



**I saw the angel in
the marble and carved until I set him free.**

—Miguel Angel Buonarroti (Michelangelo)

MORTIMER ADLER ON ART

[in two parts]

(1)

THE WORD “art” has a range of meanings which may be obscured by the current disposition to use the word in an extremely restricted sense. In contemporary thought, art is most readily associated with beauty; yet its historic connections with utility and knowledge are probably more intimate and pervasive.

The prevalent popular association reflects a tendency in the 19th century to annex the theory of art to aesthetics. This naturally led to the identification of art with one kind of art—the so-called “fine arts,” “*beaux arts*” or “*Schone Kunste*” (arts of the beautiful).

The contraction of meaning has gone so far that the word “art” sometimes signifies one group of the fine arts—painting and sculpture—as in the common phrase “literature, music, and the fine arts.”

This restricted usage has become so customary that we ordinarily refer to a museum of art or to an art exhibit in a manner which seems to assume that the word “art” is exclusively the name for something which can be hung on a wall or placed on a pedestal.

A moment’s thought will, of course, correct the assumption. We are not unfamiliar with the conception of medicine and teaching as arts. We are acquainted with such phrases as “the industrial arts” and “arts and crafts” in which the reference is to the production of useful things. Our discussions of liberal education should require us to consider the liberal arts which, however defined or enumerated, are supposed to constitute skills of mind. We recognize that “art” is the root of “artisan” as well as “artist.” We thus discern the presence of skill in even the lowest forms of productive labor. Seeing it also as the root of “artifice” and “artificial,” we realize that art is distinguished from and sometimes even opposed to nature.

The ancient and traditional meanings are all present in our daily vocabulary. In our thought the first connotation of “art” is fine art; in the thought of all previous eras the useful arts came first. As late as the end of the 18th century, Adam Smith follows the traditional usage which begins with Plato when, in referring to the production of a woolen coat, he says: “The shepherd, the sorter of the wool, the woolcomber or carder, the dyer, the scribbler, the spinner, the weaver, the fuller, the dresser, with many others, must all join their different *arts* in order to complete even this homely production.”

In the first great conversation on art—that presented in the Platonic dialogues—we find useful techniques and everyday skills typifying art, by reference to which all other skills are analyzed. Even when Socrates analyzes the art of the rhetorician, as in the *Gorgias*, he constantly turns to the productions of the cobbler and the weaver and to the procedures of the husbandman and the physician. If the liberal arts are praised as highest, because the

logician or rhetorician works in the medium of the *soul* rather than in *matter*, they are called arts “only in a manner of speaking” and by comparison with the fundamental arts which handle physical material.

The Promethean gift of fire to men, which raised them from a brutish existence, carried with it various techniques for mastering matter—the basic useful arts. Lucretius, writing in a line that goes from Homer through Thucydides and Plato to Bacon, Adam Smith, and Rousseau, attributes the progress of civilization and the difference between civilized and primitive society to the development of the arts and sciences. “Ships and tillage, walls, laws, arms, roads, dress, and all such like things, all the prizes, all the elegancies too of life without exception, poems, pictures, and the chiselling of fine-wrought statues, all these things practiced together with the acquired knowledge of the untiring mind taught men by slow degrees as they advanced on the way step by step.”

At the beginning of this progress Lucretius places man’s discovery of the arts of metalworking, domesticating animals, and cultivating the soil. “Metallurgy and agriculture,” says Rousseau, “were the two arts which produced this great revolution”—the advance from primitive to civilized life.

The fine arts and the speculative sciences come last, not first, in the progress of civilization.

The fine arts and the speculative sciences complete human life. They are not necessary—except perhaps for the good life. They are the dedication of human leisure and its best fruit. The leisure without which they neither could come into being nor prosper is found for man and fostered by the work of the useful arts. Aristotle tells us that is “why the mathematical arts were founded in Egypt; for there the priestly caste was allowed to be at leisure.”

THERE IS ANOTHER ambiguity in the reference of the word “art.” Sometimes we use it to name the effects produced by human workmanship. We elliptically refer to *works of art* as art. Sometimes we use it to signify the cause of the things produced by human work—that skill of mind which directs the hand in its manipulation of matter. Art is both in the artist and in the work of art—in the one as *cause*, in the other as the *effect*. What is effected is a certain ennoblement of matter, a transformation produced not merely by the hand of man, but by his thought or knowledge.

The more generic meaning of art seems to be that of art as cause rather than as effect. There are many spheres of art in which no tangible product results, as in navigation or military strategy. We might, of course, call a landfall or a victory a work of art, but we tend rather to speak of the art of the navigator or the general. So, too, in medicine and teaching, we look upon the health or knowledge which results from healing or teaching as natural. We do not find art in them, but rather in the skill of the healer or teacher who has helped to produce that result. Hence even in the case of the shoe or the statue, art seems to be primarily in the mind and work of the cobbler or sculptor and only derivatively in the objects produced.

