

Scientists in no-man's land: Science inadvertently promotes the confusion between art and design.

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- ❖ ***This article is a section (3.4) from Tsion Avital's book: THE CONFUSION BETWEEN ART AND DESIGN: Brain-Tools versus Body-Tools. Vernon Press, 2017. This section is uploaded to ResearchGate by kind permission of Vernon Press.***

I must immediately point out that I am neither archaeologist, anthropologist nor paleoanthropologist, but rather a scholar trying to understand the essence of culture, in particular art and design from a philosophical and transdisciplinary point of view. Therefore, I have no intention of entering into dispute with scientists on any fact in their field of expertise. On the other hand, let us recall that in reality there are no facts but only interpretations, and fact is an accepted interpretation in the framework of a certain discipline for a limited length of time. Indeed, the history of science is a history of “facts” that have vanished from the world, for the interpretation of findings and of phenomena changes over the years due to the discovery of more general and coherent conceptions. The new “facts” too are neglected in turn upon the discovery of more general and coherent conceptions than those which gave birth to them. The subject of this paragraph is not some particular archaeological fact but rather the interpretation given by scientists to certain graphical findings of enormous value for the understanding of the origins of design and art. The question whether a certain finding is art or not, and whether a certain finding is art or design, are not necessarily and certainly not exclusively archaeological problems; they are no less philosophical or theoretical problems which are not necessarily included in the scientists' field of expertise. In a different essay (Avital, 2001) I attempted to show that for purposes of understanding the origins of art, empirical knowledge is not sufficient, nor is philosophical-cognitive knowledge. Both viewpoints are necessary for understanding of this phenomenon requires the complementarity of the two approaches. The situation in practice is that on one hand the art world displays lack of interest or minimal interest in the archaeological findings related to art and design. On the other hand, scientists too show minimal interest in the theoretical layer of art, and it is difficult to complain of this just because there is no solid paradigm for the understanding of art. Nonetheless perhaps they do not take into account the fact that the empirical view is impossible without a plethora of distinctively theoretical and cognitive assumptions. In a certain sense one can say that the “object” is a totality of the meanings we attribute to it, otherwise its perceptual aspect will be meaningless. In a certain sense “object” is a perceptual concept. Note that even the crudest kind of empiricism, the behaviorist, must pre-assume a horde of innate cognitive capacities otherwise even the most elementary kind of learning is impossible. That is, learning is impossible without assuming that all organisms have an innate capacity to learn. Therefore, scientists

have no choice but to deal with the theoretical layer of art. Otherwise they risk a mistaken interpretation of their findings. On the other hand this requirement is nearly impossible, for the discipline dealing with the history of art lacks any tools for distinguishing between art and nonart, and the world of aesthetics is a jumble of theories none of which is general and coherent enough to provide a truly adequate answer to the question "what is art?" In another essay (Avital 2003) I attempted to show that a structuralist approach to the problem of the definition of art does indeed solve these questions. However either from cowardice or lack of intellectual ability the world of aesthetics as well as the world of art refrain from really dealing with this solution. The accepted solution is an unbounded multitude of mini-theories and approaches and the rule is *laissez-fair*: don't criticize me and I won't criticize you, everything is legitimate and the supreme criterion of art today is not truth but branding and the financial benefit resulting from this. With such a pathetic state of affairs in the world of art, what is the scientist to do when wondering whether a certain finding he/she has discovered is a work of art or not, and according to which of the jumble of min-theories? Perhaps this dilemma is not easily solved, but it cannot be ignored without risking the validity of the interpretation given by scientists to some empirical findings which may be art or may be design.

The distinction between art and design is a very late distinction and did not exist for the inventors of prehistoric art, and even less so for builders of prehistoric tools. In fact, this confusion exists up to this day, and not only among the general public, but no less among museum directors, curators, artists and designers. Moreover, as we will see in examples discussed below, because in the world of art and design there is no clear distinction between the two fields, scientists and in particular archaeologists and anthropologists who discover archaeological findings of great significance for the evolution of culture, art and design interpret their findings in accordance with that which is accepted in the world of art and design today. These scientists make the naïve assumption that indeed in the world of art and design there exist clear demarcation-lines between art and non-art. Thus, without being aware of it, they spread the confusion with regard to art and design among their readers and help to entrench incorrect opinions with regard to these areas. Worse, they cause real damage to science, for they interpret empirical findings related to the cognitive evolution of man and culture based on groundless ideas from the world of art, design and aesthetics. As a result of their authority as renowned scientists, and because of the great authority of the scientific journals in which their findings are published, such as *Nature* and *Science*, the incorrect interpretation they give their findings receives authorization at the highest level. Even worse, they indirectly strengthen baseless opinions which are common in the world of art and aesthetics.

