I

Of all the works of Aristotle, the *Rhetoric* and the *Poetics* have been most directly and most persistently influential on modern thought. Certain of his logical doctrines, or at least the devices and principles formulated in his logic, have had a longer continuous history of commentary and discussion; and the spectacular revolution worked in philosophic thought and expression during the thirteenth century under the influence of his newly translated works lent verisimilitude to the later criticism that the Middle Ages had been subjugated to the physics and metaphysics, the ethics and politics of Aristotle. Yet his theories and technical terms contributed as much to the revolt against scholasticism as they did to medieval "Aristotelianism," for the doctrines developed in commentaries on Aristotle and the tenets attributed to him in criticism or defense, were at many points distant from the genius of the Aristotelian philosophy.

The revolt against Aristotelianism was accomplished in each field by use of Aristotelian doctrines, often applied as heterogeneously as the theories and terms they replaced. Aristotle was at meticulous pains to distinguish his use of "forms" from the Platonic and to trace the errors which result in all fields of knowledge from the conception that the forms are "separated." Hellenistic commentators ignored these refinements and treated the Aristotelian philosophy as a Platonism; Cicero accepted this interpretation without comment and made it available to the Western Latin tradition; Augustine gave Christian theology a Platonic formulation into which the interpretation of Aristotle was assimilated; many of the Greek commentators on the Aristotelian works were Neo-Platonic in their philosophical orientation. Aristotle's works were unknown in the West, except for a portion of the *Organon* fixed by Boethius in a context strongly influenced by Porphyry, Cicero, and Themistius. The translation of Aristotle's works, beginning in the twelfth century, set problems of inter-
pretation and speculation which were worked out in a long series of debates, centering on logic in the twelfth century, on metaphysics and the physical sciences, including biology, in the thirteenth century, on ethics and politics in the fourteenth century, until the Rhetoric and the Poetics eventually supplied in the Renaissance not only materials and subject for a doctrinal battle as bitter and as widespread as any medieval dispute, but also instruments by which to reform suspected doctrines, branded as Aristotelian, in all the previous subjects of inquiry.

The influence of Aristotle is difficult to trace in any of the fields of philosophy in which his inspiration is acknowledged or opposed. The enthusiastic reformulation of what he thought and the construction of what he should have said in exposition of what he thought frequently carry the defense of his doctrines far from the evidence of his text and even into contradiction of his statements, while his distinctions and analyses sometimes continue influential, though unrecognized and unsuspected, in regions and inquiries other than those in which he first made them. Even those medieval philosophers who professed the greatest admiration for Aristotle were eloquent in declaring their recognition of his human susceptibility to error. Since they professed to follow his doctrines only when they were convinced of their truth and to modify them freely when they found them erroneous or incomplete, and since the scope of his discovered "errors" tended to increase during centuries following the translation of his works into Latin, the numerous commentaries and questions on Aristotle's scientific and logical treatises, on his Metaphysics, Politics and Ethics became more and more what they had been to some extent from the first, vehicles by which to express philosophic differences rather than exegetical and philological exercises.

All doctrines and attitudes, therefore, even those which Aristotle had attacked and, what were in many instances the same, those revised or renewed philosophic methods which were set in operation against his position, were expressed in his terminology. The basic problems disputed and the fundamental emphases were often points on which Aristotle had been silent or brief, and with the progress of discussion and attack, the doctrines which passed for Aristotelian grew increasingly difficult to find in the works of Aristotle. The logic, which had been made the subject during the Middle Ages of metaphysical dispute concerning the status of universals, was in the sixteenth century to be criticized as concerned with purely verbal manipulations unsuited to the nature of things and unrelated to the processes of thought, and the physics, which had been a source of theory and suggestion concerning the whole scope of the physical world was at last to be branded a remote exploration for occult qualities; in this eclipse of logic and scientific method, the devices of rhetoric were used to increase the cogency of proof, to broaden the scope of inquiry, and to institute a method of discovery. Cicero had pointed out that Aristotle's logic treated both discovery and proof, unlike the Stoic logic which was confined to proof. Medieval commentators on the logic, once the Topics was available in translation, recognized that the method of discovery is dialectic. The increasing influence of Plato and Cicero in the transition to the Renaissance assimilated the Aristotelian method of dialectic to the Platonic dialectic of discovery and the Gicronian rhetoric of discovery. The merging of logic and dialectic and of dialectic and rhetoric produced from historical confusions influential insights in Rudolph Agricola's De Inventione Dialectica, in Peter Ramus' works on logic, dialectic, and rhetoric, and in Francis Bacon's use of "proper places" on the analogy of the "common places" of rhetoric to develop the inductive method of the Nouum Organum.

When the use of logic and dialectic for the interpretation of Scripture and the systematization of theological doctrine was thought inadequate and inappropriate to the document and the truth it expressed, the Old and New Testaments were treated as works of art; and Moses and Paul emerged as poets. Peter Aballard had argued that the method of rhetoric was essential for the proper interpretation of the Bible, and the enlarged method of dialectic can be detected in the use of "topics" in their dialectical rather than rhetorical sense, and in a manner influenced by the Platonic dialectic, in works like Melchior Cano's De Loci Theologicis and Philip Melancthon's Loci Communis. Pico della Miranda based his interpretation of Genesis in the Heptaplus on the understanding of Moses as the poet, as the "idea" of the writer, the exemplar of the prophet, and Erasmus invited John Colet to study Moses and Isaiah as he had studied Paul. The "poetic" interpretation of Scripture, however, used a poetic method borrowed from rhetoric, and the topics had been applied not only to science, theology, law, and political science, but to poetry and literary criticism in works like Andrea Giglio da Fabriano's Topica Poetica. Metaphysics was first adulterated with logic and devoted to the discussion of universals and categories, and later analogized to politics, since rational principles and natural laws govern the universe much as an intelligent ruler governs his subjects; when the resultant formulations of problems seemed lost in subtleties that exceeded human powers and ingenuity, questions of being and knowing were treated with a cautious skepticism interrupted by equally cautious analogies to acting, or making, or ruling, and politics and ethics in turn were made realistic and practical by use of the relativistic devices of rhetorical persuasion to manipulate means without responsibility concerning ends. Mario Nizolus, in his De Veris Principiis et Vera Ratione Philosophandi contra Pseudosophos, finds the truths by which to combat pseudosophers in the principles of grammar and rhetoric, and the politics of Machiavelli and Hobbes is developed by a method which has been influenced by the devices of rhetoric.

The declining fortunes of Aristotle's doctrines coincided with the period of greatest concern to translate his writings precisely, to paraphrase his works, and to determine by philosophical inquiry the meaning of what he had said. Even the critics of Aristotle are inclined to soften their strivings of his doctrines when he treats problems that parallel their own interests. Rhetoric, in the terms which Aristotle had used, but in an interpretation that owed much to Cicero
and Quintilian, became in the Renaissance a discipline applicable to literature, to thought, and to life. It supplied the means by which to interpret poets, the criteria to regulate demonstration, and the technique for scientific inquiry and discovery, political control, and practical application; even as late as the seventeenth century Hobbes, who had little favorable to say about Aristotle's philosophy, thought his Rhetoric worth the labor of paraphrase, while he found use in his political philosophy, as Machiavelli had before him, for the distinctions of forensic oratory. The Poetics of Aristotle, bolstered in like fashion by reminiscences of Cicero and Horace, was erected into a standard of taste, and even of morality, in which the artist competed with the statesman and philosopher. Rhetoric, which for Aristotle had a limited function, inadequate for the purposes of scientific demonstration and inappropiate as a substitute for politics, was made again to undertake the diversified tasks Roman rhetoricians had set it of proving, instructing, and pleasing, while poetic, which Aristotle seems to have conceived as an inductive study of works of art, was made to yield rules to guide the making of art. The two disciplines tended to merge, moreover, and the familiar analogies, drawn from one or the other—what operated to the discredit or distortion of other portions of the Aristotelian philosophy—served to increase the reputation of their use and value, broadening both until the rules of rhetoric applied to all knowledge and poetic embraced all the works of nature and of man. The grounds in the works of Aristotle which permitted these analogies, at once seminal in the reputation and interpretation of Aristotle, isolate for later students the minimum requirements for the understanding of Aristotle's work and suggest, in general, disquieting lessons concerning the influence of philosophic speculations.

Even the superficial differences between Aristotle's development of rhetoric and poetic and his conception of the other sciences which constitute his philosophy indicate both distinctions which made them independent and analogies which explain their numerous reductions to each other and to other sciences without the necessity of choosing between the alternatives of convicting Aristotle of simple inconsistencies or making the influence of his doctrine a blank mystery. Aristotle reports that reflection on philosophic method and the application of such considerations of method to the treatment of moral questions were no older than the inquiries of Socrates, but he makes no mention of his historical interests in politics and to have summarized the characteristics of rhetorical systems. Since that collection doubtless served, like the outlines of the doctrines of his predecessors which are prefaced to so many of his works, as a preliminary sketch of the subject and as indication of problems and plausible speculations, and since he often comments on and occasionally commends scientific doctrines which were not in his opinion developed according to a scientific theory, his effort in collecting and schematizing the "arts" of rhetoric does not stand in contradiction to his contention that none of his predecessors treated rhetoric as an art.

