Esthesis and Poiesis: On the Foundations of Science and Art

Drew Flieder

Abstract

This essay develops a general account of human cognition and action as a cyclical movement between two complementary processes: *esthesis* and *poiesis*. Esthesis describes the ascent of extra-mental being into intelligibility, proceeding from sensation through apprehension to conceptual determination. Poiesis describes the inverse movement, in which conceived forms are articulated, desired, and realized in extra-mental being through action.

On this basis the essay argues that science and art arise as systematic cultivations of these two processes. Science refines the powers through which reality becomes known, while art refines the powers through which imagined forms are expressed and realized. This yields parallel classifications of the sciences and the arts grounded in the structure of cognition and action.

Contents

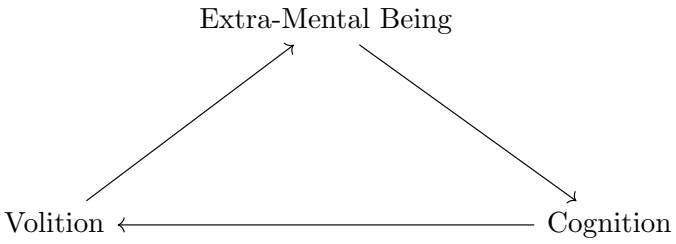

Figure 1: The cycle of *esthesis* and *poiesis*.

1 Theory and Practice

The distinction between theory and practice will be familiar to readers of Kant, whose first two *Critiques* treat these domains in a highly systematic fashion, although Kant, of course, did not originate this distinction. In Aristotle we find a threefold division between the theoretical, the practical, and the productive sciences (Aristotle, 1984a, 1025a20–30), which are distinguished according to the ends toward which they are directed. Theoretical science (*theoria*) seeks knowledge of things as they are. Practical science (*praxis*) concerns the regulation of action. Productive science (*poiesis*) concerns the making of objects external to the agent.

Each of these activities therefore has a distinct end. In production the end lies outside the agent, in the object brought into being through the act of making. In practice the end lies within the agent itself, for the aim is a certain form of conduct or character. In theory the end consists in the conformity of the mind with its object, that is, in truth.

Now human beings encounter the world first through perception, and from this encounter arise both thought and action. This is because what we know informs what we desire, and what we desire informs what we do. Therefore cognition and volition form the two principal moments within a movement through which human beings participate in reality.

This movement may be described as a cycle. On the one hand, actual things affect the senses, are apprehended by the mind, and then finally conceptually determined, so that the forms of things come to exist within the mind as intelligible contents. Thus extra-mental being passes into the domain of thought, and becomes knowledge when determined by a concept that adequately comprehends it. On the other hand, once concepts have been formed, their objects may become the objects of desire. Desire then motivates action, and action in turn brings new extra-mental states of being into existence in the world. Therefore what begins in actuality returns to actuality through the mediation of cognition and volition (see Figure 1).[1]

[1] Compare (Aristotle, 1984b, Book III.10), where Aristotle describes action as arising from the intellect, which presents the object, and desire, which moves the agent toward it.

Later we will flesh out this process in greater detail. For now, note that the figure can be divided into two complementary subprocesses. The first is the ascent from extra-mental being to intelligibility, through which the forms of things become present within cognition. This movement may be called *esthesis*, since it originates in sensation and culminates in conceptual understanding. The second subprocess proceeds in the opposite direction. It begins from concepts, passes through desire and action, until it once again terminates in the realization of actual states of extra-mental being. This movement may be called *poiesis*, for it concerns the production or realization of form in the world.

Esthesis thus describes the reception of being into cognition, while poiesis describes the realization of conceived forms through action, and together they constitute the circulation through which human beings both understand and transform the world.

The aim of the present essay is to clarify the circulation between esthesis and poiesis. I argue that these two movements provide the underlying structure upon which both science and art are grounded. Science may be understood as the systematic cultivation of esthesis, insofar as it refines the powers through which reality becomes known, while art may be understood as the cultivation of poiesis, insofar as it refines the powers through which imagined forms are incarnated. After analyzing the stages of esthesis and poiesis, we will see how the principal divisions of the sciences and the arts arise from the basic structure of these two fundamental movements of human cognition and action.