Below are some illuminating examples of this confusion. In 2002 in the caves of Blombos, South Africa, located 300 kilometers east of Cape Town on the coast of the Indian Ocean, two small stones were discovered, about the size of a pinky, and on the diagonal, parallel, symmetric and reversed engravings, so that a number of rhomboid structures were formed on the stone (Fig. 3.3) Dating showed that these engravings were 77,000 years old (Henshilwood et al. 2002). I believe that the findings of Henshilwood et al. are among the most important findings ever discovered for the understanding of the evolution of culture. At about the time these stones were discovered I happened to be in South Africa, and I made a special trip to Cape Town

to see one of these two stones in the Iziko South African Museum, and this was one of the most impressive experiences I had ever had in any museum. In fact, to this day that small stone is the only thing I recall from my visit to that museum. Years later a number of stones were discovered bearing similar engravings, about 75,000-100,000 years old (Henshilwood et al. 2009). The discovery of these stones, and others similar to them a few years later, is an extremely important archaeological and anthropological discovery. However, explanation of these stones is not necessarily an exclusively archaeological or anthropological issue, in particular as some scholars see the engravings on them as testimony to symbolization and others see them as the beginning of art. However, in what follows I will differ with the interpretation of these scholars as to the significance they attribute to these findings. The scholars who discovered these stones assume that these engravings represent something that we do not know, or at least that they possess some symbolic significance. On the other hand, two of the most important scientific journals, *Nature* and *Science*, came out with a declaration that the age of art was set back at least forty thousand years. Thus John Whitfield (2002) wrote in the headline to his article in *Nature*: "Art history doubles... Engraved stones found in a South African cave could be the earliest known artworks." (Whitfield, 2002).



3.8. Top. Engraved ochre from Blombos Cave Project, c. 75 - 80,000-year-old.
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3.9. Bottom. Prehistoric carved lion, Vogelherd Cave, Germany. The figurine is engraved with very similar geometric crosshatches found in Blombos and dated at 30,000-36,000 years.

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Similarly, Michael Batler (2002) wrote in *Science*:

Archeologists in South Africa have found what may be the oldest known art, dated at least 40,000 years before the earliest cave paintings in Europe. The artifacts, two chunks of red ochre engraved with geometric crosshatches, were recovered from 77,000-year-old cave deposits. It's unclear what the ancient artist meant the marks to represent.

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On what do these two authors base their claim that these engravings are works of art? Of course, they take for granted the modern perception that reduces art to design, and so all graphic design is automatically art. They and other scientists are unaware of the fallacy concealed here: It is true that every work of visual art is also graphic design, but it does not follow from this that all graphic design is also a work of art. On the other hand, it is hard to blame them, for as scientific authors it is not their role to define art. In light of the analysis presented up till now in this book, it is clear that the engravings on these stones are not works of art but rather specific if very early cases of graphic design. We have no possibility of knowing whether these engravings had additional significance. This doubt is strengthened in light of the fact that very similar geometric structures were found on artifacts from other places and times. Thus, for example several years after the discovery of the first engraved stone in Blombos, another thirteen stones with similar engravings were discovered there and are dated at 100,000 years (Batler, 2009). Similarly, there are findings from tens of thousands of years later such as that which can be seen on the figurine of a lion found in Germany engraved with very similar geometric crosshatches and dated at 30,000-36,000 years (Fig. 3.6). Do these engravings indeed mark the origin of art, or are they among the earliest evidence of graphic design? Note that in papers by Henshilwood et al. (2002, 2009) it is never claimed that the engravings on the stones are works of art, but I am not aware that they rejected such an interpretation by other scholars. However, they emphasize that these engravings apparently had some symbolic significance of which we are not aware.

The scholars claim with justice that these engravings were made intentionally, for it is not possible that the parallel and rhomboid lines are the result of accidental activity. The question is whether the very fact that these lines were intentionally engraved, as well as the fact that the lines constitute a geometric pattern which is clearly symmetric, imply that they possess symbolic significance. And if these lines do indeed possess symbolic significance, what type of reference can these engravings have? In accordance with the answer to this question it is possible to determine whether these engravings are indeed the origin of art as claimed by Batler (2002, 2009) and Whitfield (2002), or whether they are merely early examples of graphic design. From this we can also determine whether there is a basis for the claim by Henshilwood et al. (2002) that: "The Blombos Cave engravings are intentional images. In the light of this evidence, it seems that, at least in southern Africa, *Homo sapience* was behaviorally modern about 77,000 years ago." The vagueness of the language works in favor of these scholars but also against them.

