the Chauvet cave. It is considered to be one of the most significant prehistoric art sites with painted images. Rather than depicting only the familiar herbivores that predominated in other Palaeolithic cave art, i.e. horses, cattle, mammoths, rhinoceroses etc., the walls of Chauvet feature many predatory animals, such as lions and panthers. Paintings are sketchy, and strongly dynamic; you can almost feel, smell and hear the animals running, some turning around, rhinoceroses fighting, etc. (Fig. 20).

The morphology of the cave walls were exploited: niches and recesses were used in helping to position figures, edges suggest body shapes, virtually rendering drawings into sculptures. The

²⁶⁸ K. Robinson and L. Aronica, *The Element: How Finding Your Passions Changes Everything* (London: Penguin Books, 2009), xi.

²⁶⁹ *Ibid.*, 9.

incorporation of the rock surface makes the imagery; so to speak, fluctuate between the two- and three-dimensionality, helped by the light from torches, creating a dramatic scenery.



Fig. 20 Panel from Chauvet (France)

Another extremely fascinating animal tableau is found in the Sanctuary in Les Trois Frères (France), where, like in Chauvet, there is a strong dynamic movement of animals. This representation is *engraved* onto the wall, so technically it differs tremendously from the other findings from the Upper Palaeolithic era (Fig. 21).



Fig. 21 Sanctuary in Les Trois Frères (France).

To repeat one of the questions from my introduction: How could the artists in the Upper Palaeolithic era make 3D into a 2D, and, not the least, make the 2D appear so naturalistic that it might be felt and perceived as animals under great excitement and movement? This all within the darkness of the cave, slightly lit up by torches.

The animal representations in the caves vary from an isolated deer standing in profile to a herd of animals under enormous speed, fighting, running from a predator or attacking their pray. Some of the animals seem to have two heads, one in the anatomical correct position and one at the rear end, sharing the same cervico-dorsal line (Fig. 22).²⁷⁰ This feature, as well as the overlap of animals, some running in one direction, others running in the opposite, are what characterize these paintings with chaos and drama.



Fig. 22 The arrow indicates a shared cervico-dorsal between two animals (Detail of Fig. 21).

You get the impression that the hand in action was sort of *released*, that the affective brain took control over the cognitive parts. It is no longer a calm description of how a rhinoceros, a lion, a bison etc. look like; it describes the animals as they appear in nature, describing how they act, their tremendous amount of energy release as they change from still images to those of a herd. And the way they were able to depict the animals in motion, is surprisingly accurate. Edward Muybridge in 1886 was the first to film how horses actually run, and it was confirmed

²⁷⁰ The cervico-dorsal line runs from neck to rear end of the animal marking the line of its back/dorsal line.

that the so-called primitive cave man painted their leap almost correctly with an error rate of 46,2% vs. 65,2% in modern paintings.²⁷¹ Which makes the animated animals even more impressive.

6.2 THE CONTEXT

Let us now first and foremost define the physical context for the execution of the *art* within the cave:

- 1) Darkness or slightly lit up by torches.
- 2) No animals present, so no model to reproduce on the walls.
- 3) Danger from meeting wild animals in the cave.

1): The relative darkness will imply that the *artist* would have to have worked at *high fluency* without being able to make detailed adjustments to the drawings; it becomes a matter of memory. The high quality of the drawings tells us that the *working memory processes* are going on *high gear*.²⁷²

2): How is it possible to remember the fine details of an animal without the animal *model* present? This *savant-like*²⁷³ practice is one of the greatest mysteries with the artworks. This is particularly so when it comes to such caves as Chauvet and Les Trois Frères, where, as I have stressed, there is such a high dynamic that we find details as multiplication of lines for representation of feet in fast running.

2.1): One explanation could be that the makers of the paintings were particularly trained in memorizing animals because it served some particular ritualized or other function to reproduce them on the wall. Such extreme ability to remember is known in our own time. A very fascinating example is the studies of London taxi-drivers' memories, here tested versus the

²⁷¹ Horvath et al., "Cavemen Were Better at Depicting Quadruped Walking Than Modern Artists: Erroneous Walking Illustrations in the Fine Arts from Prehistory to Today (Erroneous Artistic Quadruped Walking Depictions)." Table 1

²⁷² Working memory, definition: «Working memory represents a limited-capacity store for retaining information over the short term (maintenance) and for performing mental operations on the contents of this store (manipulation). The concepts of working memory could either originate from sensory inputs by way of sensory memory or could be retrieved from long-term memory. ... In each case, working memory contains information that can be acted on and processed, not merely maintained by rehearsal, although such maintenance is one aspect of working memory» from M. S. Gazzaniga, R. B. Ivry, and G. R. Mangun, *Cognitive Neuroscience : The Biology of the Mind*, 2nd ed. ed. (New York: Norton, 2002), 317.

²⁷³ A person who does not have normal intelligence but who has very unusual mental abilities that other people do not have: From Merriam-Webster dictionary: (downloaded 11 May 2016).

memory of London bus drivers: a brain scanning (functional magnetic resonance imagining (fMRI) study) showed that *neuroplasticity* has enlarged the posterior Hippocampus²⁷⁴ of the taxi drivers brain as opposed to that of bus drivers, because of the tremendous higher skills required by the taxi drivers in remembering where to go from point A to point B.²⁷⁵ Such an explanation accords with Malafouris' so called theory of *Metaplasticity* where it is stressed that our brain is in continuous development, in strict adherence to culture and our material environment..²⁷⁶

2.2): Another way to understand the mysteriously accurate paintings is to look at the brain of the archaic Homo sapiens as being able to perceive details as raw (what psychologists call bottom up) perception and raw memory undisturbed of conceptual thought structures (top down control). This will open representational abilities in every detail, as has also been shown to be the case if the temporal lobe is temporarily *shut down* by transcranial magnetic stimulation (Snyder, below).

3): If the *artist(s)* worked during normal consciousness it is impossible to disregard the input from a highly alarmed limbic system, particularly the fight and flight part of it, such as the amygdala, because of a constant danger of wild animals, such as bears or lions, using the cave as part of their habitat. Could the sheer representation of the animals be a spiritual way to control them?

Since I regard these splendid artefacts as beautiful, and at the same time astonishingly sublime, they appear to me as *artificiations* in Dissanayake's definition of this term, an artwork that cannot be classified through Western *disinterested* Kantian aesthetics; their beauty, and their impression on us as *aesthetics at its very limits* reminds us of Picasso's words, when confronted with pre-historic art: «we have learned nothing in twelve thousand years».²⁷⁷ I will also clearly stress that the artists must have been extremely high skilled and extremely creative. This raises questions as to which cognitive processes are going on in the brain of such creative geniuses.