The present account draws upon several philosophical traditions. From Aristotelian philosophy we inherit the classical distinctions between theoretical, practical, and productive activity, as well as the conception of powers of the soul or mind. Kant's analysis of judgment provides a framework for understanding the relation between determinative judgment and reflective judgment, which we discuss in Sections 2.1 and 3.1. Finally, Peirce's architectonic classification of the sciences offers a systematic perspective on the ordering of human inquiry, which we address in Section 2.2. We will also see, at the end of Section 3.2, that our classification of the arts is motivated by his sign theory, insofar as each art has as its end one of the three components of the sign relation: a sign-vehicle, an object, or an interpretant. The aim of the present essay is therefore to synthesize insights from these traditions into a unified account of the cognitive processes underlying both scientific knowledge and artistic creation, providing a foundation upon which further inquiry into their divisions and relations may proceed.

2 Esthesis and Science

In order to understand the nature of scientific inquiry, we must first examine the process by which cognition arises in the mind in the process of esthesis. For science, I claim, is the systematic cultivation of the powers through which reality first becomes known to us.

After we analyze the stages of esthesis, we will be able to see how the principal divisions of the sciences arise naturally from the structure of cognition.

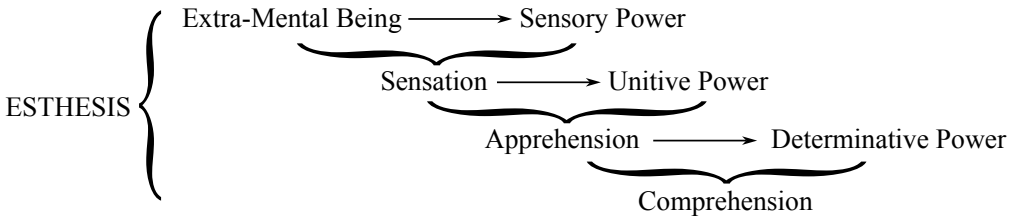

Figure 2: The three moments of esthesis: sensation, apprehension, and comprehension.

2.1 Esthesis

Let us now examine the process of esthesis, so that we may understand the genesis of cognitive judgment. It will be helpful to adopt an Aristotelian vocabulary concerning the distinction between *potentiality* and *actuality*.[2] A potential capacity of the mind or soul to enter into a certain state of actuality is called a *power*. For instance, human beings possess a sensory power that enables them to experience sensation. Yet this power remains in a state of potentiality until it is affected by something external to the mind. When such an extra-mental being acts upon the power, the latter passes into actuality, namely the actual experience of sensation. For example, the power of sight is potentially blue; it becomes actually seeing the blue when a blue object appears before the seer. The thing that brings the power into actuality is called an *act*. Thus an act affects a power and brings it into an actual state—its *actualization*—which may be regarded as the offspring of the two.

Returning to esthesis, we observe a series of actualizations involved in the formation of a cognitive judgment, each such actualization serving in turn as the act for a higher cognitive power. The process unfolds in three stages. First, an actualization occurs when an extra-mental object affects the sensory power of the subject, producing a manifold of sensation. Second, this manifold must be unified into a presentation of a single object. I call the power responsible for this synthesis the *unitive power*, which gathers the manifold of sensation into a unity that I call an *apprehension*. Finally, the apprehension is brought into relation with what I call the *determinative power*, whereby the object is understood under a determinate concept, and thus forms a *judgment*, or what we may also call a *comprehension*.[3]

The genesis of cognition therefore proceeds through three successive phases, as depicted in Figure 2.

In sensation the mind receives the forms of things through sensory compulsion. In apprehension these forms are synthesized into a unified presentation. In comprehension the object is conceptually determined in judgment. Through this process the form of the object passes from embodied existence into intelligible articulation within the mind.

[2] See (Aristotle, 1984b, Book II.5).

[3] Compare Kant's discussion in (Kant, 1998 (1781/1787), A97–A110).