Abstract images similar to the Blombos Cave engravings occur at Upper Paleolithic sites in Eurasia (15). The Blombos Cave motifs suggest arbitrary conventions unrelated to reality-based cognition, as is the case in the Upper Paleolithic (15), and they may have been constructed with symbolic intent, the meaning of which is now unknown. These finds demonstrate that ochre use in the MSA was not exclusively utilitarian and, arguably, the transmission and sharing of the meaning of the engravings relied on fully syntactical language. (Henshilwood et al. 2002, p. 295. Italics mine).

The key words in this quote are "abstract" and "symbolic." The trouble is that each of these words has many meanings and they are not all compatible with each other, and some are even contradictory. The two words have been in use for over two thousand years, from the days of Greek philosophy, so that enough time has gone by for these concepts to accumulate many meanings. Of all the many meanings of "abstract," I will focus only on two common and particularly important meanings of this concept². One meaning of "abstract" is to eliminate, separate, remove, and this is the meaning derived from the Latin term abstractio. For convenience of discussion we will call this abstract-a. For example, in paintings by Mondrian he eliminates all visual components from paintings of trees until he arrives at grids or geometric patterns. In contrast, in philosophy, figurative art, science and mathematics "abstract" or "abstraction" means elimination of the specific characteristics of a number of objects while preserving their common characteristics only, and transformation of these to a common denominator for all objects of the same type. That is, in this case abstraction means ascent to a higher level of generalization. For instance, every figurative painting presents the graphic common denominator between a certain group of objects, and by so doing it presents their visual generalization. Thus, a prehistoric painting that represents a bull by means of the bull's contour represents the group of all bulls of the same type, and so this painting is a pictorial class-name just like the concept "bull." The main difference between them is that the word "bull" represents every one of the three hundred types of bulls known to us, whereas the painting describes only a certain group of bulls with visual characteristics similar to those seen in the painting. Therefore, every figurative painting is a visual generalization even if the entities described there are completely fictive. For convenience of discussion we will call the second meaning of this concept abstract-b. Clearly these meanings of "abstract" are contradictory for the first creates simplification whereas the second creates generalization. When Henshilwood et al. write about the lines engraved on the ochre stone that they are "abstract images," they use the term "abstract" in the first sense, abstract-a, and not in the sense of generalization or the second meaning, abstract-b. For those same lines that create triangles and rhombuses represent particular cases of the geometric concepts of lines, triangles and rhombuses which are completely abstract entities. In other words, the geometric concepts, line, triangle or rhombus, are geometric generalizations and so they are completely abstract terms which have no specific measure and do not exist in space and time. In contrast, any drawing or engraving of a line, triangle or rhombus create a particular case of these entities, and therefore are not abstract in the artistic-figurative, philosophical, scientific or mathematical sense.

In the same way the concept "symbol" too has many meanings, but I will focus on two that are common and particularly relevant to this discussion. The most common meaning of "symbol" is, as defined by Webster's dictionary: "something that stands for

or suggests something else by reason of relationship, association, convention, or accidental resemblance; *especially*: a visible sign of something invisible." In this meaning there is no real difference between "symbol" and "sign," as for instance road signs, all of which are intended to serve as a substitute for written instructions for behavior on the road. Some of these signs are completely arbitrary, such as for example the triangular sign which instructs us to give right of way to a vehicle on the road that crosses the road we are driving on. In some of these signs there is a certain similarity or association to behavioral instructions, such as for example the sign showing the silhouette of a certain animal, intended to warn us of the danger of collision with these animals. In order to narrow down the great confusion that exists in relation to the concept "symbol" I propose to call symbols of this type "signs." Such signs are the enormous collection of signs which all creatures use: visual, acoustic, smells and combinations of all these. For example, the neighbor's dog often urinates on the tree near my house in order to send regards to all the dogs in the neighborhood, farmers use pheromones in order to attract or reject various insects and so on. Various insects and reptiles have colors which warn potential predators that they are toxic and it isn't worthwhile to devour them. Other animals have colors warning that they are toxic but this is just a successful survival trick; the tracks all animals leave on the ground are signs, and so on. It is important to note that signs are not related in a systemic manner. There is no necessary dependence of some sign on another sign, no hierarchy between them, and it is not possible to create a sentence by joining a number of signs. In short, they do not have the characteristics of words in a language.

