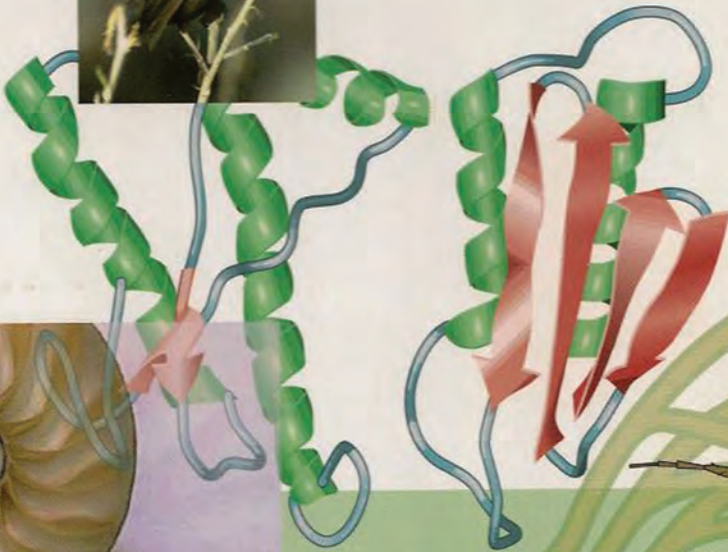


Encyclopedia of

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An Adaptive Function?

Human artifacts plausibly labeled as art date to around 300,000 years ago, indicating that humans have produced art throughout their history. Traditionally, the capacity to produce art has been seen as an outgrowth of other human capacities, rather than a trait that has evolved for that purpose. However it is intriguing, given art's antiquity and universality, to speculate that the capacity to produce and understand art has its own adaptive function. This requires a plausible account of how art gave individuals or groups higher Darwinian fitness.

The thesis suggested here is that art is a pre-linguistic form of communication, a way of transmitting information reliably, and may itself have been an early form of

writing. The ability to represent objects and ideas in the form of physical images and artifacts may have existed prior to language, as a form of symbolic communication. Such abilities could have been advantageous to their bearers or to the groups in which they lived. It is possible to consider that linguistic abilities themselves evolved from artistic capabilities, although this must remain a matter of speculation.

Three accounts for the origin of art are implicit in this summary. On the traditional view, art is merely a by-product of other evolution, and art itself did not evolve to perform any particular function (although this would not preclude it acquiring a function such as communication). The evolution of the brain is linked to other functions, such as logic and language, as these perform important functions to the individual. Individuals who can communicate and think clearly have higher rates of survival and reproduction. Artistic capability is simply an emergent feature of this kind of brain.

An alternative view is that artistic capability confers a "selective" advantage to individuals. Individuals who possessed "genes for art" would have had greater fitness than those who did not. Possibly artists were better communicators, or by virtue of producing art an individual enjoyed higher reproductive success by virtue of being more attractive and entertaining. In this scenario the evolution of the ability to create art would have to be matched by the ability to read art. This may suggest a group selection view.

On the group selection view, groups of individuals who had an artist in their ranks performed better than groups who did not have artists among them. This does not require the artist to behave altruistically for the good of the group. Rather, groups possessing artists were better at their tasks (e.g., hunting, trading, and gathering). Perhaps they could communicate important features of their environment to each other. Group selection models show that the genes for artistic ability need not spread through the population to fixation (i.e., everyone has them), that is not everyone needs to be an artist. All that is required is that the average fitness of individuals is higher in groups possessing artists.

Artistic capability using even the most primitive signs such as marks on trees or animal skins or rocks could improve cooperation and "planning," could serve to communicate or reinforce local customs or beliefs, or could act as a form of group defense to indicate the whereabouts of a hostile tribe and their numbers. One example of North American Indian picture writing has ten marks, preceding a canoe, preceding a fish—the fish is "read" as an identifier of a particular tribe, the Passamaquoddy. Thus ten Passamaquoddy Indians in a canoe. Whether this kind of communication is art or simply a form of written language is irrelevant as in the view advanced here art is a form of written language.

It is not possible to distinguish among these three scenarios with the available data. However, art's capacity to communicate, provoke, and possibly to compel suggests that it might have granted a group selected advantage. This view emerges from the recognition that a work of art has a dual existence. Once completed it is an object, with an existence independent of its creator. But the secondary existence is that, when it works, i.e., is re-created in the mind of the viewer, it communicates that which moved the artist—the *erlebnis*. To put it another way the lines, the colors, and to some extent the materials are there to be "read" by the viewer who then (ideally) re-creates what the artist intended. The viewer of an art work can take part in this process of re-creation and not be a passive onlooker, as might perhaps describe someone contemplating a natural object such as a stone, for which there is no need to re-create or imagine a creator's lived experience. Art is intended to communicate from artist to reader, the artist's beliefs and emotions.

A Brief History of Art and Language. It is acknowledged today that in ancient toolmaking many artifacts, as much as a million years old, appear as incisions or markings going beyond what was technically required of the tool. But while the pebble face of Makapansgat, South Africa, has been dated to Australopithecus (2–3 million years ago) it is the *Venus of Berekhat Ram*, Israel, which is accepted as the oldest known carving in the world and has been dated as 242,000–800,000 years before present (there is much known cave art dating to 30,000 bp).