2.2 Science as the Cultivation of Esthesis

If the scheme of esthesis describes the initial process by which we come to know reality, there remains the further question of how our understanding of reality may be cultivated. It is natural to suppose that such cultivation consists in the refinement of the powers involved in this process.

For instance, the physical sciences, in making use of specialized instruments for performing measurements, may be understood as extensions of the sensory power beyond its natural capacities. These instruments allow us to sense things that would otherwise remain inaccessible to our unaided faculties.

Similarly, the cultivation of the determinative power consists in developing the capacity to make precise conceptual determinations. And what is mathematics, if not the science of concepts?

Lastly, we may ask in what the cultivation of the unitive power consists. The unitive power is the mind's capacity to grasp the contents of its awareness as a distinct phenomenon. It employs no special extensions beyond those already present in ordinary experience. Rather, it consists in the mind's capacity to attend to what appears before it—what we may call the cultivation of common sense—if by common sense we mean, as Peirce does, that which is available to anyone at any moment. It is the science that investigates that aspect of cognition concerning the mind's relation to an other in general.

Thus we arrive at a distinction between mathematics, philosophy, and the special sciences, each corresponding roughly to the cultivation of one of the powers operative in the tripartite structure of esthesis. We will examine this claim in greater detail shortly. For the moment, it suffices to note that this division coincides with Peirce's well-known tripartite classification of the sciences.

As Atkins summarizes (Atkins, 2008), Peirce's classification rests on two principles. First, according to the principle of dependence, if a science S borrows principles from another science S', then S is arranged below S' in the architectonic. Second, according to the categories, the sciences are arranged in the order of Firstness, Secondness, and Thirdness.

Peirce's first trichotomy is therefore:

1. Mathematics
2. Philosophy (or Cenoscopy)
3. Idioscopy (or the Special Sciences)

Mathematics draws upon no other science; philosophy draws upon mathematics; and idioscopy draws upon both mathematics and philosophy.

I will not here examine the details of this division or its further subdivisions. My aim is only to show how this trichotomy follows naturally from the structure of esthesis.

2.2.1 On Mathematics

Mathematics arises by prescinding the final phase of esthesis (that is, comprehension) from the lower phases of apprehension and sensation. What remains is the pure form of judgment considered independently of any particular object of experience. In ordinary cognition, a judgment determines an object that appears in an apprehension. In mathematics, by contrast, we consider the form of such determination while abstracting from any empirical content to which it might apply. Mathematics therefore studies the structure of judgment—that is, conceptual determination—itself.

A judgment always involves a subject and a predicate. If we now carry this prescission further and strip the subject of every empirical determination, what remains is the minimal logical conception of *existence*: something that simply is, without any intrinsic qualities. In mathematics this conception is expressed in the notion of an *element*. An element signifies nothing more than a propertyless mark of existence. From elements we obtain the conception of plurality as a *set*, understood simply as a collection of such marks of existence.[4]

Likewise, when predicates are considered independently of the empirical natures of things, their purely logical form appears as what mathematical logic calls a *propositional function*: a rule that determines, for each element (or for each tuple of elements, in the case of relations), whether the predicate applies. The properties and relations imposed by such functions generate the structures studied in mathematics, and thus mathematical objects—typically, sets with additional structure—arise from considering the pure form of judgment independently of empirical content. For instance, suppose we are given an infinitely denumerable set of elements X. One may define a propositional function on pairs of elements of X. If this function satisfies the conditions of transitivity, antisymmetry, and strong connectivity, it defines a total order on X. Under such a relation, the elements of X acquire determinate positions within the ordered sequence, and the structure thereby realized is precisely that of the natural numbers.

Now once such structures are posited, mathematics proceeds by drawing the necessary consequences that follow from them. A mathematical proposition, like any proposition, expresses the application of a predicate to a subject. In mathematics, however, the subject is not a thing possessing intrinsic properties that we encounter in empirical cognition. Its entire being is exhausted by the relations it sustains to other subjects, and these relations are purely formal.