Another type of signs consists of those signs that constitute symbol systems, such as the words in natural language or the pictorial signs in figurative painting. Again, according to Webster (1971): "Symbols tend to appear in clusters and to depend on one another for their accretion of meaning and value." Indeed, words and figurative symbols appear in clusters, but this term does not sufficiently express the power of the inter-connections between symbols in these cases. In contrast to symbols that are signs, here there exists a systemic relationship between all the symbols, directly or indirectly. Thus, for example the relationship between words in a sentence, paragraph etc. Such a relationship also exists between all the figurative symbols in every painting of this kind. But it does not exist in any modern "abstract" painting. A hierarchy of levels of generalization of symbols exists, as in the case of the symbols dog, mammal, organism. Signs at most create codes but not languages. In contrast symbols create languages, which are also codes, since every language is a code, while not every code is a language.

We have already said that the engravings from Blombos are abstract in the sense of simplification and not generalization, and so these engravings are signs and not symbols. From this it also follows that these signs are not evidence of symbolic ability which is unique to modern man, and stems from his\her ability to employ language, which is a system of abstractions or generalizations. That same ability finds expression in the ability to create and to read figurative paintings, which constitute a visual language, which is a system of visual generalizations. In simple language, the engravings from Blombos are not generalizations and are not symbols but rather are signs. Let us recall that according to Henshilwood et al. the important point is not the question whether the engravings on the stones from Blombos are art or not, but rather to show that these engravings attest to cognitive-symbolic ability which is one of the central characteristics of behavior of modern man. In light of these engravings, they

claim that this ability had existed for about a hundred thousand years. In a paper by Whitfield (2002) Henshilwood is quoted as saying: "Clearly, they stand for something else - they're not idle doodles," . I would say to Henshilwood: It is not clear at all: this is precisely what you have to prove, not to assume as a fact. The analysis presented here shows that these engravings cannot be used as testimony of the symbolic ability characteristic of modern man, and so I fear that these scholars fell into a fallacy called in logic *Petitio Principii*. This is the case where we assume in advance the thing that we need to prove. They assume that these engravings are "abstract images" as if they were figurative paintings, while in fact these engravings are simple signs. They assume these engravings symbolize something beyond themselves, but these are not symbols but rather signs. So, it is possible that these engravings refer to something beyond themselves, but this is not symbolization. For every case of symbolization is also a case of reference, but not every case of reference is also symbolization. This is one of the differences between code and language. I do not claim that 100,000 years ago man lacked the symbolic abilities characteristic of modern man, quite the contrary. But the Blombos engravings cannot serve as testimony or proof of this claim. Thus, for example bears mark their territory by rubbing their body on a tree, and they also create scratches on the bark of the tree. The scent and the lines on the tree warn other bears that they are entering into the territory of a different bear. It is not impossible that if a bear created scratches on a tree first with his\her front right leg and then scratched the tree with his\her left front leg, we might obtain a pattern resembling the Blombos engravings. Would we then say that bears have symbolizing ability similar to that of modern man? Of course not, for these are signs and not symbols. Since in Blombos Henshilwood et al. found tools of stone and bone of a spectacular level of design as well as 8000 ochre stones, and since to this day in certain regions of Africa ochre is used for body decoration, perhaps the Blombos engravings belong to a tradition of design of objects and body decoration. In an interview by John Whitfield (2002), Henshilwood is quoted on this subject as saying: "Red ochre "didn't just lie about the cave", Henshilwood adds. "It would have had to be brought 30 or 40 kilometers. The stone might also have been used for body paint or decoration, he says." I fear that the source of the vagueness of use by Henshilwood et al. of the term "symbol" stems from their reliance on an old and not particularly successful definition of the term by Peirce (1998) whom they quote:

The second question we raise is whether these engraved patterns were perceived as symbols by the Blombos inhabitants. According to Peirce (1998), a symbol denotes a kind of sign that has no natural or resembling connection with its referent, only a conventional one. Symbols cannot exist in isolation, but generally form a part of systems in which they are interlinked.
Henshilwood et al. 2009, p. 42.