²⁷⁴ The hippocampus is our foremost structure for memory.

²⁷⁵ E. A. Maguire et al., "Navigation-Related Structural Change in the Hippocampi of Taxi Drivers," *PNAS* 97, no. 8 (2000); Maguire et al., 2003; Maguire et al. 2006

²⁷⁶ Malafouris, "Metaplasticity and the Human Becoming: Principles of Neuroarchaeology."

²⁷⁷ G. Curtis, "The Cave Painters: Probing the Mysteries of the World's First Artists," *Underground Art* (2006).

6.3 THE CREATIVE DRIVE

The free float of creative capacity in our two model caves, Chauvet and Les Trois Frères, can be compared with the drawings by savant autistic children; a most famous example is the girl Nadia,²⁷⁸ whose drawings of horses are so dynamic with movement that they almost surpass all that has been seen through art history. The neurobiologists Vilianur S. Ramachandran and William Hirstein (1999) draw on Nadia's extraordinary capacity in this single field as an example of what he designates as the brain's modularity; here it means that a single brain region is hyper functional, while most of the others are more or less dysfunctional. In the case of Nadia, Ramachandran suggests that it is the right parietal cortex that may be the location of the creative capacity.²⁷⁹ But is it not extremely farfetched to suggest that the painters from the Upper Palaeolithic era were autistic savants? In the article titled *Cave Art, Autism, and the Evolution of the Human Mind* (1998) psychologist Nicolas Humphrey compares drawings by Nadia with paintings of the Upper Palaeolithic period, and raises the question whether there may be a connection between the impaired language abilities by Nadia and her (compensatory) drawing abilities, and that the same might have been the case for the savant like cave painters. A significant point in Humphrey's reflections is that:

A person not only *does not need* a typical modern mind to draw like that (in the caves) but *must not have* a typical modern mind to draw like that. Then the cave paintings might actually be taken to be proof positive that the cave artists' minds were essentially pre-modern (my italics).²⁸⁰

6.4 DISINHIBITION

How can we explain a release of creative energy taking place in the cave? In the article just mentioned, Humphrey uses the word *disinhibition* on the process of high creativity.²⁸¹ In a high creativity state when a system is *disinhibited* it will drift away from a biological steady state. In a model set forth by American neurologists Alice Flaherty a *creative drive* will increase with degrees of temporal lobe dysfunction in combination with increased dopaminergic tone; conversely a so-called *creative block* increases with reduced or altered

²⁷⁸ L. Selfe, *Nadia: A Case of Extraordinary Drawing Ability in an Autistic Child* (New York: New York Academic Press, 1977).

²⁷⁹ Ramachandran and Hirstein, "The Science of Art: A Neurological Theory of Aesthetic Experience."

²⁸⁰ N. Humphrey, "Cave Art, Autism, and the Evolution of the Human Mind," *Cambridge Archaeological Journal* 8 (1998): 171.

²⁸¹ D. W. Zaidel, "Biological and Neuronal Underpinnings of Creativity in the Arts," in *Neuroscience of Creativity*, ed. O. Vartanian, A. S. Bristol, and J. C. Kaufman (London, England: MIT Press, 2013), 142.

frontal lobe function combined with decreased levels of dopamine.²⁸² Also, Flaherty's model includes a reciprocal inhibition between the temporal and the frontal lobes (Fig. 24). A reduced activity in the temporal lobe will lead to *disinhibition* (- - gives +) of the frontal lobe resulting in *creative drive*, which unrestricted can lead to pathologies such as mania and psychosis (Fig. 23, and cf. below). To sum up these matters: abnormal frontal brain activity combined with a low level of dopamine (*creative block*) will ultimately lead to depression. At the other end of the spectre, increasing dopaminergic levels combined with abnormal temporal lobe activity (*creative drive*) can ultimately lead to mania and psychosis.

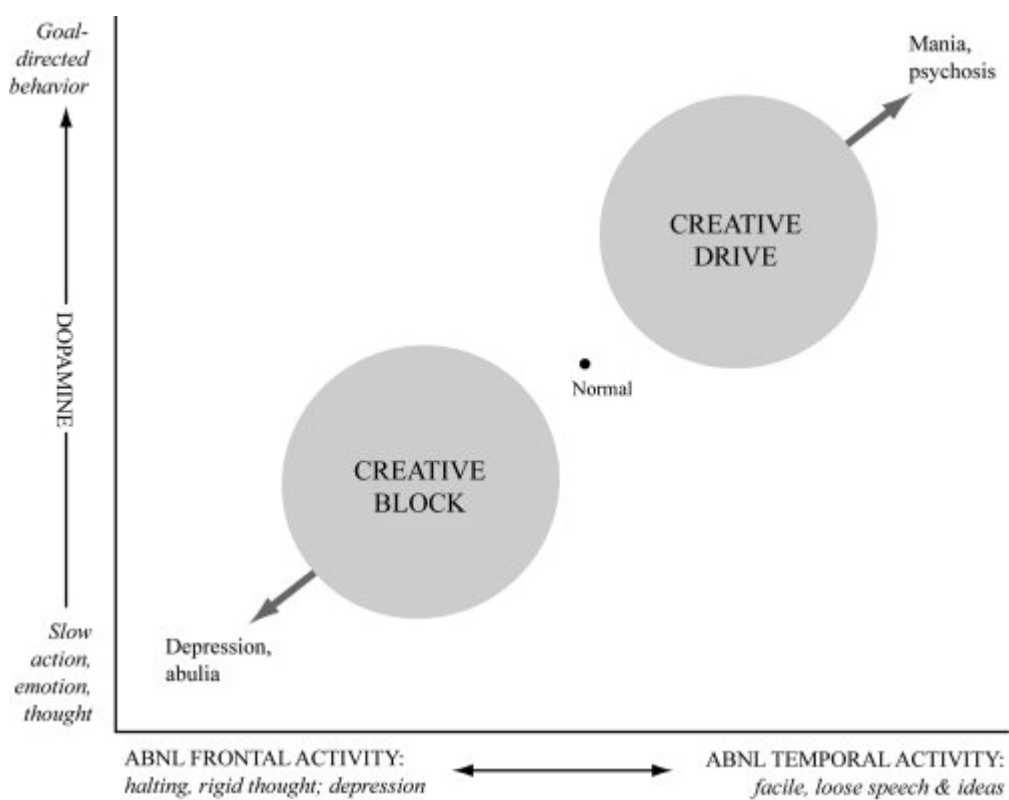


Fig. 23 From Flaherty (2005) Flaherty's Fig. 2.