The predicate, in turn, functions as a rule specifying how a structural property is to be verified. For instance, consider the proposition "6 is not a prime number." To establish this, one exhibits two numbers greater than 1 whose product is 6. What is important is that this result does not arise from any intrinsic feature of the number 6 itself, but from its position within the system of relations that constitute the totally ordered set of natural numbers, which is a purely formal structure possessing no empirical content.

[4] The following account of elements, predicates, and structures follows (Flieder, 2025, Section 3.3.2).

Mathematical reasoning therefore consists in the systematic derivation of consequences from relations that have been stipulated among purely logical subjects. Its necessity does not arise from the intrinsic nature of the elements themselves—since these are propertyless and possess no extra-mental "otherness"—but from the structural relations imposed upon them.

Mathematics may therefore be understood as the systematic study of the pure forms of judgment. It cultivates the determinative power of the mind by refining our capacity to formulate precise conceptual determinations and to deduce their necessary consequences independently of empirical content.

2.2.2 On Philosophy

In apprehension, the mind is related to an other; we may say (following (Atkins, 2008)) that here there is an *ego* and a *non-ego*, and therefore a dyadic encounter. Now the ego establishes its mastery over itself in mathematics, for it relies on nothing more than its pure powers of construction. No recourse is made to an extra-mental other.

Philosophy, on the other hand, "is positive science, in the sense of discovering what really is true; but it limits itself to so much of truth as can be inferred from common experience" (Peirce, 1994, CP 1.184). Thus philosophy acquires its knowledge from common experience, and the emphasis therefore falls on the object as encountered *in experience*—that is, as apprehended content. It thus takes things as they appear, and does not yet concern itself with fine measurements, which, as we said above, are akin to extensions of ordinary sensation. Yet because philosophy concerns the relation between the ego and the non-ego, it presupposes the ego's self-mastery, which is cultivated in mathematics.

Philosophy divides into phenomenology, normative science, and metaphysics. "Phenomenology ascertains and studies the kinds of elements universally present in the phenomenon; meaning by the *phenomenon*, whatever is present at any time to the mind in any way. Normative science distinguishes what ought to be from what ought not to be, and makes many other divisions and arrangements subservient to its primary dualistic distinction. Metaphysics seeks to give an account of the universe of mind and matter." (ibid., CP 1.186).

We see therefore that the three broad branches of philosophy concern the relation between mind and object, or between the ego and the non-ego. Phenomenology treats this relation in its Firstness, considering the phenomenon simply as it appears, in its pure suchness.

Normative science considers the relation in its Secondness, where the ego encounters the non-ego as resistant or problematic, and thus the relation becomes one of tension or opposition. The mind must therefore determine what ought to be done in response to what is encountered, so that the normative sciences concern what ought to be and what ought not to be. Peirce divides them into Aesthetics,[5] Ethics, and Logic. Aesthetics studies that

[5]We follow the conventional spelling "Aesthetics," rather than Peirce's "Esthetics."

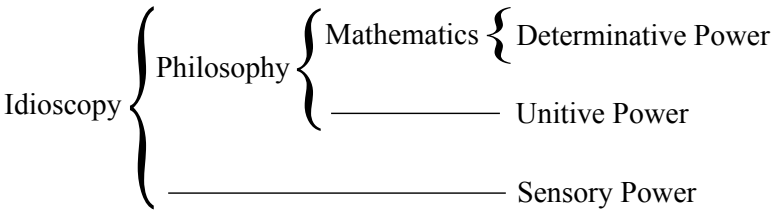

Figure 3: The correspondence between the three classes of science and the three powers operative in esthesis.

which is admirable in itself; it determines the ideal relation between the ego and the non-ego. Ethics concerns the self-controlled conduct required to realize this ideal in action; it thus depends on Aesthetics for determining the *summum bonum* (Peirce, 1994, CP 1.191). Logic, in turn, studies the self-controlled conduct of thought required for attaining truth, and thus "must appeal to ethics for its principles" (ibid., CP 1.191). The normative sciences therefore investigate how the relation between the ego and the non-ego ought to be ordered.