Aristotle's historical interests in poetry seem to have followed the analogy of his historical interests in politics and to have been concerned rather more with the history of the subject of inquiry than with previous theories, for his lost work On Poetics was probably a fuller account of the history of literature similar to that adumbrated in the early chapters of the Poetics. Aristotle had not grown forgetful of Socrates and Plato, or of the Sophists against whom Socrates so frequently developed arguments bearing on art and rhetoric and their relation to virtue and knowledge, for the "Socratic Dialogue" is instanced with the mime as an art-form in the Poetics, and both Socrates and Plato are quoted for examples and precepts of rhetoric. His silence concerning the treatment of rhetoric and poetry in Plato's dialogues, notwithstanding his tendency to criticize Plato on all other subjects, is to be taken rather as a sign that he thought his own departure from previous methods to have been radical to the point of making the example of his predecessors irrelevant to the problems of poetic and rhetoric as he conceived them. According to his organization of philosophy he was able to find many early examples of metaphysical and physical doctrines; speculation on politics and ethics did not, prior to the time of Socrates, take such form as to permit extensive citation or require systematic refutation; and the contemporary interest in philosophic method had yielded only a single relatively undifferentiated dialectical method. In his view, therefore, his own logic had first differentiated scientific demonstration from dialectic and, for arguments and persuasions, thereby missing the essentials of the art; and one might have the impression from his Poetics that no previous philosopher had treated the nature and influence of poetry. We know that among his works, now lost, was a Collection of Handbooks, in which he seems to have traced the history of rhetoric and to have summarized the characteristics of rhetorical systems.


2. Rhetoric i. 1344b 11: "Now the framers of the current treatises on rhetoric [τοὺς ἐρωτευόμενους ἀριστοτέλους] have constructed but a small part of that art. The modes of persuasion [τοῖς ἐρωτεύσεσθαι] are the only properly technical parts of the art; everything else is merely accessory. These writers, however, say nothing about euthymers, which are the body of persuasion, but deal for the most part with things which are outside the subject."
that very reason, had made possible for the first time a consideration of the separate methods and functions of art and rhetoric and their relation to the methods of history, sophistic and dialectic.

Socrates treats rhetoric by arguing, against the pretensions of orators in the Phaedrus, that the good orator must also be a dialectician and, against the sophists in the Gorgias, that rhetoric is a sham art, or rather no art, but experience and use which are substituted for justice. He frequently employs the example of artists and artisans in the arguments Plato records, usually running through a series of analogies such as would connect the poet in turn and in varying respects with the physician, the carpenter, the cobbler, and the shepherd, contrasting art with the irrational, the incautious, the habitual, and the empirical, but requiring no fixed differences among the arts, nor even between the arts and the sciences. The judgment of poetry attributed to Socrates in the Republic, like the later Platonic judgment expressed in the Laws (if indeed such differentiation between the two positions is necessary), is based on consideration of educational, practical, and rhetorical effects, and it leads to moral disapproval and political censorship. Like the orator, the poet finds himself in competition with the dialectician and the legislator, and no method or accomplishment is disclosed in Plato's analyses of rhetoric or poetry that would seem to Aristotle to involve problems beyond those of dialectic and morals or to require new acknowledgments of Plato's originality or additional criticisms of his errors. Among the independent sciences instituted by Aristotle's philosophic method, on the other hand, rhetorical arguments could be considered as devices of persuasion apart from consideration of truth or falsity of conclusions, accurate or candid presentation of the character and predilections of the speaker, or preferable ends or desires of the auditor; and poetry could be considered in terms of the structure of the poem apart from its tendency to stimulate moral or immoral conduct or to produce pleasure or other passions. Such separate consideration of things or disciplines depends on a philosophic scheme in which related questions can be treated according to their proper principles in their appropriate sciences. As applied to the arts, the accomplishment of Aristotle's philosophic method was the separation of problems involved in the mode of existence of an object produced or of a productive power (which might properly be treated in physics and metaphysics) as well as problems involved in the effects of artificial objects or artistic efforts (as treated in psychology, morals, and politics) or in doctrinal cogency and emotional persuasiveness (as treated in logic and rhetoric) from problems which bear on the traits of an artistic construction consequent simply on its being a work of art. As applied to rhetorical persuasion, the same method permits the recognition that rhetoric is a counterpart, or offshoot, or subdivision of dialectic; that it borrows from sophistic; that it is derivative from ethics; and that it is a sham substitute for politics when it is not made a proper part of politics; and at the same time it permits the examination of the peculiar devices of persuasion apart from consideration of those relations and analogies.

II

To say that Aristotle thought the arts in general, as well as particular arts like rhetoric or poetry, medicine or strategy, to be independent kinds of activity susceptible of independent analysis and to involve kinds of knowledge independent of other arts and of other sciences, theoretic or practical, involves the statement of what might at first seem contradictory requirements. Such separate analysis and statement of the arts is possible only by explicit recognition of the complex interrelations of arts, and actions, and sciences, such that two or more arts may use independent techniques on identical materials to different ends or on different materials to comparable ends, or such that one art may be subordinate to the purposes of another (as military strategy is to statecraft) without compromise or adulteration of its proper purposes and criteria. Even more, art is to be contrasted to science only if the arts are recognized to be in a sense sciences and the sciences to be in a sense arts; practical sciences can be distinguished from productive sciences, and arts can be considered in terms of their functions and their products only if provision is made in another analysis for the fact that art has moral and political consequences and that political processes and moral actions are in their exercise themselves arts; or finally the opposition of art to nature envisages an art which is natural in that it proceeds from natural powers and operates on natural materials as well as a nature whose processes are comparable with those of art and whose products may be supplemented by art.

The distinctions depend on an overlapping classification, such as Aristotle frequently uses, in which the same situation, process, or entity is analyzed successively in terms of different applications of the causes and, in the respects isolated by successive analyses, is without ambiguity or contradiction defined differently and even subject to analysis in different sciences, as, for example, the passions are diversely conceived and used in psychology, ethics, and rhetoric. Aristotle's treatment of the arts is set in four progressively narrowing contexts: (1) they are particular instances of productive or poetic powers (δύναμεις ποιητικές) and share characteristics which are coextensive with nature, yet are contrasted to nature as a principle, (2) they are instances of the rational productive powers which are the sources of all human actions, practical and productive, and which as such are contrasted to irrational natural processes, and (3) they are conceived as restricted to those rational productive powers which result in some artificial product apart from the activity itself and are contrasted with moral and political activities. In most arts a further step is then possible in which (4) the particular art is analyzed in the specific subject matter and objects proper to it. The delimitation of the arts, in other words, like the definition of the virtues does not proceed by strict scientific definition through genus and

7. Phaedrus 265 D ff., Gorgias 463 A ff., 501 A.
proper differentia, but employs all four causes in progressive delimitation, and an art may be considered for various purposes in its broader or narrower significations. The four conceptions of art (and the arts are still considered today in what might be viewed as the remnants of these ways) in the order of their increasing particularity make use in turn, (1) of the efficient cause, in the sense that art is conceived as a "power" directed to ends comparable to and yet distinguishable from natural powers and to that extent analyzable in common with them by means of their ends, (2) of the formal cause, in the sense that art is an "actuality" of the mind comparable to and yet distinguishable from other psychic habits and powers and to that extent analyzable in common with them by means of the process of their acquisition or the potentiality and matter actualized in them, (3) of the final cause, in the sense that art is a preconceived purpose and so comparable to and distinguishable from other stimulations to action which partake of reason and to that extent analyzable in common with them by the means they employ and the ends they achieve, and (4) of the material cause, in the sense that each art is a class of objects, comparable to and distinguishable from each other, and so analyzable in common with other arts by the forms suited to the materials in which they are embodied in the arts. Some indication of the significance of this range of treatments to which art is susceptible may be found in the fact that of the two arts concerning which independent treatises of Aristotle have survived, one, i.e., rhetoric, is defined in the most general of the terms applied to art as a "power," while the other, i.e., poetic, is defined in the most particular of those terms as a composite whole (τὰ σύνολαν). 8

1.

