

Making the knowledge profile of C. S. Peirce's concept of esthetics¹

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Abstract

The article aims to make a knowledge profile of C. S. Peirce's (1939–1914) concept of esthetics. Peirce placed esthetics in the normative sciences alongside ethics and logic. By placing esthetics within the normative sciences in his classification of the sciences from 1902, Peirce also defined esthetics as a theoretical science, as a science of discovery, and as a part of philosophy. We believe that the placement of esthetics in the classification of the sciences contains the key to understanding the Peircean version of esthetics as a unique and useful scientific method. Indeed, by drawing a knowledge profile of esthetics, we seek to make a thorough definition of esthetics that will form the basis for further investigations into this matter.

Introduction

... it is tempting to speculate what a 'Peircean aesthetic' might have been like. But going beyond idle speculation involves a task that has been likened to the work of the palaeontologist who, from bones picked up here and there, reconstructs the skeleton of an animal never seen by human eyes. (Smith 1972: 21)

No doubt that the level of abstractness and complexity in Peirce's concept of *esthetics* makes it very hard to define let alone to understand. In addition, the places where Peirce discusses and defines esthetics are scattered around his entire oeuvre as indicated by Smith and sometimes seems contradictory. Indeed, this does not help our task of defining this concept. However, if we take a closer look at Peirce's writing, he made the task of understanding esthetics considerably easier for us, when he found a place for it in his classification of the sciences. As we shall see and discuss, Peirce places esthetics in the field of normative sciences. Moreover, the normative sciences (also containing ethics and logic) are placed within

philosophy, which again is placed within the sciences of discovery, and the sciences of discovery are contained in the theoretical sciences. Even though, Peirce worked with the classification of the sciences in his late philosophy, there still exists around 20 different drafts and there may even be more in the non-published works.² However, we have chosen to base our understanding of esthetics on the classifications dating from 1902 and 1903 since these drafts seem the most complete and coherent and they also support each other. We also choose these drafts because Peirce, at this time in his career, was dealing with the development of the doctrine of pragmatism containing the ethics of terminology and he was very much occupied with clarifying the definitions of his theories. Indeed, we believe that Peirce's classification of the sciences is one of his biggest scientific achievements resulting from his work with pragmatism. The classification of sciences is an example of how to make scientific ideas clear. Therefore, in order to identify the core meaning of Peirce's esthetics, we have to discuss the placement of esthetics in the classification of the sciences. We will investigate the consequences of classifying esthetics as a normative science. Consequently, we will be knowledge profiling esthetics.

The knowledge profile³

When drawing a profile of someone or something, the aim is to outline the most distinct features of the object so that the profile matches the object it represents in a way that makes us able to identify the relation between the profile and the object. If the object is a profile of a head, the hair or the nose, the chin, the forehead, the glasses, etc., could be the most distinctive parts and therefore the most interesting parts to reconstruct. Figure 1, illustration A exhibits the profile of a head. In illustration B, a reconstruction of the profile has been made.

To make a profile is to reconstruct the object on the basis of its distinctive features. In semiotic terms, the reconstruction (illustration B) is an iconic representation of the illustration A. However, illustration A is a frozen picture of a profile of a living man. Its dynamic object exists and alters all the time, e.g. through aging, mimics, gestures, etc. However, illustration A is static, and the reconstruction of the profile (illustration B) is also static. This is problematic as both the representation (A) and the representation of the representation (B) are static, and the object (the living person) is dynamic. The dynamic object might die, but still there would be an iconic connection between A and B in the figure. These illustrations are forever connected, and the sign is independent of the