Lastly, there is metaphysics, which considers the relation between the ego and the non-ego in its Thirdness, seeking the lawful principles governing the universe of mind and matter.

Philosophy therefore clarifies the relation between the ego and the non-ego within common experience. Yet the object of knowledge ultimately lies beyond the limits of common experience itself. To grasp it more fully, thought must descend once again into the sensible through the methods of the special sciences.

2.2.3 On Idioscopy

The special sciences take the full machinery developed in mathematics and philosophy and descend back into the sensible domain of extra-mental being, which now becomes the terminus of inquiry.

Thus, whereas in esthesis sensation is the initial moment of cognition, after cultivating science man descends back into the sensible with tools that enable him to grasp more fully the nature of the being that first stimulated his awareness. According to this view, science may therefore be understood as the cultivation of esthesis (Figure 3).

3 Poiesis and Art

Just as esthesis describes the ascent of being into cognition, poiesis describes the descent of conceived forms into actuality through desire and action.

3.1 Poiesis

Let us now examine the process of poiesis. Like esthesis, poiesis features three successive moments in which a power is actualized. Esthesis concerns the passage from extra-mental being into thought, whereas poiesis concerns the inverse relation, from thought to extra-mental being. Specifically, we observe a series of actualizations involved in the production of an object, each such actualization serving in turn as the act for a higher power. The process unfolds in three stages.

The first act requires discussion regarding what I call the *reflective power*, which is in a certain respect the dual of the determinative power, adopting terminology from Kant's theory of judgment.[6] In a determinate judgment the mind subsumes an apprehended object under a concept, thereby determining what the object is. Once this subsumption occurs, cognition reaches a terminus in the discernment of a fact regarding the object. Reflective judgment proceeds in the opposite manner: the mind is presented with a content for which it does not yet have a concept. The task of the mind is therefore not to recognize the object under an already available sign, but to seek a sign capable of expressing what is apprehended. In the present account, the contents presented in this way belong to what may be called *mental being*, or *imagination*. The reflective power is stimulated by these imagined contents, and seeks a sign capable of expressing their essence. In this activity the mind passes from an indeterminate awareness of what is imagined toward the articulation of that awareness in a determinate form. The reflective power may therefore be understood as the mind's capacity to articulate imagined contents as expressive signs. Hence, whereas the determinative power terminates cognition by subsuming an object under a concept, the reflective power initiates the movement through which an imagined content strives toward articulation. In poiesis this articulation ultimately aims at realization in extra-mental being.

The actualization produced in this first phase of poiesis is therefore a *sign*, namely the intelligible form of the object to be produced. Now this sign is of the nature of a possibility, something that is able to come to exist as an actual object. But in order for its production to occur, its existence must be considered desirable.[7] Hence the sign becomes the act by which the *appetitive power* is exercised, forming either a positive, negative, or neutral evaluation, according to whether the mind wants, does not want, or is indifferent to the existence of the object. If the result is the determination of the possibility as a good, it will produce a *desire*. Finally, the desire is brought into relation with the *volitional power*, the faculty of action, and through this power the mind brings the desired possibility into effect. The action is thus the final act by which the sign becomes incarnate in extra-mental being. The genesis of production therefore proceeds through three successive phases, as

[6] See Kant's distinction between determinative and reflective judgment in the Introduction to the *Critique of the Power of Judgment*, especially §V (Kant, 1790/2000).

[7] Compare Aquinas's account of appetite as moved by the apprehended good in (Aquinas, 1920, I–II, q. 8, a. 1).

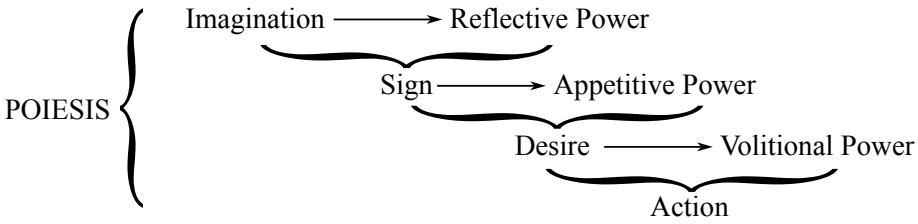

Figure 4: The three moments of poiesis: signification, desire, and action.

depicted in Figure 4.