In its broadest context, as related to natural things and as an efficient cause productive of change, art is at once (like science and virtue, or in general like any action which participates in reason, and, at the other extreme, like chance and fortune or in general like any cause whose indefiniteness and multiplicity removes it from the scope of reason) a natural process and at the same time possesses of characteristics opposed to nature and to what naturally happens. The theoretic sciences treat of nature and are themselves constructions due to natural processes and tendencies; the end of science is knowledge of the universal, and yet knowledge and thought are themselves activities of the mind and so subject to scientific explanation. 9 Chance and fortune are irrational and indeterminate, yet they must be reckoned among the causes and as such be treated in the physical sciences. 10 Art is a principle of change like nature, and what is done by art might be accomplished by chance; at the same time art is a kind of knowledge concerned, like science, with the universals and causes, and science insofar as it engages in the construction of demonstrations and theories is a kind of art.

The relation between science and art is not simple but reflects the complexity of identities and differences found in nature and action or ultimately in the metaphysical distinction between actuality and power on which both relations are based. They are not univocal categories applied in the assemblage of genera of things; rather the distinction recurs anew and in numerous applications in the examination of all natural powers, reaching its greatest complexity in the two actualities, corresponding to the possession and the exercise of a power, necessary for the analysis of psychological functions. 11 "Power" in the narrow sense of "power to move or be moved" is grounded in the broader sense of "power to be," 12 and the power of a thing is therefore relative on the one hand to the actuality or essence of a thing and on the other hand to its actions or motions. Scientific inquiry concerning natural things and natural processes takes account of power either as the sign of a nature or as the cause of an action or of effects external to the nature. On the one hand, physical science is an inquiry into the natures of things: natures, however, are defined by means of their parts or powers, and their powers in turn are known by means of their functions or objects. In this fashion, scientific inquiry into the nature and operations of the soul begins with the appropriate objects of psychic activities, the activities of the soul are determined and defined from their objects, the powers from their activities, until finally the definition or essence of the soul can be constructed by means of its powers (or, as Aristotle also designates them, its "parts"); thereafter inquiry proceeds to the examination of the powers and their activities. The term "power" in this sense is often conjoined with or even used as a synonym of such terms as "form" (μορφή), "species" (εἴδος), "definition" 

8. Rhetoric i. 2. 1353a26; Poetics 1. 1447a16. Differentiation of these levels of analysis of art, which, it is hoped, are shown in the text which follows has been clearly formulated by Aristotle, has the further advantage of at once removing many of the ambiguities and simple confusions laid at the door of Aristotle and disclosing the reasons why they seemed to his interpreters to be confusions. Cf. E. M. Cope, An Introduction to Aristotle’s Rhetoric, pp. 22–23: “When it is said, as both Plato and Aristotle do say, that art implies a knowledge of causes, which as Aristotle tells us again and again is the characteristic of science or ἕποιησις properly understood, it is plain that the distinction between ἕποιησις and ἐπιστήμη is lost sight of, a confusion, which as I have already said is by no means uncommon with ancient Greek philosophers”; cf. also p. 33.

9. Metaphysics xii. 9. 1074b33: “The answer is that in some cases the knowledge is the object. In the productive sciences [if we disregard the matter] the substance or essence is the object; but in the theoretic sciences the formula [ἡγομένη] or the act of thinking is the object”; cf. ibid. 7. 1072a20; and De Anima iii. 4. 429a5 and 430a2.

10. Physics ii. 3. 197b4: "It is necessary then that the causes of what comes to pass by fortune be indefinite. . . . To say that fortune is a kind contrary to formula [παράλογον] is correct, for ‘formula’ [ἡγομένη] applies to things that are always thus or for the most part, whereas fortune applies to a third kind of occurrence. Hence since such causes are indefinite, fortune too is indefinite." Cf. ibid. 6. 190b5.


12. Metaphysics ix. 6. 1049b25 ff; 1. 1045a32.
or "reason" (λόγος), or "nature" (ἀρχή). On the other hand, the physical sciences are concerned with the interrelations of things and the exercise by one object of actions which have effects in other objects: the power of a thing is considered, then, not in terms of the nature of which it is a power but in terms of the change which its action causes other things to suffer, and so considered powers are contrasted to natures, since nature is a principle of change internal to the thing, while power is an external principle of change. The arts are instances of such powers.

It is possible, then, to reason from power either back to the nature of which the power is a part and a sign (and such inference would yield information relevant to its definition or essence) or outward to the action in which the power is actualized in external effects (and such inference would yield information concerning the relation between "agent" and "patient," between "making" and "suffering"). Since power involves something which is acted on as well as something which acts, and since action and passion, or making and suffering, usually occur respectively in different things or at least in distinguishable aspects of the same thing, the power of making (ποιεῖν) and suffering (πάθος), although one and single in itself, must be divided into two kinds, a "poetic power" (δύναμις ποιητική) in the agent and a "pathetic power" or power of suffering (δύναμις παθητική) in the patient; and indeed that distinction be-

13. Cf. De Anima i. 1. 1042a9: "Further if there are not many souls, but many parts of one soul, which ought we to investigate first, the whole soul or its parts? It is also difficult to determine which of these parts are naturally distinct from one another, and whether the parts [τὰ μόρφα] or their functions [τὰ ἔργα] should be investigated first, as, e.g. the process of thinking or the mind that thinks, the process of sensation or the sensitive power, and so on. If the investigation of the functions precedes that of the parts, the further question arises, whether we ought not first to investigate the correlative objects, as, e.g. the sensible object before the power of sense and the intelligible object before the power of the intellect." Cf. the more positive statement of the sequence of inquiry in ibid. ii. 4. 413b4. The use of "power" for or with terms signifying "form" may be illustrated by typical cases: De Generatione et Corruptione i. 5. 322b28: "This, the form [τὸ φύσις] without matter, is a kind of power, such as a duct, in matter"; Politics vii. 1. 1323b33: "Thus the courage, justice, and wisdom of a state have the same power and form [μορφή] as the qualities which give the individual who possesses them the name just, wise, or temperate"; De Anima ii. 12. 424b26: "The sense organ would be an extended magnitude, but neither being sensitive nor sense is a magnitude; they are rather a certain ratio in [μορφή] and the power of the magnitude"; De Generatione Animalium ii. 1. 731a9: "That the male and the female are the principles of generation has been previously stated, as also what is their power and essence [ό λόγος τῆς οὐσίας]; also ibid. 6. 738b22; De Sensum 3. 439b21: "But the 'transcendent,' as we call it, is not something peculiar to air, or water, or any other of the bodies usually called transcendent, but is a common nature [φύσις] and power"; Politics i. 4. 1254a13: "Hence we see what is the nature [φύσις] and power of a slave."

14. Metaphysics ix. 1. 1046a9: "But all powers that conform to the same type are principles, and are called powers in reference to one primary kind of power, which is the principle of change: in another word, thing or in the thing itself παθικά other." De Causa iii. 2. 301b17: "... 'nature' means a principle of movement in the subject itself, while 'power' is a principle of movement in something other than it or in itself παθικά other...." 15. Metaphysics v. 12. 1019a15; ix. 2. 1046b2. 16. Metaphysics ix. 1. 1046a19; v. 13. 1021b14.

tween making and suffering is important enough to be constituted two of the categories in Aristotle’s enumeration of ten. In their first occurrences and primary meanings, therefore, "poetic" or productive (ποιητική) and "making" (ποιεῖν) apply to all processes of becoming which originate in an external principle as contrasted to "natural" processes which originate in principles internal to the thing changed. The contrast does not mean that "making" and "suffering" are unnatural processes (although they are often contrary to nature), but rather that, notwithstanding this contrast between making and nature, a poetic or productive power is itself a natural power, differing from nature not in independent fact but in manner and context of analysis and definition. All things that come into being, natures as well as artificial things, are "made," in this broadest sense, and the term extends to other changes as well, to all natural actions of one thing on another, physical, biological, psychological, and even intellectual. Things that are "made," therefore, include not only the "artificial things" made by the fine and practical arts and the natural substances made in physical and biological generation, but sense perceptions, phantasms, sensation itself, pleasure, madness, difficulties and problems, turns in the scale of life, the plots and arguments of tragedies, science, definition, syllogism, paralogism, demonstration, and all of the innumerable things subject to the influence of things other than themselves.

Power as efficient cause and productive principle of motion supplies the broad genus which is narrowed to "art" by differentiating two kinds of "powers" and "makings," the rational and the irrational. The distinction between internal and external principles of change is made the differentiation between nature and art, in its broadest sense. The arts are productive (ποιητική) pow-

17. Categories 4. 1272; Topics i. 9. 103b23.
18. Cf. De Sensa 2. 440a17; Metaphysics xi. 6. 1063b4; De Partibus Animalium ii. 3. 665a6; Nicomachean Ethics vii. 6. 1147b24; 5. 1147b17; v. 14. 1137b11; l. 11. 1109b24; Poetics 5. 1449b8; Rhetoric i. 2. 1358b24; Topics ii. 10. 1053b10; Prior Analytics i. 8. 301b10; 15. 34b15; 25. 42a22; 27. 43a24; 28. 44a26; 6. 29a23; Topics v. 2. 130b7; Poetics 16. 1455b16. Cf. Politics i. 9. 1258a6: "For, as their enjoyment is in excess, they seek an art of making (ποιητική) the excess of enjoyment; and if they are not able to supply their pleasures by the art of getting wealth, they try to do it through some other cause, using in turn every power (φύσις) in a manner not in accordance with nature." Rhetoric i. 6. 1362b31: "Things are productive (ποιητική) of other things in three ways: first, as being healthy produces health; second, as food produces health; and third, as exercise does—i.e. it produces [φύσις] health usually."