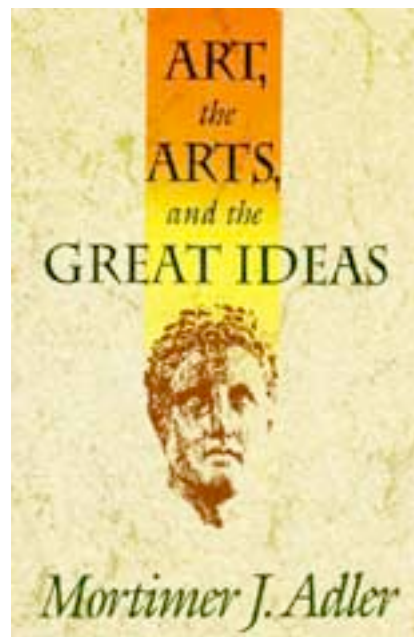
Aristotle, in defining art as a “capacity to make, involving a true course of reasoning,” identifies it with making as distinct from doing and knowing.

Though art, like science and moral action, belongs to the mind and involves experience and learning, imagination and thought, it is distinct from both in aiming at production, in being knowledge of *how* to make something or to obtain a desired effect. Science, on the other hand, is knowledge *that* something is the case, or that a thing has a certain nature. Knowledge is sometimes identified with science, to the exclusion of art or skill; but we depart from this narrow notion whenever we recognize that skill consists in *knowing how* to make something.

“Even in speculative matters,” writes Aquinas, “there is something by way of work; e.g., the making of a syllogism, or a fitting speech, or the work of counting or measuring. Hence whatever habits are ordained to suchlike works of the speculative reason, are, by a kind of comparison, called arts indeed, but *liberal* arts, in order to distinguish them from those arts which are ordained to works done by the body, which arts are, in a fashion, servile, inasmuch as the body is in servile subjection to the soul, and man as regards his soul is free. On the other hand, those sciences which are not ordained to any suchlike work, are called sciences simply, and not arts.”

The discussion of medicine in the great books throws light on the relation of art and science, in their origin as well as their development. Hippocrates writes of medicine as both an art and a science.

In his treatise on *Ancient Medicine*, he says, “It appears to me necessary to every physician to be skilled in nature, and strive to know—if he would wish to perform his duties—what man is in relation to the articles of food and drink, and to his other occupations, and what are the effects of each of them on every one. And it is not enough to know simply that cheese is a bad article of food, as disagreeing with whoever eats of it to satiety, but what sort of disturbance it creates, and wherefore, and with what principle in man it disagrees Whoever does not know what effect these things produce upon a man, cannot know the consequences which result from them, nor how to apply them.”



As a science, medicine involves knowledge of the causes of disease, the different kinds of diseases, and their characteristic courses. Without such knowledge, diagnosis, prognosis, and therapy would be a matter of guesswork—of *chance*, as Hippocrates says—or at best the application of rule-of-thumb in the light of past experience.

But the scientific knowledge does not by itself make a man a healer, a practitioner of medicine. The practice of medicine requires art in addition to science—art based on science, but going beyond science in formulating *general* rules for the guidance of practice in *particular* cases. The habit of proceeding according to rules derived from science distinguishes for Galen the artist in medicine from the mere empiric.

The antithesis of artist and empiric—suggesting the contrast between operation by tested rule and operation by trial and error—parallels the antithesis between scientist and man of opinion.

IT HAS SELDOM, if ever, been suggested that an art can be originally discovered or developed apart from some science of the subject matter with which the art deals. This does not mean that an individual cannot acquire the habit of an art without being taught the relevant scientific knowledge. An art can be learned by practice; skill can be formed by repeated acts. But the teacher of an art cannot direct the learning without setting rules for his pupils to follow; and if the truth or intelligibility of the rules is questioned, the answers will come from the science underlying the art.

According to Kant, “every art presupposes rules which are laid down as the foundation which first enables a product if it is to be called one of art, to be represented as possible.” In the case of “fine art,” which he distinguishes from other kinds of art as being the product of “genius,” Kant claims that it arises only from “a talent for producing that for which no definite rule can be given.” Yet he maintains that a “rule” is still at its basis and may be “gathered from the performance, i.e., from the product, which others may use to put their own talent to the test.”

Granting that there is no art without science, is the reverse true, and is science possible without art? The question has two meanings. First, are there arts peculiarly indispensable to the development of science? Second, does every science generate a correlative art and through it work productively?

Traditionally, the liberal arts have been considered indispensable to science. This has been held to be particularly true of logic. Because they were intended to serve as the instrument or *the art* for all the sciences, Aristotle’s logical treatises, which constitute the first systematic treatment of the subject, deserve the title *Organon* which they traditionally carry. Bacon’s *Novum Organum* was in one sense an effort to supply a new logic or art for science, and to institute a renovation of the sciences by the experimental method.