It has also been demonstrated that there is a high correlation between high creativity score and activation of the dorsolateral prefrontal cortex, as well as other regions strongly innervated by the dopaminergic system (Fig. 25).²⁸³ High creativity is no pathological condition; quite

²⁸² A. W. Flaherty, "Frontotemporal and Dopaminergic Control of Idea Generation and Creative Drive," (Hoboken 2005). H. B. Newton, "The Neurology of Creativity: Focus on Music," in *Creativity and Innovation among Science and Art*, ed. C. Charyton (London: Springer-Verlag, 2015).

²⁸³ Such activated areas are the bilateral basal ganglia, the substantia nigra, and the ventral tegmental area, i.e. the mesolimbo-cortical system, the nigrostriatal system, and the mesolimbic system: networks involving

contrary: it is usually regarded as positive; still high creativity can also be associated with neuropsychiatric conditions during destabilization of the neural networks of the brain.

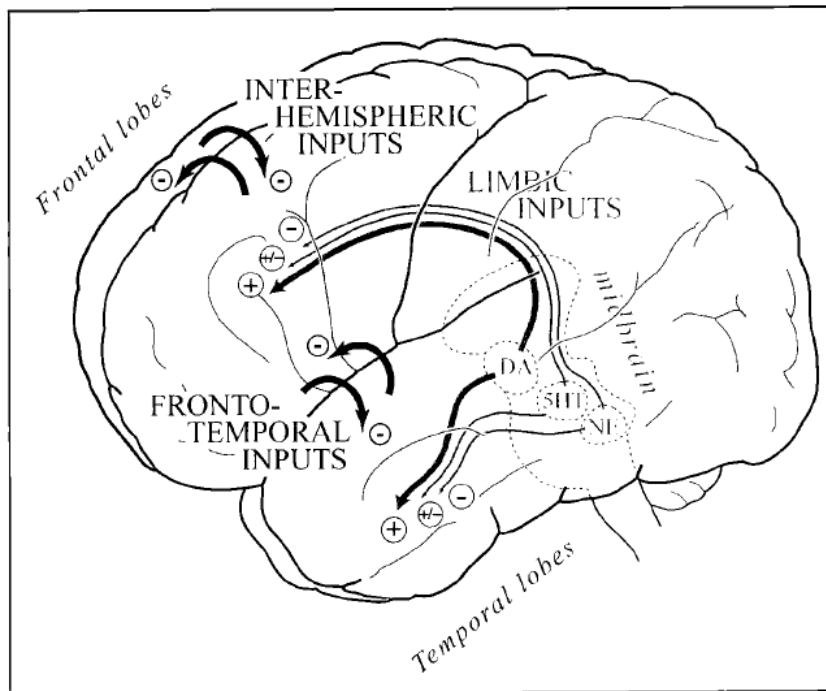


Fig. 24 Anatomical pathways involved in creative behaviour. The figure illustrates stimulation with plusses, and inhibition with minuses. Frontotemporal and interhemispheric inputs tend to inhibit each other. The figure also includes the effect of noradrenergic (NA), dopaminergic (DA), and serotonergic (5-HT) pathways from the limbic midbrain, and their effect on creativity. From A. W. Flaherty 2011.

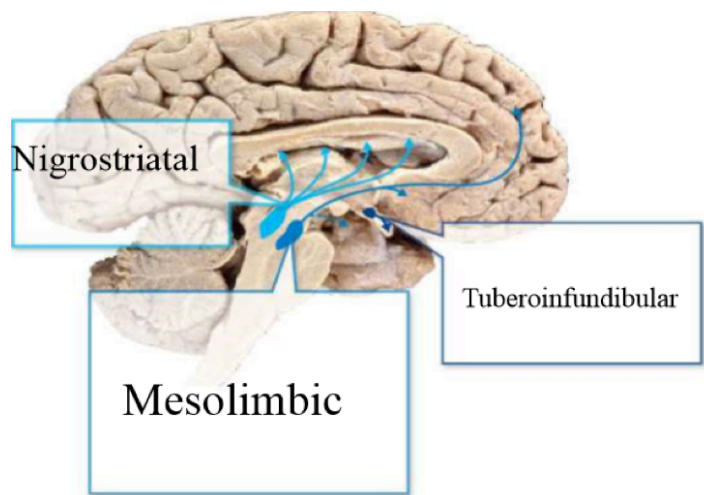


Fig. 25 The dopaminergic innervation of the brain. The nigrostriatal pathway has its cell bodies located in the substantia nigra and projects its axons to the striatum (including the globus pallidus, the caudate nucleus and the nucleus accumbens). The mesolimbic system has its cell bodies located in the ventral tegmental area, and projects to the whole cerebral cortex (neocortex) as well as to the limbic areas, such as the cingulate cortex. Activation of these systems is associated with situations of pleasure and reward.

emotional (limbic) systems, and cortical cognitive and sensory-motor systems. H. Takeuchi et al., "Regional Gray Matter Volume of Dopaminergic System Associate with Creativity: Evidence from Voxel-Based Morphometry," *NeuroImage* 51, no. 2 (2010).

As demonstrated by psychologists Park et al. (2015) «there was a bilateral spread of regions which correlated with the Create condition, which encompassed the frontal, parietal, and temporal lobes», with the prefrontal cortex (PFC) being critically involved in divergent thinking.²⁸⁴ American neuroscientist Randy L. Buckner and cognitive scientist Fenna M. Krienen have stressed that the PFC, the parietal, and the temporal association regions were particularly expanded during the evolution of *Homo sapiens* «suggesting a coordinated increase in distributed cortical territories», expanding «disproportionately relative to sensory regions».²⁸⁵ Hence, the regions involved in creative thinking were particularly expanded in the evolution of *Homo sapiens*, which will seem to indicate that the evolutionary drive strongly favoured creativity in spite, for instance, of the high co-incidence of what is now called psychiatric disorders. This is particularly interesting when we consider why natural selection has not eliminated schizophrenia. One theory is that the creative gain by relatives to the sick people (those with so called schizotypal traits) was so much worth that it overrode the biological selection pressures trying to exclude the negative genes.²⁸⁶ Another theory considers that the so-called adaptive genes, i.e. the genes for better social abilities, were somehow linked to the schizotypal genes, which could lead to an accumulation of the pathological genes as a by-product.²⁸⁷