In reflection the mind formulates an imagined content into a sign expressing the essence of the object to be produced. In desire this sign becomes the object of the appetitive power, which evaluates its existence as good and thereby inclines the mind toward its realization. In action the volitional power brings this desire into effect, producing the object in extramental being.

3.2 Art as the Cultivation of Poiesis

If the scheme of poiesis describes the initial process by which we come to act upon reality, there remains, as in the case of esthesis, the further question of how this activity may be cultivated. It is natural to suppose that such cultivation consists in the refinement of the powers involved in this process. We first consider in what the cultivation of these respective powers consists. We then propose a classification of the arts.

In poiesis the first act arises from the reflective power, which formulates the contents of imagination into an expressive sign. The cultivation of this power therefore consists in the refinement of *expression*: the ability to articulate imagined contents in a sign that adequately expresses their essence. In this respect it bears a certain analogy to mathematics, the first of the sciences, since both concern the formation of intelligible structures prior to their application to any particular object of experience. More specifically, it resembles that activity of mathematics which consists in formulating definitions that adequately express a general idea, such as the manner in which the definition of a topological space expresses the general idea of *continuity*.

The second act arises from the appetitive power, which evaluates the essence expressed in the sign and determines whether its existence as an object ought to be desired. The cultivation of this power therefore consists in the refinement of *taste*, insofar as it concerns the ordered relation between what we conceive and our commitment to its realization. In this respect it corresponds most closely to the normative sciences within philosophy, especially aesthetics, which investigates the proper ordering of the relation between the ego and the non-ego.

The final act arises from the volitional power, which brings the desired essence into existence through action. Its cultivation therefore consists in the refinement of *craft*, the capacity to realize an intended object through skillful activity. The terminus of an action is some state of extra-mental being. For instance, if I hammer a nail into a wall, the result is a change in extra-mental being; and if my action is ordered toward the realization of a determinate form, its terminus is the production of an object possessing that form. In this respect it corresponds to the special sciences, which ultimately terminate inquiry in the determination of extra-mental being. Yet whereas the special sciences *represent* extra-mental being, action *produces* extra-mental being.

From this correspondence we may therefore derive a natural classification of the arts analogous to the classification of the sciences.

First, there are the *fine arts*, which arise primarily from the cultivation of the reflective power. Their proper end is the production of expressive signs, such as poems, paintings, and musical compositions, in which the contents of imagination are articulated symbolically. A poet, for example, need not consider whether the general essence signified in the poem would constitute a desirable state of affairs in actuality; otherwise poetry would collapse into propaganda or moral instruction. Rather, the fine arts strive toward the adequate expression of an essence, and therefore have as their end a *sign*.

Second, there are the *practical arts*, which depend upon general signs (and thus upon the reflective power) that represent their objects, but realize such signs as objects suitable to a given need or desire. For instance, the chair-maker depends upon the concept of a chair—an idea that must first be expressed as a general sign with the aid of the reflective power—which is then recognized as an object worthy of realization. The practical arts therefore concern the determination of which possibilities (general signs) ought to be realized and the design of objects that embody those possibilities. Architecture, design, and the various crafts belong to this domain, insofar as they aim at the production of objects that instantiate a conceived form that satisfies a given need. The practical arts therefore have as their end an *object*.

Finally, there are the *performing arts*. Their proper activity consists in the interpretation of signs through action, whereby the object signified becomes actual through performance. Music performance, theater, and dance belong to this domain, for in these arts the interpretation of a sign produces the object itself. They depend upon signs generated by the reflective power, and upon the appetitive power, which regards the realization of such signs as good. Most important, however, is the cultivation of action, for this concerns the adequate realization of the sign as an object. The performing arts therefore have as their end the *interpretation of a sign*. For instance, in the performance of a musical work, the score is a sign and the performance is its interpretation, which realizes it as an object—that is, the physical sounds that occur at a given place and time.