As an art, logic consists of rules for the conduct of the mind in the processes of inquiry, inference, definition, and demonstration, by which sciences are constructed. Scientific method is, in short, the art of getting scientific knowledge. In the experimental sciences,

there are auxiliary arts—arts controlling the instruments or apparatus employed in experimentation. The experiment itself is a work of art, combining many techniques and using many products of art: the water-clock, the inclined plane, and the pendulum of Galileo; the prisms, mirrors, and lenses of Newton.

The second question—whether all sciences have related arts and through them productive power—raises one of the great issues about the nature of scientific knowledge.

For Francis Bacon, and to some extent Descartes, art is the necessary consequence of science. At the beginning of the *Novum Organum*, Bacon declares that “knowledge and human power are synonymous since the ignorance of the cause frustrates the effect; for nature is only subdued by submission, and that which in contemplative philosophy corresponds with the cause, in practical science becomes the rule.” The distinction Bacon makes here between the speculative and practical parts of knowledge corresponds to the distinction between science and art, or as we sometimes say, “pure and applied science.” He opposes their divorce from one another. If science is the indispensable foundation of art and consists in a knowledge of causes, art in Bacon’s view is the whole fruit of science, for it applies that knowledge to the production of effects.

His theory of science and his new method for development are directed to the establishment of man’s “empire over creation” which “is founded on the arts and sciences alone.”

Just as the present state of the arts accounts for “the immense difference between men’s lives in the most polished countries of Europe, and in any wild and barbarous region of the new Indies,” so further advances in science promise the untold power of new inventions and techniques.

On Bacon’s view, not only the value, but even the validity, of scientific knowledge is to be measured by its productivity. A useless natural science—a science of nature which cannot be used to control nature—is unthinkable. With the exception of mathematics, every science has its appropriate magic or special productive power. Even metaphysics, in Bacon’s conception of it, has its “true natural magic, which is that great liberty and latitude of operation which dependeth upon the knowledge of forms.”

The opposite answer to the question about science and art is given by Plato, Aristotle, and others who distinguish between speculative and productive sciences. They differ from Bacon on the verbal level by using the word “practical” for those sciences which concern moral and political action rather than the production of effects. The sciences Bacon calls “practical” they call “productive,” but under either name these are the sciences of *making* rather than *doing*—sciences which belong in the sphere of art rather than prudence. But the significant difference lies in the evaluation of the purely speculative sciences which consist in knowledge for its own sake, divorced from art and morals, or from the utilities of production and the necessities of action.

In tracing the history of the sciences, Aristotle notes that those men who first found the useful arts were thought wise and superior. “But as more arts were invented, and some were directed to the necessities of life, others to recreation, the inventors of the latter were naturally always regarded as wiser than the inventors of the former, because their branches did not aim at utility. Hence, when all such inventions were already established, the sciences which do not aim at giving pleasure or at the necessities of life were discovered, and first in the places where men first began to have leisure . . . So that the man of experience is thought to be wiser than the possessors of any sense-perception whatever, the artist wiser than the man of experience, the master-worker than the mechanic, and the theoretical kinds of knowledge to be more of the nature of Wisdom than the productive.”


That the theoretic sciences are useless, in the sense of not providing men with the necessities or pleasures of life, is a mark of their superiority. They give what is better than such utility—the insight and understanding which constitute wisdom.

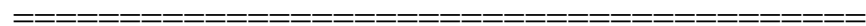
The Baconian reply condemns the conception that there can be knowledge which is merely contemplation of the truth. It announces the revolution which, for John Dewey, ushered in the modern world. The pragmatic theory of knowledge had its origin in a conception of science at every point fused with art.

THE ANCIENTS, trying to understand the natural phenomena of change and generation, found that the processes of artistic production provided them with an analytic model. Through understanding how he himself worked in making things, man might come to know how nature worked.

When a man makes a house or a statue, he transforms matter. Changes in shape and position occur. The plan or idea in the artist's mind comes, through his manipulation of matter, to be embodied and realized objectively. To the ancients a number of different causes or factors seemed to be involved in every artistic production—material to be worked on; the activity of the artist at work; the form in his mind which he sought to impose on the matter, thus transforming it; and the purpose which motivated his effort.

In the medical tradition from Aristotle through Galen to Harvey, there is constant emphasis upon the artistic activity of nature. Galen continually argues against those who do not conceive Nature as an artist. Harvey consciously compares the activity of nature in biological generation to that of an artist. “Like a potter she first divides her material, and then indicates the head and trunk and extremities; like a painter, she first sketches the parts in outline, and then fills them in with colours; or like the ship-builder, who first lays down his keel by way of foundation, and upon this raises the ribs and roof or deck: even as he builds his vessel does nature fashion the trunk of the body and add the extremities.”

Of all natural changes, the one most closely resembling artistic production appears to be generation, especially the production of living things by living things. In both cases, a new individual seems to come into being. But upon further examination, artistic production and natural generation reveal significant differences—differences which divide nature from art. 



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