Fig. 26 illustrates how creative traits and psychopathologies are interconnected through a critical *shared vulnerability* overlap zone. If the individual has high IQ, strong preference for novelty, and an attenuated latent inhibition, there will be a high incidence for switching into strong creativity, associated with strong working memory skills, cognitive flexibility, supported by different protective factors. If, on the other hand, a person in the unstable shared vulnerability sector (Fig. 26) has a limited interest for novelty, is governed by increased latent inhibition, and has a relatively lower IQ, there is a danger for switching into psychopathology.²⁸⁸

²⁸⁴ H. R. P. Park, I. J. Kirk, and K. E. Waldie, "Neural Correlates of Creative Thinking and Schizotypy," *Neuropsychologia* 73 (2015): 101.

²⁸⁵ R. L. Buckner and F. M. Krienen, "The Evolution of Distributed Association Networks in the Human Brain," *Trends in Cognitive Sciences* 17, no. 12: 652.

²⁸⁶ B. Crespi, K. Summers, and S. Dorus, "Adaptive Evolution of Genes Underlying Schizophrenia," *Proceedings of The Royal Society B* 274 (2007). See also Krippner et al. 2012: 166 on the persistence in the gene pool of genes coding for bipolar disorder

²⁸⁷ J. K. Burns, "An Evolutionary Theory of Schizophrenia: Cortical Connectivity, Metarepresentation, and the Social Brain," *Behav. Brain Sci.* 27, no. 6 (2004).

²⁸⁸ S. H. Carson, "Creativity and Psychopathology: A Shared Vulnerability Model," *The Canadian Journal of Psychiatry* 56, no. 3 (2011).

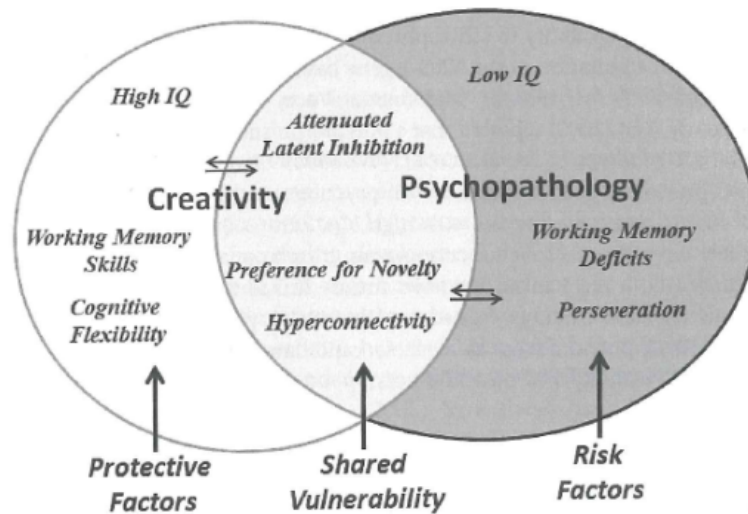


Fig. 26 The figure shows Carson' (2011) model of the relationship between creativity and psychopathology

But did the schizotypal traits exist in the genome of the archaic Homo sapiens? There are different positions on this in the literature on the subject. According to Burns, schizophrenia probably «exists in our species as a cost-off in the evolution of the prefrontal cortex and its connectivity with temporal and parietal cortices».²⁸⁹ Crow et al. suggests that the evolution of the human capacity for language: «provided the neural and cognitive substrate for a disorder such as schizophrenia.»²⁹⁰ He places this evolution 100.000-150.000 years BP, i.e. prior to the migration of Homo sapiens out of Africa. Accordingly, the high creativity that is reflected on the cave walls can be the product of artists with schizotypal traits; but it would be extremely farfetched to raise the thesis that this, in fact, was *the* reason.²⁹¹

6.5 HIGH AND LOW ENTROPY

Examples of unstable conditions, destabilizing the brain towards higher creativity are collected in a review by neuroscientist Karl Friston under the name *The Free-Energy Principle*. *The free energy* is a term deriving from thermodynamics, and designates the energy loss when a system is transformed from a state of high energy and disorder to a state of low energy and order, a

²⁸⁹ Burns, "An Evolutionary Theory of Schizophrenia: Cortical Connectivity, Metarepresentation, and the Social Brain," 834. If the genes for schizophrenia were in some way intimately associated with genes regulating the development of complex cortical connectivity, and if these regulatory genes were advantageous during hominid evolution, then the genes for the disorder would persist by virtue of their association with the adaptive genes. Thus, schizophrenia would represent a trade-off in the evolution of the highly organized brain of modern Homo sapiens

²⁹⁰ J. T. Crow, "Schizophrenia as Failure of Hemispheric Dominance for Language," *Trends in Neurosciences* 20, no. 8 (1997).

²⁹¹ Ibid.

homeostasis: «The free-energy principle says that any self-organizing system that is in equilibrium with its environment must minimize its free energy». Another term deriving from thermodynamics is *entropy*: For a biological system, high entropy will designate a system of high disorder, while a system in steady state, with low disorder, has low entropy.²⁹² While low disorder signifies low creativity, high disorder includes normal as well as abnormal conditions: from high creativity to psychotic states (including hallucinations).