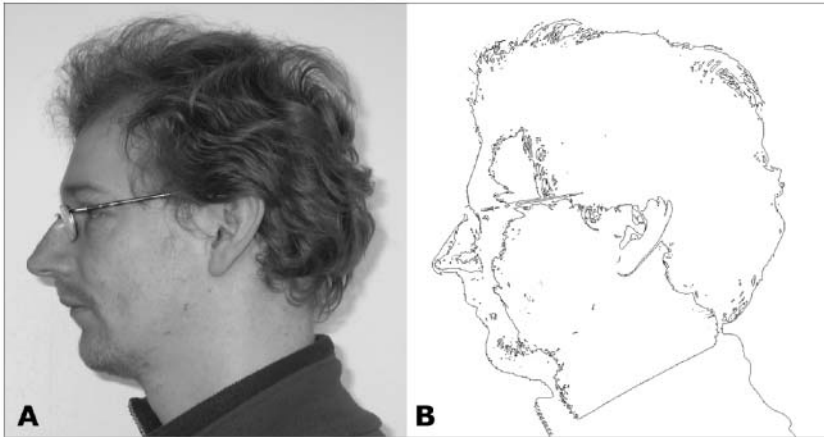


Figure 1. Illustration A shows the profile of a person, and in illustration B, this profile has been reconstructed. A profile has to share similarities with the object it represents. In the figure, we can see the similarities between illustration A and illustration B. The distinctive features are the dominant nose, the recessive chin, and the forehead. Based on these features, it is possible to positively identify illustration B as representing illustration A. Another important point is that the contour (illustration B) cannot reveal all features of illustration A. The same must be assumed when knowledge profiling scientific theories, concepts, knowledge domains, etc. We must assume that we are able to identify the distinctive features of, for example, a scientific concept, and from there we reconstruct its knowledge structure. Indeed, we are able to do so when using the epistemological basis to draw our knowledge profile of a given scientific concept. Hence, in this case the foundation of Peirce's esthetics is its placement in the classification of the sciences.

dynamic object. Moreover, the sign in Figure 1 is capable of creating its own dynamical object by referring to an idea of someone who could fill out the contour even though the person may have died. However, to make a knowledge profile of a scientific concept is much more difficult. The major question is: what are the distinctive features of a scientific concept? First, let us rename *distinctive features* to *epistemological qualities*. In this way, we wish to put focus upon the knowledge tradition within which the concept is developed since it is our belief that this tradition puts interpretative constraints upon the concept. Consequently, the most important features of the concept are its epistemological qualities. When dealing with Peircean semiotics, such epistemological qualities could be: objective idealism, extreme scholastic realism (ESR), fallibilism, phaneroscopy synechism, etc. These are qualities that constrain and determine the meaning of the concept. When dealing with the sign in the Peircean tradition, we cannot rule out these epistemological qualities. Consequently, these qualities also separate concepts from other concepts.

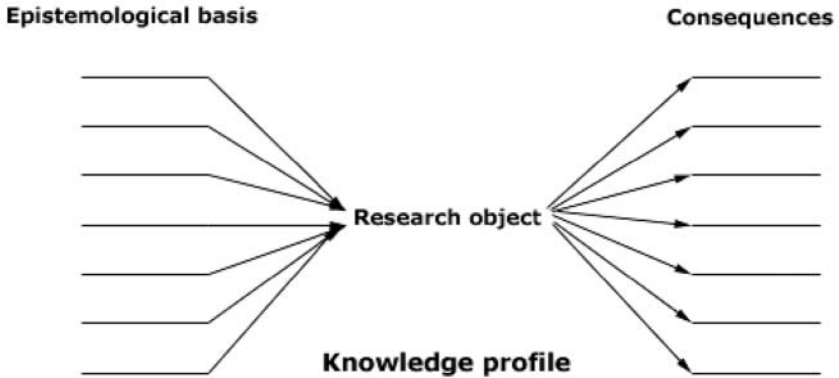


Figure 2. *The idea of the knowledge profile is to identify the most precise level of the epistemological basis, starting with the most general level and ending with the most precise level. The same goes for the consequences.*

Peircean semiotics contains different epistemological qualities compared to, for example, Saussurean sémiologie.⁴ So, during the knowledge profiling of esthetics, we already have a number of epistemological qualities at our hand. Adding them to the placement of esthetics in the classification of the sciences, we believe we may have a rather complete picture of esthetics. However, before applying the knowledge profile to esthetics, let us briefly define the content of the knowledge profile.

The knowledge profile consists of three basic elements: the epistemological basis, the consequences of this basis, and a knowledge map. Indeed, we will focus upon the epistemological basis and the consequences of this basis. The knowledge map is a diagrammatic representation of the classification of the sciences originating from 1902 (see Figure 2).