Peirce's definition is barely adequate with respect to verbal symbols, but is not at all relevant to pictorial symbols. It is true that with words there is no resemblance between symbol and that symbolized because words are conventions. However in the case of pictorial symbols, the resemblance between the representation and that which is symbolized is its most important characteristic³. This is the reason we are able to read any figurative painting, even if it is tens of thousands of years old, but are unable to read any "abstract" painting. At the close of their paper, Henshilwood et al. 2009, on p.45 the authors claim of the engraved ochres from Blombos : "The fact that they were created, that most of them are deliberate and were made with representational intent,

strongly suggests they functioned as artefacts within a society where behavior was mediated by symbols" (my emphasis). Again, I fear that the authors assume that which they attempt to prove. The authors do not present any proof and cannot present any proof that these engravings "were made with representational intent." All that can be said is that these are engravings that were intentionally made and they are graphic design. This is consistent with the fact that they emphasize that the frequent use the creators of these engravings made of ochre stones strengthens the assumption that they used it both for the purpose of body decoration, which is a type of design, and for protection of the body from the sun. Whether indeed these engravings had significance beyond this is something we will never know. In a survey published by Michael Balter (2009) on these findings, again he expresses doubts as to whether the engravings from Blombos are art or not, and it is difficult to blame him for this confusion. If artists and aestheticians did not succeed in characterizing the differences between art and non-art, one cannot blame scientists or authors whose primary background is in science. He quotes scholars who believe that these engravings may be the origin of art, but he also quotes those who do not hold this opinion. "Archaeologist Richard Klein of Stanford University... says that ultimately the question of whether the engravings were symbolic "is not something that science can resolve." " Balter (2009, p.569).

As if the confusion relating to the interpretation of the Blombos engravings is not enough, at the very same time as this paragraph was written, an article was published (Joordens et al. 2014) that presented engravings made on a *Pseudodon* fossil (figures 3.6, 3.7) whose origin is in Trinil (Java, Indonesia), and that are far more ancient than the engravings found in Blombos. These engravings were made about half a million years ago by *Homo Erectus*, a race that lived in the period from 1.9 million years ago until 143,000 years. The engravings were made in a precise and symmetric form, and it is not possible that they were created by chance, but rather it is clear that they were intentional. Even though I dispute the interpretation of these scholars as to their significant finding, I would like to emphasize that to me this is one of the most important findings in the history of archaeology with regard to the evolution of human culture. Why? Because the finding demarcates one of the most important landmarks ever discovered in the evolution from tool design about 3.3 million years ago to the origins of art about forty thousand years ago. Let us recall that graphic design is immanent in tool design for it is the central part of the image or template which must be in the mind of the stone worker before he\she begins to construct the tool. In fact evolved graphic thinking came before construction of tools, for apparently the hominids had highly developed footprints literacy even before they manufactured stone tools (Avital, 1998a). I remind the reader that design and art are two cognitive activities belonging to completely different levels. As has been noted, there are many differences between art and design. To mention only a few: every painting contains graphic design but the reverse is not true; not every graphic design is a painting. The difference is that graphic design is made of certain aesthetic (perceptual) elements such as line and color, but it has no universal syntax or universal semantics. It has no hierarchy of symbols with their embedding and self-embedding. A painting has reference and self-reference, whereas graphic design does not necessarily have any kind of reference and certainly not self-reference. A painting is a system of pictorial symbols or a system of abstractions and generalizations. In contrast, graphic design has no symbols but rather signs. Therefore, it is not made of any generalizations but on the contrary: it is

made of specific and concrete examples of lines, geometric shapes and colors. In short, painting belongs to second order reality whereas design in most cases belongs to first order reality. Therefore, it is clear that design is a necessary condition for art, but not a sufficient one, and so graphic design had to appear in the evolution of culture a great many years prior to the appearance of painting. The question that disturbed me for many years was where are the intermediate stages between the design of stone tools over 3.3 million years ago and the appearance of figurative art forty thousand years ago? Throughout this long and almost empty continuum there were indeed important and lone landmarks from the world of sculpture such as the discovery of the figurine from Tan-Tan (Bednarik, 2003) which is dated between 300,000 and 500,000 years ago, and the figurine from Berekhat Ram (Goren-Inbar, 1986) which is dated at 233.000 – 470.000 years ago. Therefore, the discoveries of Henshilwood et al. (2002, 2009) which are distinctive discoveries of graphic design important, for these discoveries were the beginning of the solution of the nearly empty puzzle between the origin of stone tools and the origin of painting. The discovery by Joordens et al. 2014 is even more exciting, for this discovery presents a far more ancient landmark: from over half a million years ago. At last here is a clear missing link between graphic design and art. The gap that was nearly empty until now, between the origin of stone tools and the origin of painting, has begun to have intermediate points. All these intermediate points and those still to be discovered will enable us to better understand not only the evolution of design and of art, but to better understand the cognitive evolution of man.