We may therefore say that the three classes of art correspond to the three moments of

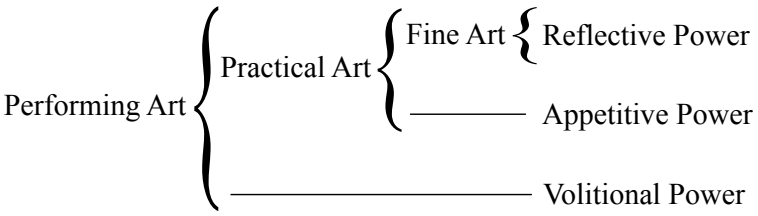

Figure 5: The correspondence between the three classes of art and the three powers operative in poiesis.

poiesis, and thus to the three terms of a sign:[8]

1. Fine art produces *signs*.
2. Practical art produces *objects*.
3. Performing art produces *interpretants*, that is, the living realization of a sign as an object through action.

According to this view, art may therefore be understood as the cultivation of poiesis (Figure 5).

4 The Complete Cycle of Esthesis and Poiesis

We have now viewed esthesis and poiesis separately, and showed their relations to the sciences and the arts, respectively. At this point, we return to the earlier claim that esthesis and poiesis are two moments within a single cycle through which human beings receive reality into intelligibility and then act upon reality.

Now we may observe a further duality. When the two movements, esthesis and poiesis, are viewed together, a series of structural correspondences becomes apparent. The determinative power subsumes apprehended contents under a general concept, whereas the reflective power seeks to articulate imagined contents in expressive signs. The two therefore stand in a dual relation. In the former case the concept already exists and is applied to apprehended contents, producing a judgment or comprehension that asserts a fact. In the latter case the concept does not yet exist but must be articulated through reflection; the resulting sign therefore expresses a possibility rather than a fact. Thus the determinative power applies a concept, whereas the reflective power gives rise to one.

Likewise, the unitive power stands in a dual relation to the appetitive power. An apprehension is an instance of unity with an object, so that the actualization of the unitive

[8]For the canonical formulation of the sign relation, see (Peirce, 1994, CP 2.228).

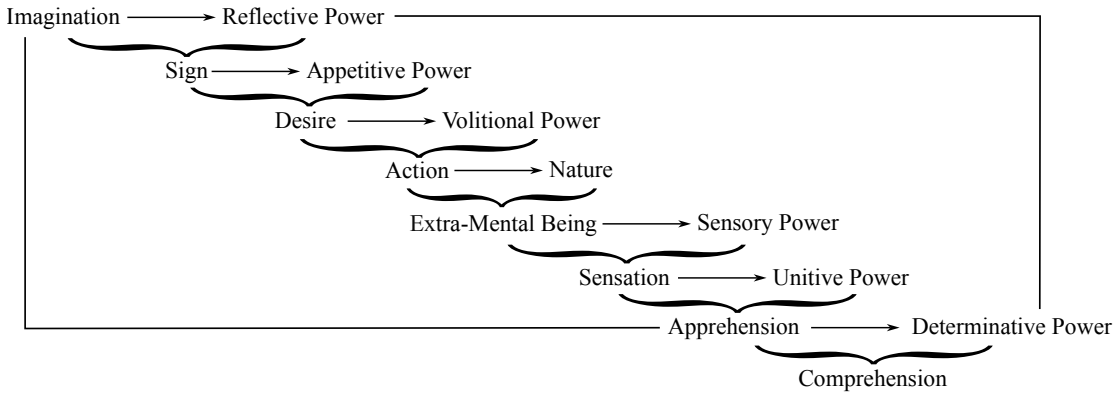

Figure 6: The complete cycle of esthesis and poiesis. Extra-mental being occupies the center of the circulation: esthesis describes the ascent from thing to mind, while poiesis describes the descent from mind to thing.

power results in the presentation of an object as a unified thing. The appetitive power, by contrast, evaluates a conceived possibility with respect to its goodness and thereby commits the agent to its realization. Thus, whereas apprehension establishes unity with an object as it is given, desire establishes a commitment to unity with an object that is yet to be realized.