The epistemological basis

The epistemological basis of the knowledge profile is the sum of theoretical choices used to, for example, solve a given problem or analyze a given research object.

We use the following six-step method:

First: Draw the knowledge profile of your concept, your project, or your knowledge domain by identifying its epistemological basis and by identifying the consequences of this epistemological basis. (Use Figures 1 and 2 as inspiration.) Figure 3 shows the model of the knowledge profile.

Second: Start by writing the name of your research object (the concept, the problem, the knowledge domain) in the middle.

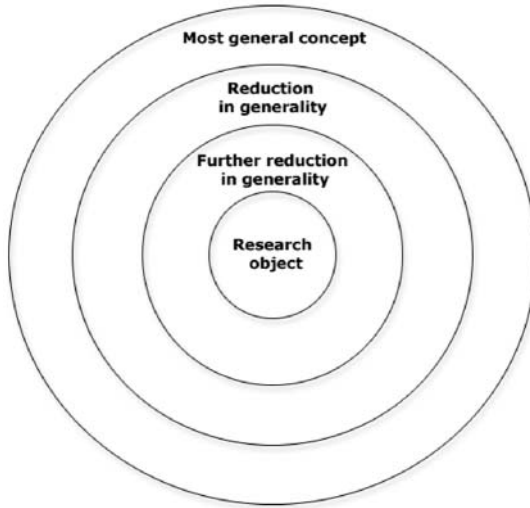


Figure 3. *The diagrammatic knowledge profile*

Third: Consider what theoretical basis you will unfold upon the research object; find the most general state and write it in the outer circle. This is the most general mode of the theory. In the case of esthetics, this level is *theoretical science*.

Fourth: Consider how to sharpen this general mode by prefixing or suffixing terms to the concept. In the case of the esthetics, *theoretic science is sharpened by science of discovery*. This is the second circle.

Fifth: Consider whether you can narrow the concept even further, e.g. by using a sub theory that reduces the knowledge potential of the concept or use another theory that may make your concept or project become more precise. *In the case of esthetics, the string of words is: theoretical sciences — sciences of discovery — philosophy*. This is the third circle.

Sixth: Consider whether you need to narrow your concept even further, or whether you are ready to identify consequences of your concept. *In the case of esthetics, the string of words is: theoretical sciences — sciences of discovery — philosophy — the normative sciences*. This is the fourth circle. Consequently, we get the epistemological basis shown in Figure 4.

We return to the knowledge profile of esthetics later in the article where we thoroughly discuss the epistemological basis and its consequences. However, before we begin this discussion, we need to have basic knowledge about the Peircean version of esthetics. So, let us take a closer look at esthetics.

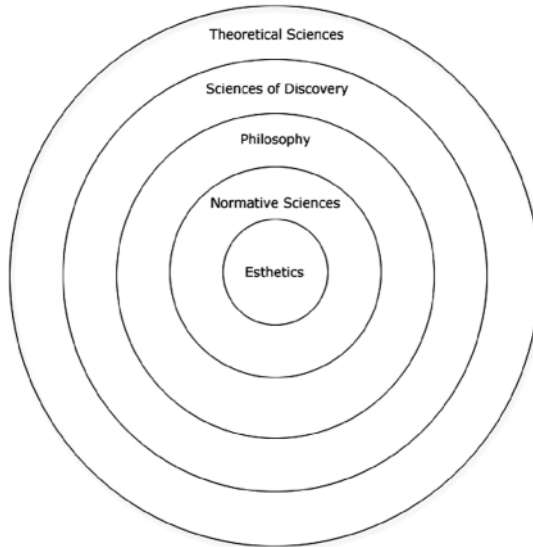


Figure 4. According to Peirce, theoretical science is the most abstract level. Still, it provides epistemological qualities to esthetics. Science of discovery narrows the definition of esthetics. Science of discovery is narrowed by philosophy, and philosophy is narrowed by normative science.