3.10. Top. Engravings made on a Pseudodon fossil whose origin is in Trinil (Java, Indonesia), and that are far more ancient than the engravings found in Blombos. These engravings were made about half a million years ago by Homo Erectus and were made in a precise and symmetric form. Hence it is not possible that they were created by chance, but rather it is clear that they were intentional.

3.11. Bottom. Detail of 3.10

Photographer : Wim Lustenhauer.

Both photos are reproduced here by kind permission of Josephine Joordens, VU University Amsterdam.



The great question is once again how to interpret these engravings? What is the meaning of the engravings if at all they had meaning? Are they signs that refer or symbolize something exterior to them or were they made as decorative elements, or simply put, an ancient example of graphic design? Scholars are wary of claiming that the engravings have symbolic meaning, and certainly they do not claim that this is the origin of art for they have no basis for such a claim. But their vague language does not negate these two possibilities and even points the reader to such an interpretation: "Although it is at present not possible to assess the function or meaning of the engraved shell, this discovery suggests that engraving abstract patterns was in the realm of Asian Homo erectus cognition and neuromotor control." (Joordens et al. 2014) (My emphasis). What is the meaning of the words "abstract patterns?" The moment that the terms "abstract" and "pattern" are used they already hint obliquely at the possibility that these engravings possess some symbolic significance. As has already been said, among the many meanings of the word "abstract," there are also meanings that indicate the opposite: "abstract" in the intellectual, theoretical, conceptual sense etc. In that sense abstraction involves various levels of generalization. In contrast another meaning of "abstract" is nonconcrete, immaterial, nonfigurative, and then generalization is not necessarily involved. There is a hidden misleading here: true, the abstract is not concrete. However, if something is not concrete, it does not necessarily follow that it is abstract. These engravings are in no sense abstract but rather are completely concrete marks. Another meaning for "abstract" is simply elimination or even lack of reality or emptiness. Clearly this is an extremely vague and semantically loaded concept, and therefore the authors' description leaves room for all the possibilities. This is incorrect and misleading. Why do the authors not write for example that marks were found on the shell? I fear they were swept away by the interpretation of the engraved stones from Blombos given by Henshilwood et al. On the other hand, the finding appears more impressive when it is called an "abstract pattern" rather than simply "marks." When marks are found that were made by animals, nobody calls them an "abstract pattern."

In contrast to these authors, the title given by Jennifer Viegas (2014) to her article discussing this finding is: Oldest Art was Carved onto shell 540,000 Years Ago. Similarly, there are other authors and scholars who interpreted this finding as art. On the other hand, the only basis all these have for this claim is the complete confusion existing today between art and design, and so their interpretation has no real value. In contrast to these scholars and authors, Helen Thompson (2014) gave what seems to me the least biased interpretation of all:

An examination of the shells published in Nature suggests that Homo erectus may have used the shells for tools and decorated some of them with geometric engravings. At around half a million years old, the shells represent the earliest evidence of such decorative marks and also the first known use of shells to make tools.

<http://www.smithsonianmag.com/science-nature/oldest-engraving-shell-tools-zigzags-art-java-indonesia-humans-180953522/?no-ist>

Decoration is not art, but rather a kind of design, and does not require any symbolic ability. It is a fact that many animals and birds are in the habit of decorating their nests as part of the process of courting the female. The reader can claim that this interpretation is biased as well, and he/she is correct. However, there is an enormous difference between an interpretation that obliges us to assume things that we have no possibility of proving, and an interpretation that makes no such assumptions. The interpretation of these engravings as decoration or graphic design does not assume any unrelated assumptions. In fact, the cognitive abilities necessary for the construction of stone tools that had been made for hundreds of thousands of years prior to these engravings are not less complex than the cognitive requirements for carrying out these engravings on shells. All we can say with certainty about the Blombos engravings as well as about the Trinil engravings is that these are an example of very ancient graphic design and not of art. Indeed, it is quite logical to assume that from an evolutionary point of view graphic design came much earlier than art, for it is immeasurably simpler. Along with this, design is a necessary but not a sufficient condition for the creation of art. Let us recall that design of stone tools began far earlier, 2.6 million years ago, and thus laid the foundations for the creation of human culture, because there for the first-time man's ancestors invented images that had no correlation in reality, and created objects from these images. In other words, here the first steps were made towards creation of second order reality or the world of symbols.

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