19. De Partibus Animalium i. 1. 641a10: "Moreover it is impossible that any abstraction can be a subject of natural science, since nature makes [ποιεῖ] all things for something, for as art is in the case of artificial things, so in the case of things themselves there is manifestly some other principle and some cause of this sort, derived like the hot and the cold from the environing universe." Metaphysics xi. 3. 1070b7: "Now art is a principle of movement in something other than the thing moved, nature is a principle in the thing itself (for man begets man), and the other causes are privations of these two." ibid. vii. 8. 1035b5: "It is clear then that the form also, or whatever we ought to call the shape of the sensible thing, is not generated, nor does generation relate to it, that is, the essence is not generated, for it is this which is generated in something else by art or by nature or power. But we make [ποιεῖ] a bronze sphere to be. For we make it out of bronze and the sphere; we make the form in this particular matter, and this bronze sphere is." De Generatione An-
ers which are rational or sciences which are productive (ἐπιστήμην ποιητικα); and art and nature differ, therefore, in the status of the form or reason which enters into their operation: in art it preexists in the mind of the artisan, in nature it is in the constitution alike of that which generates and that which is generated. Nature and natural powers differ from art in the fashion in which form enters into change, but since nature and art are principles of change, this formal difference constitutes a difference between them both as efficient causes or principles of change and as ends or final causes to which change is directed, for irrational powers can accomplish only a single end, while rational powers may be employed to effect either of contrary ends. Since the distinction between art and nature is a distinction between rational and irrational, the same distinction is found between mind and nature and even between the powers of the soul itself. The soul, however, is itself a nature, and its powers should therefore be treated in terms of their functions as well as in terms of their susceptibility to reason. In the De Anima, inquiry into the nature and functions of the soul is pursued as part of physical science and the effort is expressly to arrive at "physical definitions"; two powers (δύναμεις) are distinguished according to their characteristic work or function (Εργα): judgment which is the work of thought and sense, and local motion which is originated by practical thought and appetite. Considered in terms of principles of change and their ends the soul is constituted of natural powers or parts distinguishable from other powers by their ends. The powers of the soul, on the other hand, may be considered as directed to activity in accordance with virtue and rationality, and the classification of powers must then be reformulated, for morality and wisdom, though based on natural powers, are determined, not by nature, but by habit or the influence of reason. In the Nicomachean Ethics, therefore, the "parts," or "powers," or "natures" of the soul are distinguished into two kinds, one possessed of reason (τὸ λόγου ἔργον), the other irrational (ἄλογον), and both in turn are distinguished by the same criteria into two kinds: the irrational part into one which is purely irrational and one which, though irrational, is responsive to reason, and the rational part into one concerned with variable things and with the direction of the irrational part and one devoted to the contemplation of invariable things. Art and nature are, as a consequence, associated in many likenesses, notwithstanding the differences in the way in which in the one form operates as knowledge from the operation of form in the other as substance or part of substance, and they are set in contrast on all their points of similarity to chance and fortune as causes of change. Art and nature are both adaptations of means to ends in accordance with reason or formule (λόγος); they approximate comparable or identical ends by identical processes; art therefore imitates nature and may supplement or complete natural processes when they are imperfect; and finally the ends of both involve consideration not merely of powers to be actualized but also of goods and beauty in a fashion that brings to mind the close relation which Kant, more strikingly than most philosophers, discerned between the teleology of natural processes and the construction and perception of things of beauty.

23. Nicomachean Ethics i. 13. 1102a27 and 1102a11 ff.; vi. 1. 1139b3. The three terms, "part," "power," and "nature" are used as synonyms in these pages (1102a4, 5, and 13), and it should be observed that the discussion is in terms of the virtues (ἀρετή) or actuality (ἐστιν) of these powers, whereas in the De Anima the similar distinctions are made in terms of their ends (cf. iii. 10. 439d14).
24. Metaphysics vii. 7. 1032a12: "Of things that come to be some come to be by nature, some by art, some by chance." De Partibus Animalium i. 1. 640a25: "For man is generated from man, and so the generation of the offspring is determined by the characteristics of the parent, as is similarly the case in things which seem to come about by chance and as is also in the case of the products of art. For some things brought about by chance are the same as those produced by art, as, e.g., health. However, a productive cause (τὸ ποιοῦσα) similar to its product prevail in the case of art products, such a productive cause as the art of the stonemason, for it does not produce by chance. Art indeed is the reason (λόγος) of the work (Εργον) as it is without the matter, and the situation is much the same with things which take place by fortune, for fortune produces as art does." Thought often takes the place of art in association with nature in opposition to chance and fortune. Thus, Physics ii. 5. 190b21: "Events that are for the sake of something include whatever may be done as a result of thought and of nature"; ibid. 6. 198b5: "And since chance and fortune are causes of results such as might originate from mind or nature as cause, thought in fact they are brought about by some accidental cause, and since nothing accidental is prior to what is per se, it is clear that no accidental cause can be prior to a cause per se. Chance and fortune, therefore, are posterior to mind and nature.”
25. The causes, and especially the final cause, are seldom far to seek in Aristotle's analogies of art to nature. Thus, Physics ii. 8. 199b26: "It is absurd to suppose that there is no purpose because we do not observe the mover deliberating. Art, in fact, does not deliberate, and if the ship-building art were in the wood, it would produce the same results by nature. If, therefore, purpose is present in art, it is present also in nature. The best illustration is the doctor doctoring himself: nature is like that." De Partibus Animalium i. 1. 639b14: "That cause seems to be first which we call final, for it is the reason (λόγος), and the reason is the principle alike in works of art and in works of nature. Now in works of nature the final cause and the beautiful (τὸ καλόν) are still more dominant than in works of art. . . . As with these productions of art, so also with the productions of nature. Since art is a rational power, these points of contrast between art and nature are complemented by comparisons of nature and thought. Cf. Metaphysics xi. 8. 1065b26: "The final cause is found in things that happen by nature or as a result of thought"; De Caelo ii. 9. 291b24: "It is as though nature had foreseen the result, that if the motion (τοις των στασι) were other than it is,
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Art in this broad sense, as productive or "poetic," is comparable with science in much the same fashion as it is compared with nature, for it is a kind of science, yet distinct from theoretic science. Moreover, as the differentiation of the form of art from that of nature requires consideration of the efficient and final cause, so the formal comparison of art and science involves not only the efficient and final causes of art and science as forms of knowledge but their subject matter or material cause as well. Art is midway between experience and science: like science it is concerned with the universal, but unlike science it is knowledge of becoming rather than of being; it is directed to actions and productions and therefore like experience treats of individuals, although its speculation is of universals, for the artist, unlike the man of experience, knows not only what is the case, but why and the case. 26 Notwithstanding their

nothing in our terrestrial region could be the same." De Anima ii. 4. 415'15: "And it is clear that the soul is the cause in the sense of the final cause. For just as mind acts [noumen] for the sake of something, so in the same way does nature, and this is its end." Specific analogies of nature to art or of art to nature and specifications of the operations of one by means of the other are frequent in the scientific writings of Aristotle: cf. Physics ii. 2. 194'21 ff.; Meteorology iv. 12. 390'13; De Partsula Animalium ii. 9. 654'29; De Generatione Animalium ii. 6. 749'23; iii. 11. 762'16; iv. 6. 775'29; Politics vii. 14. 1339'21. This comparison is indicated frequently by the statement that nature operates like an intelligent artisan consistently with reason (tou logou) in that nature chooses, or that nature itself is the end; cf. Meteorology ii. 2. 379'25; De Partsula Animalium iii. 2. 663'92; 4. 665'20; x. 10. 686'8; De Generatione Animalium i. 23. 731'24; ii. 4. 740'28; v. 2. 781'22. As final cause nature is best; cf. Politics i. 2. 1252'30: "And therefore since the first communities are natural, so also is every state, for it is in the end of those communities, and the nature of a thing is its end. For what each thing is when fully developed, we call its nature, whether it be a man, a horse, or a family. Besides the final cause and end of a thing is best, and self-sufficiency is the end and best." For much the same reason nature is beautiful, as is apparent in the quotations above; cf. De Partsula Animalium i. 6. 654'16—16, esp. the latter. Nature is the principle of art and science, of art if it is concerning becoming, of science if it is concerning being. "Metaphysics i. 1. 909'28: "And from memory production is produced in men; for many memories of the same thing produce the power of a single experience. And experience seems to be almost like science and art, but science and art come men through experience; for 'experience made art,' as Polus says, and rightly, 'but inexperience luck.' And art arises when from many notions gained from experience one universal judgment concerning like things is produced... For purposes of action experience does not seem to differ from art, and we even see men of experience succeeding more than those who have the rational principle (logou) without experience. The reason is that experience is knowledge of individuals, art of universals, and actions and generations are all concerned with individuals... Yet we think that knowledge and understanding belong to art rather than experience, and we suppose artists to be wiser than men of experience, since wisdom in all cases depends rather on knowledge. But this is the case because differences in both respects, the arts and the sciences are thus associated in their material causes (since they treat universals derived from experience) and their final causes (since all inquiries, arts, and sciences are directed to an end and a good), but in addition they are both accounted for by a single efficient cause, instruction and the use of pre-existent knowledge. 27 In this first broad sense the "arts" include any inquiry into any subject, for the scientist is to be classified with the artist as productive of his science by discovery or instruction, notwithstanding the contrast between him and the artist in respect of the ends of their respective sciences. As art and nature are associated in the possession or exemplification of a rational principle (logou) and so contrasted to chance and the fortuitous, art and science are associated in their common derivation from instruction and their common dependence on a rational principle and so contrasted to the virtues which are acquired by habituation and involve a fixed character rather than explicit knowledge.