Finally, the sensory power stands in a dual relation to the volitional power. Sensation is a compulsion of the body by an external object, whereas action is a free self-moving of the body toward the realization of an object.

This deeper analysis of the structural correspondences between esthesis and poiesis reveals their fundamental duality, and thus the complementary ways in which human beings participate in reality. In esthesis, the mind is affected by an extra-mental being, and cognition arises through the compulsion exerted by something that is other than the self. In poiesis, by contrast, the mind originates action from within itself, ultimately realizing conceived forms through action. In this respect the two movements correspond broadly to what Kant describes as the domains of nature and freedom. Within Peirce's framework, the former bears the character of Secondness, insofar as it involves reaction to an external other, while the latter bears the character of Firstness, insofar as it originates in possibility and self-initiated activity.

The complete structure of the circulation of esthesis and poiesis is represented in Figure 6. What is added here is that action, when brought into relation with nature, produces extra-mental being, which in turn initiates the process of esthesis. Extra-mental being thus occupies the center of the cycle. Poiesis describes the passage from mind to thing, whereas esthesis describes the passage from thing to mind.

The cyclical character of this relation may be understood in the following way. The determinative power presupposes the accumulation of concepts that have been articulated through the reflective power in experience; that is, before the mind possesses a concept for a certain kind of thing, it must draw upon experience in order to synthesize a concept adequate to that kind. In this way the determinative power arises from the prior activity of the reflective power. Likewise, imagination arises from the accumulation of apprehended unities produced by the unitive power. The mind cannot form imagined contents unless it has first encountered sensory contents that have been synthesized into apprehended objects. Thus the possibility for imagination—which is the initial point of poiesis—remains rooted in the experiences furnished by the senses, whereas comprehension—the terminus of esthesis—presupposes the mind's capacity to articulate the concepts that the determinative power ultimately employs.

5 Conclusion

This paper has argued that human participation in reality unfolds through a circulation between *esthesis* and *poiesis*. Esthesis describes the ascent of extra-mental being into intelligibility, whereas poiesis describes the descent from intelligibility into extra-mental being through desire and action. Each process may be articulated as a movement with three moments. Esthesis proceeds from sensation to apprehension and finally to comprehension; poiesis proceeds from signification to desire and finally to action. Together these processes describe the reciprocal movement through which human beings both receive reality into cognition and act upon it in the world.

From this structure there follows a natural classification of the sciences and the arts. Science may be understood as the cultivation of the powers operative in esthesis, refining the capacities through which reality becomes intelligible to the mind. Art, by contrast, may be understood as the cultivation of the powers operative in poiesis, refining the capacities through which conceived forms are realized. In this way the principal divisions of the sciences and the arts arise from the deeper structure of these two fundamental movements of cognition and action. The classification of the sciences thereby sheds light on Peirce's architectonic, while the classification of the arts corresponds to the three components of the sign relation: sign-vehicle, object, and interpretant.

Finally, we saw that esthesis and poiesis are not merely parallel processes but reciprocal ones. Science concerns the understanding of nature, whereas art concerns the realization of freedom; yet both meet in the actual. Extra-mental being is the origin of esthesis and the terminus of poiesis. Moreover, some of the powers operative in one domain presuppose the activity of the other: imagination, which initiates poiesis, depends upon the apprehended contents furnished through esthesis, while comprehension, which terminates esthesis, presupposes the reflective activity through which concepts are articulated. There is thus a fundamental unity in human life, which is at once receptive to nature and productive

through freedom.

The present account therefore offers a framework for understanding science and art as complementary cultivations of the powers through which human beings participate in reality. Further inquiry may elaborate the internal divisions of the arts and the deeper interrelations between esthesis and poiesis, especially insofar as the production of knowledge involves acts of will, while artistic creation requires an understanding of how actions realize conceived forms. Such investigations would continue the effort begun here to clarify the structure of human cognition and action within the single circulation through which human beings both understand reality and bring new forms of being into existence.

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