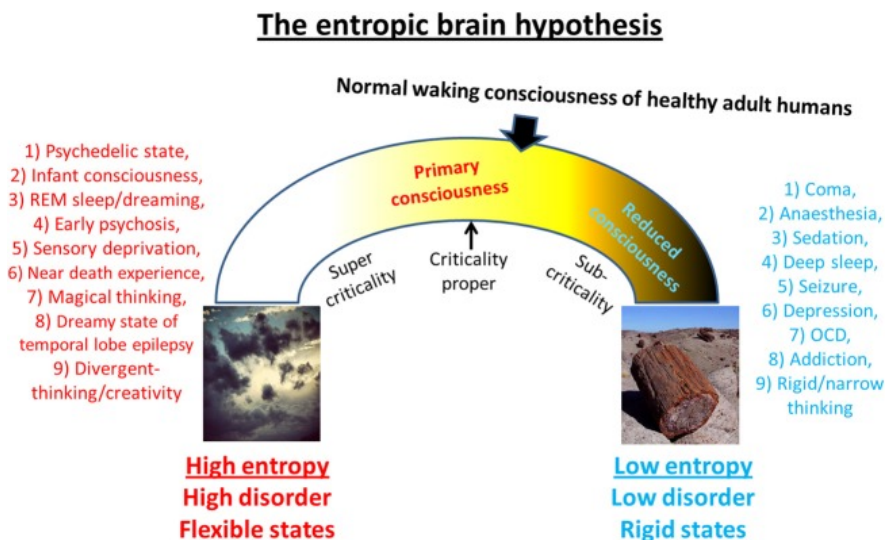


Fig. 27 The Entropic Brain hypothesis

How, in a biological system, can low entropy be transformed into a state of high entropy? This leads us to a recent article by neurologist Robin L. Carhart Harris *et al.* titled *The Entropic Brain: A Theory of Conscious States Informed by Neuroimaging Research with Psychedelic Drugs*.²⁹³ The author maintains that normal waking consciousness in healthy, modern and adult humans depends on entropy suppression; moreover that there was a state relatively proximal to this in archaic *Homo sapiens*. Also in infants the entropy is relatively elevated. In archaic *H. sapiens* and in infants this state is defined as *primary consciousness*; hence, in modern *H. sapiens* this primitive state is replaced by a so-called *secondary consciousness*. Moreover, a central hypothesis of the paper is that psychedelics induce a *primitive state of consciousness*, «by relinquishing the ego's usual hold on reality.»²⁹⁴ The secondary consciousness is characterized by a strong control of the medial temporal lobe (MTL) by the so-called *default*

²⁹² K. Friston, "The Free-Energy Principle: A Unified Brain Theory?," *Nature Reviews Neuroscience* (2010).

²⁹³ Robin L. Cahart-Harris *et al.*, "The Entropic Brain: A Theory of Conscious States Informed by Neuroimaging Research with Psychedelic Drugs", *Frontiers in Human Neuroscience*, February 2014, Vol. 8, Article 20, 1-22.

²⁹⁴ Carhart-Harris *et al.*, "The Entropic Brain: A Theory of Conscious States Informed by Neuroimaging Research with Psychedelic Drugs," 9.

mode network (DMN). This leads to low entropy, low disorder, and rigid states. The *waking consciousness* of healthy adult humans is suggested to be close to the critical point where it can switch (back) to *primary consciousness* (hence high creativity), for instance during influence from psychedelics (Fig. 28). This results in a condition of high entropy, high disorder, and flexible states, for instance in: psychedelic states, infant consciousness, REM sleep/dreaming, early psychosis, sensory deprivation, near death experience, magical thinking, and dreamy state of temporal lobe epilepsy, *divergent thinking and creativity*.

Can we exclude that the archaic *H. sapiens* were more driven by raw perception than with the hardwired (top-down) concepts which characterise adults in our society today? From my point of view, the *entropic brain hypothesis* might explain the savant-like abilities of the painters in the caves. Snyder and Thomas (1997) argue that:

The difference between autistic child artists and normal individuals is that autistic artists make no assumptions about what is to be seen in their environment. They have not formed mental representations of what is significant and consequently perceive all details as equally important. Equivalently, they do not impose visual or linguistic schema- a process necessary for rapid conceptualization in a dynamic existence, especially when the information presented to the eye is incomplete.²⁹⁵

Gobet et al. (2014) proposes that creativity can be boosted «by decreasing conceptual processing and increasing the role of low-level perceptual processing.»²⁹⁶

And in the words of Allan Snyder:

Savants (may) have privileged access to lower level, less processed information, before it is packaged into holistic concepts and meaningful labels. Owing to a failure of top-down inhibition (cf. Fig. 27), they can tap into information that exists in all of our brains, but is normally beyond conscious awareness. This suggests why savant skills might arise spontaneously in otherwise normal people and why such skills might be artificially induced by low frequency repetitive transcranial magnetic stimulation.²⁹⁷

²⁹⁵ A. Snyder and M. Thomas, "Autistic Artists Give Clues to Cognition," *Perception* 26 (1997).

²⁹⁶ F. Gobet et al., "Designing a "Better" Brain: Insights from Experts and Savants," *Frontiers in Psychology* 5 (2014).

²⁹⁷ Transcranial magnetic stimulation (TMS), definition: «Transcranial magnetic stimulation (TMS) offers a methodology to noninvasively produce focal stimulation of the brain in humans. The TMS device consists of a tightly wrapped wire coil that is encased in an insulated sheath and connected to a source of powerful electrical capacitors. When triggered, the capacitors send a large electrical current through the coil, resulting in generation of a magnetic field. When the coil is placed on the surface of the skull, the magnetic field passes through the skin and scalp and induces a physiological current that causes neurons to fire» (Snyder 2009, p.1399) in: Gazzaniga, Ivry, and Mangun, *Cognitive Neuroscience : The Biology of the Mind*.

What is it that blocks our access to the raw perception? One explanation is that we are driven by inherited concepts, which is a hindrance for finding new solutions that are more genial. This is called the *Einstellungseffect*, and has been shown to block for better solutions in professional chess players.²⁹⁸ As pointed out by Gobet *et.al.*²⁹⁹ eliminating the *Einstellungseffect* will give us better access to raw perception. The question raised is: can the boost of extreme creativity in the cave, resembling that of autistic savants, be explained by a brain in archaic Homo sapiens that had an extraordinary ability to imprint raw perception into memory (as in a film), undisturbed by top-down conceptual processing? Such a conception will also free us from an explanation relying on psychopathology alone.