Since this double relation of art to science is formal, it is stated best by discriminating the two senses of "form" which are involved. In relation to the things on which it is employed art is the form as well as the principle of change, 28 and in respect of their subject matters, art, since it treats of change,
is contrasted to science which treats of being and its invariable causes. Abstracted from subject matter, in the second place, art is a method which the scientist must seek, discover, and have (ἔξειν), and science, like every rationally directed pursuit, is an art in the sense of a method possessed and used, indeed each of the sciences has its peculiar method suited to its proper subject matter. As method, art extends beyond the limitations imposed by subject matter, and there are universal arts, like dialectic and rhetoric, which may be brought to bear on any subject matter and which may even pass over into the particular science if the method is rendered too specific to a subject matter. In this dimension methods are to be distinguished from each other by the principles or from that which is without matter, for the medical art and the building art are the form of health and of the house”; cf. ibid. xiii. 3. 1070b13 and 4. 1070b33. For λόγος cf. De Partibus Animalium i. 1. 639b14: “Art is the reason [λόγος] of the work without the matter”; ibid. 639b14: “For this is the reason [λόγος], and reason is the principle, alike in works of art and in works of nature”; Metaphysics xiii. 1070b29: “For the medical art is the reason [λόγος] of health.” For μέθοδος cf. De Generatione Animalium ii. 4. 740b25: “And as the products of art are generated by means of the tools of the artist, or to put it more truly by means of their movement, and this is the activity of the art, and the art is the form [μορφή] of what is made in something else, so is it with the power [δύναμις] of the nutritive soul.”

29. In the Rhetoric the artistic or technical method (ἐνεργείας μέθοδος) is contrasted to non-technical means of persuasion which do not belong to rhetoric; cf. Rhetoric i. 1. 1355a4, where the “technical method” is used as a synonym for “rhetoric,” and 2. 1355b35: “Of the modes of persuasion some are non-technical (i.e. are not proper to the art) and some are technical. By non-technical I mean such things as are not supplied by us but are there from the outset, such as witnesses, evidence given under torture, written contracts, and so on. By technical I mean such as are constructed by method and by us. The former has merely to be used, the latter has to be discovered”; cf. ibid. 1355a22: “Every art and method, like every action and pursuit, appears to be directed to some good”; Nicomachean Ethics i. 1. 1094a1. Method (μέθοδος) means both (1) the way of inquiry and procedure in the arts and sciences, and also (2) the discussion according to method and therefore the discipline and doctrine itself or even the treatise in which the doctrine is expounded. In the first sense it is frequently used interchangeably with “way” (διάλεξις); cf. Prior Analytics i. 31. 48b32 where μέθοδος μέθοδοι refers back to 666q in 30. 46b5; cf. ibid. i. 1. 532a27; 45b21; 45b21; 45b27; Prior Analytics i. 21. 82b29; 32; 34b24. In the latter sense it is used as the equivalent to “subject of investigation” (ἐνεργείας). Cf. Physics viii. 1. 251a5: “For the perception of truth concerning these things contributes not only to the contemplation of nature [ἡ λογία ἐν τούτῳ τινί], but to the investigation [ἐνεργείας] of the first principle”; Metaphysics xiii. 1076b9: “We have stated what the substance of sensible things is, first with respect to matter in the treatise [ἡ μέθοδος] on physics, later with respect to that which is actual”; Topics i. 2. 1013a3: “For dialectic being a mode of inquiry has the way (διάλεξις) to the principles of all inquiries [διὰ τῶν μεθοδῶν] to the investigation [ἐνεργείας] of the first principle”; Metaphysics xiii. 1076b9: “We have stated what the substance of sensible things is, first with respect to matter in the treatise [ἡ μέθοδος] on physics, later with respect to that which is actual”; Topics i. 2. 1013a3: “For dialectic being a mode of inquiry has the way (διάλεξις) to the principles of all inquiries [διὰ τῶν μεθοδῶν] to the investigation [ἐνεργείας] of the first principle”; Metaphysics xiii. 1076b9. 1083b6: “If the objects of the arts and sciences are universal, all the “manner” or “variety” (πράγματος) of the science or method is used, in this sense as the synonym of the method of the science; cf. Metaphysics ii. 3. 959b15; De Anima i. 1. 402b19; Prior Analytics i. 31. 46b36. Finally, the term method is used to signify the treatise in which the results of the inquiry are set forth, as in Politics iv. 2. 1289b26; vi. 2. 1317b4.

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30. Rhetoric i. 1. 1355a7; 2. 1355b26. Cf. ibid. 1358b1 ff, where rhetoric is coupled with the dialectical method (διαλεκτικής μέθοδος) of syllogisms and other arts (τέχνης) and powers (δύναμες) in contrast to sciences determined to particular subject matters; the inquirer who hits upon first principles as his premises makes (μορφή) another science than rhetoric or dialectic.

convictions (πίστες) on which they depend or the grounds on which those principles and convictions are established. The characteristics of the related methods may therefore be brought out by schematizing methods in a series of triangles, in which one method, that of inquiry into the results of actions, whether political institutions or art objects, constitutes art, and at the same time all methods are arts.

In this schematism all methods are universal in the sense that any subject matter may be treated by any of them, but their manner of application and their principles are different. Rhetoric and dialectic have no proper subject matter, but in virtue of the generality of their arguments and of the principles on which those arguments depend, they can be applied indifferently to any subject. While general in their application to all things and all subjects, rhetoric and dialectic base their arguments on the opinions of men. They differ from each other less in the details of the devices which both use for proof and persuasion than in the generality of the opinions to which they appeal: dialectic depends on opinions which are thought to be universal, or common, or expert, or preferable in some other sense, while rhetoric consults the peculiarities of particular men, or groups, or circumstances. Sophistic is part of dialectic and rhetoric in the sense that both dialectic and rhetoric are concerned to differentiate real from apparent proof and persuasion; it differs from them in moral purpose and in its use of words. Sophistic then is more general than other methods, in the sense that it is particularized neither by fixities of argument nor definitions of things, but depends entirely on the manipulation of words and the accidents of association unconstrained by concern to reproduce the opinions of men or to reflect the nature of things. Histories, arts, and sciences, finally, are particularized to the subjects they treat and cover all subjects only by addition, histories completing histories and furnishing materials for arts and sciences, arts supplementing arts and ordering the inquiries of history and the demonstrations of science, sciences treating each its appropriate subject matter in terms of its proper causes and so ordering the things assembled in histories according to methods which are arts. Each base of the triangle and of each interior triangle indicates related as-
pects of methods. History, art, and sciences are determined primarily by the nature of things, since habits of thought and modes of expression are adapted in them to the requirements of their proper investigations among things. History as a method of inquiry concerning particular things includes both the collection of information about kinds of things, as, e.g., in the “history of animals,” the “history of natures,” and the “history of the soul,” and the study of processes and actions, particularly those of men, which is in modern usage associated with history. Art, which treats of actions and productions, has a similar double application; it is a method for guiding the processes of action and production and also, in the case of art in the narrow sense, a method of investigating the product. In both history and art there is an externality of thing and idea, for experience of things causes the ideas which constitute history, and the ideas of artist and statesman govern the actions of each in his appropriate subject matter, but in science that externality is removed, and knowledge and the known are identical. The methods of the sciences are concerned with inquiry into being, into natures and changes and into quantitative abstractions. The complete history of any class of things would supply the principles for its scientific treatment, and conversely, correctly established scientific principles would apply to any instance or phenomenon disclosed by the history of such things. The particulars with which art is concerned are artificial things or, more generally, voluntary acts, and therefore the method of art both controls its appropriate history in the construction of art objects and grasps its appropriate causes, since the rules of action and construction attain a universality comparable to the laws of science. The statements of history thus are singulars, while those of poetry partake of the nature of universals, and poetry is therefore more philosophic and graver than history. The methods lying on this base—history, art, and science—touch on existent things in modes which range from the particulars of things “better known to us” to the universality of things “better known in nature,” and it indicates the relations involved in Aristotle’s frequent appeals to constructive, inductive, and abstractive processes.