When humans evolved language is still a matter of speculation, although it is probably reasonable to suppose that language is at least as old as *Homo sapiens*. This could place it back to perhaps 300,000 years or more conventionally to around 100,000 years, coinciding roughly with the time that modern humans spread out of Africa and then around the world. Certainly known art predates the oldest characterized language, Nostratic, a Proto Indo-European language inferred to exist some 12,000 years ago, and the oldest form of known writing, Sumerian (cuneiform), which is between 6,000 and 5,000 years before present.

But What Did Art Communicate? As suggested, art may have communicated information about many features of the environment. Much cave art is devoted to animals. Equally, though, there is a persistent tendency for art to communicate themes of sex, fertility, and reproduction. This is interesting in its own right because indicators of mating ability and fertility are among those most commonly subject to what is known as sexual selection, or selection for traits that confer mating or reproductive success. Implicit, of course, in the view that animals respond to sexually selected displays—such as the exaggerated tail of a peacock—is that animals have

some sort of aesthetic sense or preference. Could artistic appreciation have its roots in these very ancient biological systems?

Two works spanning some 23,000 years—both with their sexual overtones—communicate important biological subjects. The extraordinary *Venus of Laussel* (Figure 1), artist unknown, is a conceptual work of art dating from about 23,000 years ago. The details of the hands are unimportant—the left hand is shriveled compared to the voluminous breasts and the fingers striated (similar to the magnificent wood statues of the Dogon tribes). But the hand lies over her stomach—a possible reference to communication of an unborn child. If the head is in relief facing the horn then we have a work in which the body is seen from the front and in profile. Her head is of a size equivalent to her breasts indicating the importance of the function of breasts (nourishment) and/or the lack of importance of the head. The neck is straight, and her right hand is at an impossible angle being parallel to the body almost tilted back. This “distortion” is a sign of good art “in the modern sense” and a conceptual piece, not a mere reproduction of a woman. Her gaze is down into the horn, which is curved and of equal size to her breasts. This curvature of the horn is

FIGURE 1. *Venus of Laussel*.
27,000–22,000 BP; 54 × 36 × 15.5 cm; Musée d'Aquitaine,
Bordeaux Inv 61.3.1. Photo: J. M. Arnaud.



FIGURE 2. *Les Femmes d'Alger (O.J. Version O)*. Paris (June–July 1907).
Oil on canvas, 8' × 7'8" (243.9 × 233.7 cm). The Museum of
Modern Art, New York. Acquired through the Lillie P. Bliss Bequest.
Photograph © 2002 The Museum of Modern Art, New York.

repeated, echoed by her hair and her left thigh. An echo is usually an indication of an important stress. The horn if not a drinking vessel (her leaning down) could be that of power—an Orpheus-like instrument that controls the world of animals—a key instrument for hunters. One can imagine its use by her—she holds it, or it on her face symbolizes a powerful rhino-like creature. The symbolic content of the *Venus* is thus food, nourishment, reproduction, and if we look at the hips of the woman—the powerful concept of “genetically” sound childbearing hips. *The Venus of Laussel* is the work of an artist communicating womanhood.

Picasso's *Les Femmes d'Alger (O.J. Version O)* (Figure 2) portrays five figures (Dame 1 to Dame 5 from left to right) that spell his more complex concept of womanhood. The emphasis is on the object of desire rather than procreation, although Dame 5 has the most ample childbearing hips and enormous round breasts. Details of hands are unimportant—only two have striated visible fingers. Dame 1 is the enigmatic “type”—we cannot see if she is walking. Is it her left or right foot in front? Is it her hand above her head? Dame 2 is the most giving of women, the giving concept, her breasts are round, her head hangs sideways Christ-like, her right leg moves across to protect herself as does the sheet cover—or of course the sheet may suggest her showing her leg. There is good symmetry in this figure with its possible evolutionary references. Dame 3 is more threatening with

one pointed and one round breast, both arms up, hair up. Dame 4 has a protective element, a concern for the living, very differently displayed than the unborn child of the *Venus of Laussel*. But it is Dame 5 that mainly catches our attention. Here in 1907 Picasso has painted "liberated" woman equal to man—she is a thinker, her left arm rests on her knee and chin, a classic thinker position and its thickness reads that she is formidably powerful in this field. While she has her back to us, she has twisted her head around not unlike the owl—the symbol of wisdom. She will not be taken for granted, yet her features with the large breasts, broad hips are the most childbearing and conventionally attractive.

Both works have a mystery and beauty. Both are acts of artistic creation separated by 23,000 years and deriving from vastly different cultures—one pre-agricultural, the other technological. And yet in spite of this, they explore similar themes with a similar "language." Just as we can appreciate the *Venus of Laussel*, one can imagine prehistoric people grasping the meanings of Picasso's work—concepts of womanhood. Picasso's work at the very least, then, may suggest ways in which art exists independently of the linguistic milieu of the artist.

The many common elements in these two works of art show an ability to communicate universally and a wealth of information. The type of information also gives us a sociological insight as to what was seen as important at the time. In both cases a tribe or person who has access to these artworks was able to see the key elements were not the size of the hands or facial characteristics but concepts.

Did art precede language and evolve as an advantageous form of communication? Art is old, every culture has it, and it communicates universals as well as packages of information reliably and efficiently. It does not require the anatomical specializations of language, and was reasonably well developed in Neanderthals. A hunter in the pre-linguistic and pre-writing age may depict information graphically and to someone who has never been on a hunt this would be valuable and informative. Fertility images may have served to reinforce group norms and beliefs. One might argue that memes communicated artistically shift survival from being based not simply on the biologically fittest but on the fittest who work within the language of art (create, interpret, read, re-create), and those who best make use of the information it transmits.

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