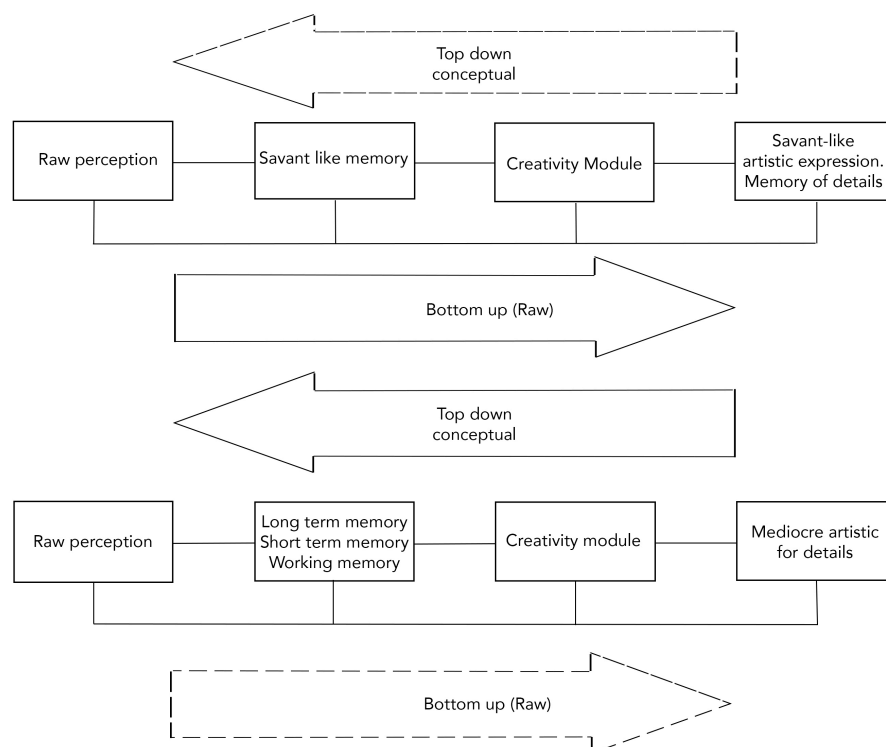


Fig. 28 Top down and bottom up directions in a) archaic Homo sapiens and b) modern Homo sapiens

On the other hand it will seem that much more research is necessary to exclude that the paintings in the caves were executed by people without, what we today will label as, psychiatric diagnosis. This brings us back to the central question: Was the extreme creativity in

²⁹⁸ M. Bilalić, P. McLeod, and F. Gobet, "Inflexibility of Experts—Reality or Myth? Quantifying the Einstellung Effect in Chess Masters," *Cognitive Psychology* 56, no. 2 (2008).. *Cognitive Psychology*, 56, 73-102; Idem (2008 b). Why good thoughts block better ones: the mechanism of the pernicious Einstellung (set) effect. *Cognition* 108, 652-661; Idem (2010). The mechanism of the einstellung (set) effect. A pervasive source of cognitive bias. *Current Directions of Psychological Sciences*, 19, 111-115.

²⁹⁹ Gobet et al., "Designing a "Better" Brain: Insights from Experts and Savants," 174.

the cave a reflection of a normal non-pathologic functioning brain, albeit with *channels* opened that under normal (and modern) conditions are silent (by top-down control), or was it all governed by psychopathologies, shamanism, drug consumptions, and different degrees of *altered states of consciousness*?

6.6 SUMMARY

To sum up the neurocognitive reflections in the last two chapters: we have listed recent contributions (Froese, Froese et al.; M. Williams) in support of *altered states of consciousness* in cave paintings, and positive effects of ASC in personal as well as social development (Froese, 2015). We find recent evidence as strong support for Lewis-Williams' theory that the cave paintings from the Upper Palaeolithic era may have been executed during ASC.

Independent of the on-going discourse, particularly between Lewis-Williams on the one hand and Hodgson, Helvenston, Bahn, and Bednarik, on the other, as well as Froese et al.'s refreshing new proposals, our most central point of departure in chapter 6 has been the savant like imagery, such as in Chauvet and Les Tres Frères. I have pointed out that the boost of creativity particularly relies on the medial prefrontal cortex and its connection with the parietal and temporal lobes, all being strongly expanded during human evolution, in contrast to the sparse expanse of the sensory areas.³⁰⁰ As demonstrated by Snyder, a reduction of activation by the temporal lobe, experimentally induced by transcranial magnetic stimulation, will transform a normal modern human being towards savant like abilities in art and memory processes. I therefore stick to Snyder's suggestion that we are all potential savants, but that switching into being a savant is prevented by highly cognitive conceptual top-down processes limiting our ability to tap into memory deriving from bottom-up *raw perception*

Following Carhart-Harris' model of the entropic brain, the archaic Homo sapiens were driven by primitive consciousness, with high entropy, high creativity, and in different stages of ASC. I suggest that this state of mind may have included an access to raw perception, raw memory in a sort of a creativity mode, so that the creators of the paintings were able to render the animals as naturalistic as possible, into every detail of gross movement.

³⁰⁰ Park, Kirk, and Waldie, "Neural Correlates of Creative Thinking and Schizotypy."

CONCLUDING SUMMARY

In this thesis I have focused on prehistoric art, and the question: can art historians contribute to rock art research? When working with rock art you would be surprised by art historian's nearly complete absence from the field: We have seen that this is, basically, connected to the question: what is *art*? So it became obliged to focus on the terms *art* and *artefact*. First we need to agree upon a terminology that is including and applicable to rock art without diminishing the aesthetic value of it. We looked at *cross-cultural* aesthetics or *transcultural aesthetics*, but landed on the term *artification*, coined by Ellen Dissanayake (1992). Is it less art history if we stick to this term? Perhaps, but as we saw in the discussion in chapter 2, established terms such as *art* carries undisputed meaning, and this is still the case.

As recent as May the 2nd 2016, this issue was the topic in a radio broadcast called *Kulturnytt* ('News from culture') on the Norwegian State Radio Channel (NRK). It was a hot discourse between architect Erik Collett and art historian Kristin Bliksrud Aavitsland. The issue at hand is Nasjonalmuseet (The National Museum; earlier Nasjonalgalleriet) in Oslo, which is known for housing a rich art collection, but this building will now be emptied. Then the question arises: what will replace the art works? The University of Oslo want to move in their cultural collection, but huge protests are raised against this plan; these voices want to keep it as an *art* gallery. Collett reminds us of the building's historic significance, and especially its content of sculpture and painting, and how the building have become a part of the collection it held. The host is claiming that the University still want to use it for displaying art, and Collett replies: «that depends on how you interpret *art*» and finds the cultural collection (consisting of antique and middle age items) only as crafts and decoration pieces, such as stave church portals. He claims that the building is only meant to contain *visual arts*. Bliksrud Aavitsland argues that to staunchly uphold that these items are not *art* represents a very old fashion view on what artworks are. Collet, on the other hand, says he has full respect for the cultural collection, but it should not be displayed in the National Gallery.³⁰¹

So, if the exiting stave church portals are not artworks, what shall we then call the different findings of pre-historic art? Can the problem be solved by using Dissanayake's *artification*? At least we include more of the arts and do not offend anyone. I find Dissanayake's term the best

³⁰¹ M. Lillelien, "Skal Nasjonalgalleriet Består? Debatt Mellom Erik Collett Og Karen Bliksrud Aavitsland," in *Kulturnytt*, ed. T. G. Eriksen (Radio: NRK, 2016).

fit for this research, also because of its promising application in a study on humans as creative beings.