Apart from their application to things, methods may be constructed with a view to generality or with a view to the conditions of various possible applications. One of the two remaining bases of the triangle—science, dialectic, and sophistic—consists of methods of attaining and using general principles or formulations which may take the place of general principles, and they are differentiated and treated as such in the last three books of the *Organon.* The other base—history, rhetoric, and sophistic—contrariwise, derives its cogency or use from application to particularity: history by treating particular circumstances as its subject, rhetoric by suiting its arguments to the predilections of particular audiences, sophistic by relying on the apparent and genuine implications of particular statements. Within the large triangle, rhetoric, dialectic, and sophistic are related in their common concern with words and statements, and in the purpose of the rhetorician and dialectician to refute the fallacious use of words. Art, rhetoric, and dialectic are related in their common concern with men’s thoughts, history, rhetoric, and art in their common concern with men’s actions and passions; and finally art, dialectic, and science in their common concern with universals (sophistic being concerned with pseudo-universals, and rhetoric with statements that are probable or true for the most part).

3.

In a broad sense, in which art includes all rational activity, even science, art is contrasted to nature as an efficient cause of change. In a narrower sense, in which art includes questions of practical action, art is contrasted to theoretic science as an activity of the soul. That narrower conception of art is susceptible of further specification in two steps, first by distinguishing ends and so differentiating the arts from the practical sciences, and secondly by distinguishing subject matters and so differentiating the particular arts from each other. The differentiation is progressive and at each stage likenesses as well as differences are involved; consequently the whole classification of the arts and sciences is reduced to confusion and contradiction if a single basis is sought for it, and Aristotle then seems to have confounded, in his distinctions, making with doing, art with science, and knowledge with nature.

32. Prior Analytics i. 30. 66b24: “For if none of the true attributes of things have been omitted in the history, we should be able to discover the proof and demonstrate everything which admits of proof, and to make that clear, whose nature does not admit of proof.” History of Animals i. 6. 491b10: “Then we must try to discover the causes of these things, for it is thus that the investigation [μαθηματική] is conducted [ταπεινότερα] according to nature, once the history of the particulars has been completed, and from them it becomes clear what the subjects and premises of the demonstration must be.” Cf. De Caelo iii. 1. 208b32; De Anima i. 1. 402a4; De Generatione Animalium iii. 8. 757b35 and 758b3 where “historically” based inquiry (ιστορίως) is contrasted to ignorance or lack of experience (ονειδισμός); Rhetoric i. 4. 1359b32. The term is frequently used in the sense of the history of human actions and in general narrative history of changes; Rhetoric i. 4. 1360b37; iii. 9. 1409b28;
34. De Anima iii. 4. 429b4 ff.; 7. 431a1; 431b16; 8. 431b20.
36. Posterior Analytics i. 19. 81b18; Topicos i. 1. 100b25 ff.; De Sophisticis Elenchus 2. 165b28 ff.
37. Poetics 19. 1456b34; 6. 1450b4; Rhetoric i. 1. 1359b1; 2. 1356b30.
38. Poetics 23. 1459b17; i. 1. 1447b28; 11. 1452b11; Rhetoric i. 2. 1356b14; ii. 1. 1378b19 ff. and in general chapters 2-41.
40. Zeiller (Aristotle and the Early Peripatetics [English translation; London, 1897], I. 180 ff.) summarizes the conclusions of Ritter, Brandis, Teichmüller, and Walter concerning this confusion in which two bases of classification are hopelessly intermingled, a twofold classification into theoretic and practical sciences, and a threefold classification into theoretic, practical, and poetic. Cf. p. 180: “If we follow out the development of these principles in the Aristotelian system, and seek for that purpose to take a general view of the divisions he adopted, we are met at once with the unfortunate difficulty that, neither in his own writings nor in any trustworthy account of his method, is any satisfactory information on that point to be found”; and pp. 184-85: “If, however, we attempt to apply the suggested division to the contents of the Aristotelian books, we run at once into manifold
ence—productive, theoretic, and practical—are all distinct; yet all powers proceed from nature, and the sciences are kinds of powers so interrelated that the theoretic sciences treat of the materials and faculties from which art proceeds and on which virtue is exercised; the arts are employed in the construction of all things made in accordance with reason, including scientific theories, political organizations, and moral plans; and finally politics pronounces on all permissible pursuits including the cultivation of arts and sciences, and the virtues include the arts and sciences in their number. Much as poetic power, taken in its broad sense as efficient cause, was delimited to "art" by differentiating two forms of power, rational and irrational, so art, taken in its broad sense as productive science, is narrowed to "productive" or "poetic" art by differentiating two varieties of final causes in which human action can be consummated: an object produced by the action or the action itself. That contrast of ends and the correlative contrast of efficient causes constitute the difference between "making" and "doing," "production" and "action," between the productive sciences in the narrow sense and the practical sciences, for the actions performed by an agent are traceable back to his character, choice, or will, while the products of art originate primarily in knowledge. Art now appears in a third guise and context: as powers first are contrasted to powers, and in that context art is a kind of power; and as rational powers secondly are contrasted in nature and mode of acquisition to irrational powers, and in that context art is a kind of science; so, thirdly, the effects of those processes on the mind and on its future actions are contrasted to those transitory alterations which afford neither training nor habituation, and in that context art is a kind of habit (ἐξήλικα).

Habit may be defined in terms of the two pairs of distinctions thus far employed: it is midway between activity and power, partaking of certain aspects of both, and it is midway between action and suffering. Power is a cause of action, but unlike a power a habit is not productive of contrary results; like actuality it is the principle and end of actions, for habits are the result of prior activity as they are in turn the principles from which actions originate. Habits are therefore qualities of the agent, contrasted to dispositions which are less stable than habits, and to passions which are the consequences of the activity of an external agent. The prime examples of habit however are the sciences and the virtues. Art, as it was a power and a science in the previous classifications, is in this classification a habit and a virtue. It is a virtue of the rational part of the soul and of the rational part which is concerned with variable things and which is called calculative in contrast to the scientific part by which invariable causes are contemplated. As in the case of all previous correlates to which art has been contrasted, art is distinct from each of the other intellectual virtues and yet in a sense it is identical with or subordinate to each: it is subordinate, thus, to the other virtues of the calculative part, particularly in the form of statecraft which regulates arts like other powers exercised in the

43. The relation of habit to action and power in the analysis of Aristotle is well illustrated by his inquiry into the nature and cause of imagination, which begins by raising the question whether imagination is a power, habit, or activity (De Anima iii. 3. 429b1); "habits or powers" are there exemplified in the list, "sensation, opinion, science, understanding." Imagination is eventually defined as a kind of motion, and it is specified that motion makes it possible for its possessor to do (τοιούτῳ) and suffer (τοιούτῳ) many things (ibid. 428b16). A power or science is related to contrary objects, whereas a habit which is one of two contraries does not produce contrary effects (Nicomachean Ethics v. 11. 1399b15), and it is a bad error to confuse habits with activities or powers (Physics v. 5. 120b16). Again, consider whether he who reduced 'habit' to 'activity' or 'activity' to 'habit,' e.g. reducing 'sensation' to 'motion through the body,' for sensation is a 'habit,' whereas motion is an 'activity.' Similarly, also, if he has called 'memory' a habit retentive of a conception, for memory is never a habit, but rather an activity. They also make a bad mistake who reduce 'habit' to the 'power' that follows habit... Habits are produced from like activities (Nicomachean Ethics ii. 1. 1103b21; 2. 1109b30); conformity to habit is the end of every activity (ibid. iii. 10. 1115b20); and a single habit may give rise to many activities, whereas a single activity can originate only its single proper habit (Physics v. 4. 229b12). Habit is a kind of activity of the haver and the had, comparable in this respect to action, making, and motion (Metaphysics v. 20. 1022a24) and even a privation may be a habit (ibid. 12. 1019b6), although habit is also the contrary of privation (Categories 10. 12; the kinds of good activities are habits (Nicomachean Ethics vii. 13. 1152b33).

44. Habit is one of the kinds distinguished under the category of quality; and having is one of the categories as well as one of the so-called post-predicaments (Categories 8. 827b; 4. 1227; 15. 1517). All things are either substances or passions, dispositions, habits, or motions of substances (Physics ii. 1. 199a23; Metaphysics xi. 3. 1061b6). Habits may be natural (Nicomachean Ethics vii. 13. 1129b4; 1152a14); change tends toward nature, while invariable repetition produces a settled habit (Rhetoric ii. 11. 1371b26); and one kind of habit is the habit of insusceptibility (Metaphysics xi. 1. 1046b15; 12. 1019b6). The genus of virtue is found by eliminating among the three things that virtue might be: passions, powers, or habits (Nicomachean Ethics ii. 4. 1103b19), and the attributes of sensible things seem to be exhausted by habits and passions (De Anima iii. 8. 432b).

45. Categories 8. 828b9; Politics iv. 1. 1236b17; Nicomachean Ethics viii. 3. 1199a31; Posterity Analytics ii. 19. 999a18, 25, 32; De Partibus Animalium i. 1. 639b9; Nicomachean Ethics ii. 4. 1106b12; Physics vi. 3. 240b10, 39; Politics i. 13. 1259b25; ii. 6. 1265b5; Rhetoric. i. 6. 1362b13; iii. 12. 1388a34; iii. 7. 1408b29. The two habits corresponding to the two parts of the soul, rational and irrational, are referred to as reason and appetite; Politics vii. 15. 1339b17.

state, and excellence in art is an instance of wisdom which is the supreme virtue of the scientific part of the soul. By the same token, all the other virtues are arts insofar as they exercise a method of construction or insofar as they are influenced by the arts or affected by knowledge.

4. In a fourth and most particular sense, art and making is defined by the materials ordered and formed by means of the particular arts, and in that context arts are contrasted to works. "Art" may be applied to what is artistic or to works of art, as "nature" is applied to what is according to nature and natural. The terms "poetic" and "making" assume the sense of "poetry," as limited strictly to the art which makes use of words as its material and contrasted to prose as the alternative manner in which words might be used. The enumeration of the arts at the opening of the Poetics is in terms of the concrete objects (τὸ σύνολον) which constitute the art, and so considered the arts are modes of imitation, analyzable like natural things which are also concrete objects, by means of their matter and form as well as by the cause of their generation, and the arts are therefore differentiated and classified in terms of the means, object, and manner of their imitation.

The schematism of the four causes determines a schematism of four senses in which art is treated in the works of Aristotle. Art enters into many interrelations with other things and processes, determining them and being determined by them, and it has many likenesses and many differences from the things which it is like. Art is a power like nature, in its first sense as a cause of change; it is an object like nature in its fourth sense as an object possessed of independent existence and intelligible characteristics. All arts may be analyzed as powers possessed by the artist, but that manner of analysis is particularly well suited to those arts, like dialectic and rhetoric, which have no proper subject matter, while only the fine arts can be defined and analyzed completely in terms of the characteristics of their products. Art is a kind of knowledge like science, in its second sense, generated from experience and conversant with causes; it is a kind of habit and virtue like prudence and wisdom, in its third sense, possessed of a permanent status consequent on practice and instruction. All arts may be treated in terms of the processes and materials of their generation, and the productive arts may be treated in terms of ends, not only the moral and political ends to which they contribute, but also the aesthetic ends which knowledge of the practical and theoretic sciences may be made to serve. Art has, without necessity of confusion, all of these diversified significances: (1) it is a natural faculty or skill which initiates and guides production; (2) it is a psychological stage in education and a method in the development of knowledge; (3) it is, in the moral interpretation, a virtue or habit of the mind, an end of human activity, and an instrument of political action; (4) it is finally a class of objects to be known, judged, and appreciated. Relative to objects, "art" is applied to either the process of generation or the products for contemplation; both depend on knowledge, and as knowledge "art" is applied to the characteristic forms in which its materials may be assembled or the ideal ends which they may be made to serve. Art is a natural power and as such is subject for scientific inquiry, yet it is distinguishable, together with all processes that depend on reason, from natural powers by the possession of a rational form and method. Art is a science and as such involves knowledge and the exercise of reason, yet it is distinguishable, together with the practical arts or sciences, from science in the sense of theory, since science has only knowledge as its end, while art and the practical sciences are directed to action or the results of action. Art is a virtue and as such a habit of the soul, yet it is distinguishable, like the virtues of the scientific part of the soul, from moral virtue since it is subject to analysis apart from the habits and ability of the individual agent. Art, finally, is a concrete object and as such analyzable in terms of form and matter, but unlike natural objects its form and definition are not determinate or natural but are determined ultimately not only by the potentiality of the artistic material but by the nature of the artist and the susceptibilities of the audience. Art is distinct from nature, and yet a natural power; it is distinct from science, and yet a productive science; it is distinct from virtue, and yet an intellectual virtue; it is distinct from natural objects, and yet a concrete object. Art has greater latitude of choice than morals, since the productions of the artist are not fixed by a natural end as are the actions of a moral agent, and it admits of less determinateness of knowledge than physics since the objects produced by art are not fixed by a natural form and therefore cannot be treated, like natural objects, in strict definition or scientific demonstrations. While art has all four general senses, it is treated most characteristically in the fourth and narrowest sense, for in that sense the arts are distinguished into particular arts composed of distinctive art-objects, and arts are compared and contrasted, as arts, with each other.

The treatment of the arts which results from the application of the four causes to their analysis is more elaborate and complex than the treatment of nature, because form and matter are separable in the arts—indeed separate arts may be concerned, one with the production of a matter, the other with its...
use—whereas function and end are inseparable from matter in the products of nature. Scientific knowledge, therefore, is based ultimately on substance; physical definitions involve form and matter; and frequently only two of the four causes are distinguishable in nature. Art as knowledge is either identical with the power of the artist, or it is a science concerned with the products of the art. The power of the artist, which is indeterminate, is particularized in his person, situation, and materials, while the definition of the art is generalized from examination of the form and matter of its particular products. All four of the causes are distinguishable in art—indeed they are distinguishable in nature only by the analogy of art—and they enter in some fashion in fixing the matter of any discussion of art. Rhetoric, like medicine and political science, is defined as a power or faculty (δύναμις) while poetic is defined as a concrete object (σωκόλον). When arts are defined as powers, their mode of exercise or their use of rational principles rather than the outcome of their exercise is important, for success in the arts depends on matter and circumstance, and their ends are determined by another art. Arts like rhetoric and dialectic can be defined only in terms of power. When art is defined as concrete objects, the goodness or badness of their form and the success or failure of their devices rather than the rules followed for their construction are important. While the fine arts may be considered in terms of the power of the artist or the potentialities of the matter, or in terms of their proper ends or further extraneous ends which they may be made to serve, or in terms of related ideas and methods, they may also be considered in themselves, as esthetic entities and as matter and form. Other arts fall between these two extremes: medicine, like rhetoric, is a power, but it has a proper subject matter; politics, like rhetoric and medicine, is a power and like medicine it has its proper subject matter, but it also embraces and determines the ends of the other arts.