So I find it appropriate to say that the cave paintings are not necessarily *art* from a modern Western point of view (such as that of architect Collet, above) but a result of *artification*, and should be regarded and respected as so in the history of art. Not only because of its sheer beauty and complexity, but also since the works becomes a laboratory for our studies on the evolution of cognition; this can teach us about ourselves, and our creative abilities. To be able to express ourselves is universal, regardless whether it has been engraved in stone, or carved in mammoth tusk, painted on canvas, or displayed as a signature on a urinal, tilted to the side and given the name Fountain (Marchel Duchamps).

What Dissanayake does is to avoid the Western and Kantian *disinterested* view on art: «(Neuro)aesthetics should not be limited to the arts but should instead focus on all types of aesthetically appraised objects and phenomena. And a proper understanding of the arts does not benefit from a narrow aesthetics of perceptual preferences, but instead requires *artsology* that seeks to explain the full array of cognitive, neural, and cultural phenomena involved in the universal behaviours of artification».³⁰²

Again: Why are art historians almost absent from rock art research? The answer will seem to be rather simple; they are too strongly bound up with our Western definition of *art*, deriving from the philosophical aesthetics of Kant and Hegel *inter alia*. Only by breaking out of this *prison of thoughts* can the art historian join the team of rock art researchers, becoming a resource in this area. After all, education does not stop past a master thesis, the most fascinating themes being those you learn from other disciplines. But also as an art historian proper, you can use trained eyes to recognize styles, to be a connoisseur, helping identifying the many hands being at work in the caves, study techniques of paintings etc.

In chapter 5 and 6 we elaborated on neurocognitive studies on rock art, where Lewis Williams' hypothesis gains support from on-going and very advanced methods in mathematical biology:

³⁰² Dissanayake and Brown, "The Arts Are More Than Aesthetics: Neuroaesthetics as Narrow Aesthetics," 45.

Froese, Woodward, and Ikegami agree with Lewis-Williams that the beautiful paintings in the Upper Palaeolithic era could very well be the result of *altered states of consciousness*.

Finally we focused on another phenomenon that is particularly impressive in such caves as Chauvet and the Sanctuary in Les Tres Frères (France), where the depicted movement of the animals is so compelling and savant-like that we have labeled it as a boost of creativity. As we learned from Snyder, we are all potential savants, but that switching into being a savant is prevented by highly cognitive conceptual processes that avert us from tapping into memory deriving from *raw perception*. Carhart-Harris' model of the entropic brain, illustrates how creativity depends on our mental state. It suggests that the prehistoric man with what Carhart-Harris labels as *primitive consciousness* was closer to *altered states of consciousness*, which is another statement in favour of Lewis-Williams' thesis. I believe that this primitive consciousness also implied access to highly detailed raw perception which could lead to its reproduction into detailed paintings, such as in Chauvet and Les Tres Frères.

It will seem that from a potential of tapping into raw perception in early childhood it is lost as we enter school, and starts to learn frameworks of ideas and concepts. This was the conclusion in George Land's creativity test (1968), where he tested 1600 children from 3 to 5 years, who were just about to be enrolled in school. The results show that among 5 year olds, the level of creativity is at 98% and as they grow older it decreases rapidly. At 10 years old the creativity had lowered to 10%, and the adults are at a striking 2 %. What George Land concluded is that non-creative behaviour is learned.³⁰³ Robinson argues that we don't see the world directly but through concepts, which acts like filters on what we see and how we see it. Some of the ideas we get enter our consciousness so deeply we are not even made aware of them, but we might read them as common sense.³⁰⁴ This seems to not be the case of prehistoric humans, they could enter a state of hyper creativity on a regular basis, and that is how they were able to paint these beautiful paintings, and should be regarded as great aesthetes and artists. As stated by Dissanayake, art is an important and unique behaviour that has been practised over thousands of years; art was everywhere in daily life and it was important.

³⁰³ G. Land and B. Jarman, *Breaking Point and Beyond*, Harper Business (1993).

³⁰⁴ Robinson and Aronica, *The Element: How Finding Your Passions Changes Everything*, 251.

Appendix

Biological evolution and cultural evolution

Biological selection creates capacities that make culture possible, and culture has produced new selection operators that have an effect on our biology.³⁰⁵

Petter Portin

Recent studies in evolution of the human brain stress the significance of *cultural* factors in *biological* evolution (for a recent review: M. Nadal, M. Capó, E. Munar, G. Marty and C.J. Cela-Conde, 2009). A mathematical model on the role of culture in evolution (K.N. Laland *et al.*, 2001) shows that so called *cultural niche construction*, defined as «the way the organisms regulate the environment in a process changing the selection pressures to which they and other organisms are exposed,» will seem to have contributed significant to human evolution. The analysis suggests that «where cultural traits are transmitted in an unbiased fashion from parent to offspring, cultural niche construction will [---] change the human selective environment, and [...] affect which genotypes survive and reproduce.»³⁰⁶

Portin (2015) gives the following definition of cultural evolution: «Cultural evolution, or the developments of cultures, can be defined as change of the behavior of individuals through learning in an individual from another ... In humans, cultural selection is at least partly based on conscious action. In cultural evolution, selection is not, at least directly, targeted at the genetic information included in the DNAs, but at that information that is produced by the human species itself, which can be material or immaterial».³⁰⁷

It has been demonstrated that hundreds of genes has been activated as a result of positive selection during recent human evolution, and that this is the result of human activity and cultural development. This shows that there is an ongoing coevolution of culture and genome.³⁰⁸³⁰⁹ Quoting Laland: «Characteristics pointing at the coevolution of genes and culture have also been observed among such clearly cultural traits as learning, teaching, and the social

³⁰⁵ P. Portin, "A Comparison of Biological and Cultural Evolution," *Journal of Genetics* 94, no. 1 (2015): 158.

³⁰⁶ Laland, Odling-Smee, and Feldman, "Cultural Niche Construction and Human Evolution."

³⁰⁷ Portin, "A Comparison of Biological and Cultural Evolution," 159.

³⁰⁸ *Ibid.*, 165.

³⁰⁹ K. N. Laland, J. Odling-Smee, and S. Myles, "How Culture Shaped the Human Genome: Bringing Genetics and the Human Sciences Together," *Nature review of Genetics* 11 (2010): 148.

transfer of culture. Such characteristics seem to be intelligence, certain features of behavior and personality, as well as the talent for cooperation».³¹⁰

In cultural evolution, the genetic sequences along the DNA are not altered, just activated. Information is transferred between individuals by social learning mechanisms: imitation, learning, and language. The development of language shares traits with biological evolution: genes in biological evolution vs. words and phonemes in development of languages: «new words and tones of voice, for example, correspond to mutations in biological evolution».³¹¹ The mathematical biologist Nowak and Komarova (2001) has shown that biological and cultural evolutions of language have, in fact, proceeded hand in hand.³¹² Biological evolution is, however, slow, whereas cultural evolution is rapid and accelerating, and it «is cumulative, because it is based on the creative action of people and because it involves collection and storage of information».³¹³ As underlined by Portin: «(T)he mechanism of inheritance in cultural evolution is ... network-like»³¹⁴ (Fig. 29).

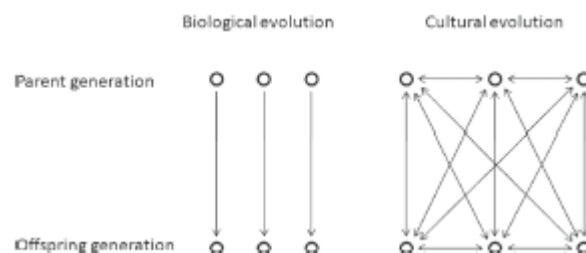


Fig. 29 The mechanism of inheritance in cultural evolution is firstly social, conceptual and mental, and secondly bidirectional vertically, horizontally and obliquely, in other words network-like. Biological evolution is unidirectional driven by distinct mutations that changes the DNA sequences and, hence, the gene. (From P. Portin, 2015, his Fig.1.

Which biological factors are involved in cultural evolution? As we have seen, the cultural evolution includes an activation of genes but no alteration of genes. The brain responds to external factors by increasing its connectivity patterns, which means that the number of fibers between nerve cells and their synapses increases. This takes place during natural expansion of the brain during infancy, but it will also be the response to external factors, such as cultural factors

³¹⁰ Ibid.

³¹¹ Portin, "A Comparison of Biological and Cultural Evolution," 160.

³¹² Ibid., 164.

³¹³ Ibid.

³¹⁴ Ibid., 160-61.

that directly influence the (meta) plasticity³¹⁵ of our brain. We now arrive at a term that is more or less being connected to the cultural evolution, namely *epigenetics*. Epigenetics is the biological mechanism of activation of specific genes, through small molecules, methyl groups ($-\text{CH}_3$) and acetyl groups ($-\text{CH}_2\text{-COO}$) binding to the DNA molecule without making any structural changes; it just activates (the acetyl groups) or deactivates (the methyl groups) the particular genes (Fig. 30).

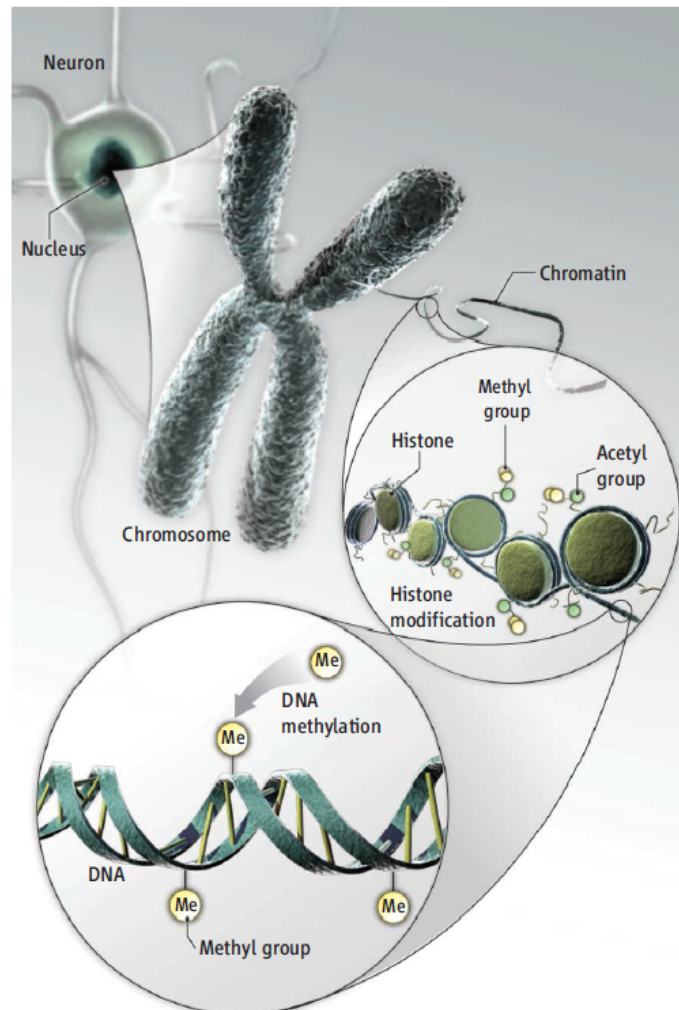


Fig. 30. Epigenetics is the biological mechanism of activation of specific genes, through small molecules, methyl groups ($-\text{CH}_3$) and acetyl groups ($-\text{CH}_2\text{-COO}$) binding to the DNA molecule without making any structural changes; it just activates (the acetyl groups) or deactivates (the methyl groups) the particular genes.

(From G. Miller, 2010).

³¹⁵ Malafouris, "Metaplasticity and the Human Becoming: Principles of Neuroarchaeology."

According to the neuroscientist Jean-Pierre Changeux, «(b)rain epigenetic capacities to store stable representations of the outside world give human beings the opportunity to create an artificial world of cultural objects at the social level. In other words, the origin of culture and its transmission from generation to generation lies in the considerable increase of synapse numbers and multiple nested processes of activity-dependent synapse selection that takes place postnatal in the human brain. This epigenetic evolution also has another consequence: it permits the diversification of the cultures that human beings have developed through their recent history. In other words, *the postnatal epigenetic evolution of brain connectivity opens the way to cultural evolution* (the italics are mine).»³¹⁶

³¹⁶ J.P. Changeux, "Genes, Brains, and Culture: From Monkey Brain to Human Brain," in *From Monkey Brain to Human Brain*, ed. S. Dehaene, et al. (Cambridge, MA.: MIT Press, 2007).

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