III

Of all the arts there are two, dialectic and rhetoric, which are not confined to any class of subjects, and their treatment therefore is peculiarly dependent on consideration of the power from which they proceed. Since rhetoric is defined in terms of the power or faculty by which rhetorical arguments are perceived, it should be treated apart from consideration of any actual persuasion which it may produce, for art is characterized by its method, not its effects, and it may therefore be unsuccessful because of unfavorable circumstances, even when properly exercised. In this, rhetoric is like medicine and all other arts, but it is contrasted to those same arts precisely in terms of the subject matter to which their powers and functions apply. The ends of all arts are determined by the most authoritative art and science whose end is in the highest degree a good, the political art in the sphere of practical action and wisdom in general. But the arts are also imitative and they may therefore be treated not merely in terms of the ends sought in what we do but in the characteristics of what is made. The technique of analysis relevant to art and the criteria to be employed in judging it are determined by these various forms under which art may be treated. First, art, though distinct from nature, is none the less a natural power, method [μέθοδος] perfectly, when we are in a position like that which we occupy in regard to rhetoric and medicine and powers [δοξασμάτων] of that kind. This means to do [να τινέ] what we choose with the materials available [εκ τῶν εὐρετήριάτων]. For the rhetorician will not persuade by every method [παράδειγμα], nor will the doctor heal, but if he omits none of the available means, we shall say that he has the science [ἐπιστήμη] adequately. Cf. ibid. vi. 12. 149234 for criticism of a definition of rhetoric which depends on success in persuasion, and De Anima iii. 9. 43344. For specification that knowledge alone is insufficient to produce action according to knowledge, Rhetoric and medicine are used as examples to indicate the character of deliberation, Nicomachean Ethics iii. 5. 111211: "We deliberate not about ends but about means. For a doctor does not deliberate whether he shall heal, nor an orator whether he shall persuade, nor a statesman whether he shall produce [τούτου] law and order, nor do the practitioners of any of the other arts deliberate about ends." The pursuit of an end in an art is infinite; it is delineated either by the means available or by the limitation imposed on the end by a superior art. This natural limitation of means and end is well illustrated by the "art of getting wealth" (γνωρύπετον): it too is a poetic art (i.e., an art of making); it is defined, not in terms of the function of making money (much as the definition of rhetoric in terms of the power of persuading was avoided), but in terms of the power to discover whence wealth may be obtained; when it is made part of economics a limitation is placed on its end and it is a natural art, and as such is to be distinguished from the unnatural art of getting wealth in which no end or limit is imposed. Cf. Politics i. 9. 125759: "For this reason the art of getting wealth seems to be concerned chiefly with money, and its function [ἐπιρρέω] to be the power of considering whether there will be an abundance of wealth, for it is the art of making [τούτου] riches and wealth,... (23) And the riches from this art of getting wealth are without limit. For just as in the art of medicine there is no limit to the pursuit of health and as in each of the arts there is no limit in the pursuit of their ends (for they aim to accomplish [να τινέ] their ends to the uttermost), but the means to the ends are not infinite (for in the end all cases is the limit), so, too, in this art of wealth-getting there is no limit to the end, but the end is riches of this sort and the possession of wealth." 52. Rhetoric i. 2. 135926": "Rhetoric may be defined as the power [δυνάμεις] of observing in each case the available [τούτου εὐρετήριάτων] means of persuasion. This is not the function [ἐπιρρέω] of any other art. Every other art can instruct or persuade about its own particular subject-matter; for instance, medicine about what is healthy and unhealthy, geometry about the properties of magnitudes, arithmetic about number, and the same is true of the other arts and sciences. But rhetoric we look upon as the power of observing the means of persuasion on almost every subject presented to us; and that is why we say, that in its technical character, it is not concerned with any special or definite class of subjects." 53. Politics iii. 12. 128811; i. 1. 12521; Nicomachean Ethics i. 1. 109426; vi. 7. 114120 and esp. 28: "It is evident that wisdom and the political art are not the same, for if habituation concerning things useful to oneself is to be called wisdom, there will be many wisdoms; there will not be one concerning the good of all animals (any more than there is one art of medicine for all existing things), but a different wisdom concerning the good of each species."
and as power exercised by the artist is subject to strict scientific analysis. Secondly, art, though distinguished from natural powers by the use of reason, is none the less a poetic power, and such powers delimit appropriate fields of activity in which they constitute expertness; this is the reason why in rhetoric Aristotle’s chief emphasis is on determining the “body” of that which is essential to the art. Since the deliberation of art bears only on the use of means to achieve ends which are not themselves examined within the art, a third analysis is possible within the art of politics; and art, though not a moral virtue, is none the less a virtue and as such relevant to human happiness. Finally, art, as a mode of imitation, may be considered in terms of the actuality of the art-object as well as in terms of the power of the artist, for two “natural causes” are added to set art, conceived as a rational poetic power, in actual operation, a natural tendency in man to imitate and a natural delight in imitation; and the analysis of the objects of the fine arts therefore has an independence and completeness impossible in other arts which have indeterminate ends, for it turns not merely on powers or habits of artists nor on consideration of the materials susceptible of treatment or the “body” of the art, but it is concerned with examination of the form or the “soul” of poetic production.55

IV

The influence of Aristotle on later thought is complex, and any statement of that influence is involved in paradoxes illustrated in alternative interpretations of major shifts in the course of intellectual history as revolts against his outworn authority or as discovery of his forgotten methods. The story that his works were made inaccessible shortly after his death is plausible since there is little or no evidence of their direct influence. After they were rescued from the cellar in the Troad and edited in the first century A.D., only the Categories and the *On Interpretation* seem to have been available in Latin translation. The works of Aristotle were unknown in the West from the third century B.C. to the twelfth century A.D., and as soon as they were translated during the twelfth and thirteenth centuries, they were subject to radical new interpretations, adjustments, and refutations. Since the Renaissance, his influence has been accommodated to the formula that the minds of men had been enslaved by his doctrines for two thousand years and that the rebirth of learning had been made possible by liberation from his authority in field after field. The errors consequent on his distinctions are so well-known that the analyses on which they were based and in which they were used have been broken into parts to be rearranged in chronologies of changes in the evolution of his doctrines and his styles: ten categories, four predicables (which became five after Porphyry and six after Avicenna), three figures of the syllogism (which became four after Theophrastus or Galen), four causes (which gave prominence to the final cause), natural and violent motion (which excluded the possibility of action at a distance or inertia), discrete and continuous quantities (which disjoined arithmetic and geometry), and he thought that there are substances and entelechies, and that slavery is natural and that art is imitation.

Yet the influence of Aristotle is not in question because of these paradoxes. On the contrary, the paradoxes provide a sure guide to the nature of his influence, and they suggest the reason for the particular influence of the *Poetics* and the *Rhetoric*. Aristotle was at pains to differentiate terms according to their meanings, and methods according to their subject matters. Philosophers who seek analogies rather than literal distinctions deny the separation because common properties are found in both the distinguished terms, or because one is a variety subordinated to the other. A single method can then be substituted for the plurality of methods.

If physics is concerned with natural motion, scientific generality will be achieved by a scientific method distinct from the method of dialectic, which finds generality in the opinions of men, and the method of sophistic, which encounters generality in the paradoxes of thought and expression. The beginnings of the study of local motion in modern physics derive more directly from the studies of “sophisms” concerning local motion56 or from studies of proportions57 and analogies (two translations of the single word, ὀνοματογένεσις) than from Aristotle’s study of natural motions and natural places. If poetics is concerned with artificial objects, scientific objectivity will be achieved in the study of the nature and properties of a poem by a poetic method which seeks unity, necessity, and probability in ways distinct from those used in the historical method or the scientific method. The beginnings of the study of occurrences and actions in modern history, literary criticism, and physics depends on no such distinction: they are all poetic, or methods of discovery, but the method of discovery has been assimilated to common-places of rhetorical discovery.58 Once that transformation has been made, Aristotle’s influence and his shortcomings are both easy to understand: the study of the poem as a concrete whole and its properties are found in both the distinguished terms, or because one is a variety subordinated to the other. A single method can then be substituted for the plurality of methods.

54. *Rhetoric* i. 1. 1354*15. Since the enthymeme is the “body” of proof, the importance of “places” (τόποι) as “elements” (ἐνθυμενήματα) of the enthymeme is apparent from the analogy to the elements of natural bodies; cf. ibid. i. 2. 1335*25; ii. 22. 1390*21; 26. 1403*17.
55. *Poetics* 6. 1450*38: plot is the principle and soul of the tragedy; 1450*22: it is the end of tragedy; 7. 1450*23: it is the first and most important thing in tragedy.
56. Curtis Wilson, *William Heytesbury, Medieval Logic and the Rise of Mathematical Physics* (Madison, Wis., 1956) is a study of Heytesbury’s *Regula Secundum Sophismata* which treats local motion in one of its chapters. The chapter is entitled *De Motu Locali* in the edition of Venice, 1491.
58. We have become so accustomed to recognize the use of rhetorical commonplaces that the term has taken on pejorative associations which deprive us of a useful instrument in the understanding of the use of concepts in physical theory. Niels Bohr makes a supple and shrewd use of them in “Quantum Physics and Philosophy: Causality and Complementarity,” *Philosophy in Mid-Century*, ed. R. Klabinetz (Florence, 1955), 1. 308–10: “The significance of physical science for philosophy does not merely lie in the steady increase of our experience of inanimate matter, but above all in the opportunity of testing the foundation and scope of some of our most elementary
classification in kinds determined by the object, means, and manner of imitation must be transformed into the study of the poem as the product of the creative art of the poet and as productive of its proper effects of pleasing, informing, and moving in an audience. Thereafter the vocabulary of Aristotle is readapted to the study of poetry in its circumstances and its influences as they are found in content and style. This redefinition of terms depends on Rhetoric rather than Poetics. Moreover the relation of form and matter is involved, for the “commonplaces” become themes, that is, matter, rather than sources of arguments, that is, organizing principles, and the “tropes” become figures of speech rather than modes of thought and being. The long history of the influence of Aristotle has rarely produced an “Aristotelian” dedicated to his diversity of methods, but the same history does suggest that there is a richness of method in his distinctions which might be used to modulate the modern cold war between the two unified methods which have been formed by reducing all methods either to the operationalism of a rhetorical poetics or to the organicism of a dialectical poetics.

concepts... a new epoch in physical science was inaugurated, however, by Planck’s discovery of the elementary quantum of action, which revealed a feature of wholeness inherent in atomic processes, going far beyond the ancient idea of the limited divisibility of matter. Indeed, it became clear that the pictorial description of classical physical theories represents an idealization valid only for phenomena in the analysis of which all actions involved are sufficiently large to permit the neglect of the quantum. . . . by the word “experiment” we can only mean a procedure regarding which we are able to communicate to others what we have done and what we have learnt.”