A brief introduction to Peircean esthetics

In 1855, Peirce had his first acquaintance with esthetics. Along with his friend Horatio Paine, he made in-depth studies of *‘Briefe über die ästhetische Erziehung des Menschen’* by Friedrich von Schiller (1759–1805). Fifty years later, he made a remark concerning this important work in one of his many letters to the English philosopher Lady Welby (1837–1912) *‘it made so much impression upon me as to have thoroughly soaked my notion of ‘play’ to this day’* (SS. 77 and MS: 310). However, Peirce’s own investigations into the matter of esthetics started late in his philosophical career, around 1902 (cf. Barnouw 1994: 155). Peirce did in fact refer to himself as *‘a perfect ignoramus in aesthetics’* (CP 5.111). And, as H. Parret writes: *‘He (Peirce) never systematized any aesthetics reflection nor did he write extensively on it’* (Parret 1995: 179). Indeed, Parret’s point is very hard to dismiss (cf. e.g. Hocutt 1962: 157; Smith 1972: 21; Anderson 1984: 3–4; Winner 1994: 277). However, in *A Detailed Classification of the Sciences* (1902), Peirce points out the place of esthetics in the field of science, and in *An Outline Classification of the Sciences* (1903), he makes a coherent definition. In this definition, the most important feature

is this: Esthetics is 'the science of ideals, or of that which is objectively admirable without any ulterior reason' (CP 1.191). Our investigation into Peirce's version of esthetics takes its starting point in this definition, and in the following, we will briefly touch upon the conceptual basis of esthetics, its purpose, and its object.

As mentioned in the introduction, Peirce places his version of esthetics in the classification of sciences, and to be more specific he places it in the sub-order of normative sciences. In the following, we discuss Peirce's motivation to create the classification of the sciences and the consequences of placing esthetics in the sub-order of normative sciences. We believe that the placement of esthetics in the classification of the sciences will indeed provide us with great insight into the Peircean version of esthetics.

The background for the classification of the sciences

In 1903, Peirce formulated *An Outline Classification of the Sciences*. This classification was the final classification, and we take our point of departure in this definition of esthetics. However, we incorporate the schematic and conceptual basic elements from the classification from 1902.

In the classification from 1903, the normative sciences, which are esthetics, ethics, and logic, are the central part of philosophy. We shall try to discuss the classification lending the placement of esthetic our greatest interest. We believe that the placement of esthetics in this classification submits lots of information about Peircean esthetics. However, as the classification shows, it is primarily a descriptive analysis of aesthetics. The placement does not unveil the qualities of Peircean esthetics. To get a better understanding of the specific qualities of Peircean esthetics, we also use the prolegomena to *A Detailed Classification of the Sciences* (1902). This is one of the most important places in Peirce's writing regarding the classification of the sciences. In the following, we concentrate upon the classification.

Peirce's classification of the sciences

Peirce starts *An Outline Classification of the Sciences* in the following way:

This classification, which aims to base itself on the principal affinities of the objects classified, is concerned not with all possible sciences, nor with so many

branches of knowledge, but with sciences in their present condition, as so many businesses of groups of living men. It borrows its idea from Comte's classification; namely, the idea that one science depends upon another for fundamental principles, but does not furnish such principles to that other. (CP 1.180)

As it occurs in *A Detailed Classification of the Sciences*, science is, according to Peirce, '*a pursuit of living men*' rather than '*systematized and established knowledge*' (CP 1.232). Therefore, he classified the sciences corresponding to the different groups of scientists. Peirce understood these groups as natural classes. According to Peirce, a natural class is '*a class of which all the members owe their existence as members of the class to a common final cause*' (CP 1.205). Furthermore, Peirce described the natural class in the following way:

Every class has its definition, which is an idea; but it is not every class where the existence, that is, the occurrence in the universe of its members is due to the active causality of the defining idea of the class. That circumstance makes the epithet natural particularly appropriate to the class. (CP 1.214)

In this way, Peirce gave potency to the idea. According to Peirce, the idea has '*life, generative life*' (CP 1.219). Returning to the natural class of scientists, this may become a bit clearer. A member of a given class of scientists is able to be a member only due to a given idea of science; this idea creates the scientist, not the other way around. Thus, ideas have '*a power of finding or creating their vehicles, and having found them, of conferring upon them the ability to transform the face of the earth*' (CP 1.217). Indeed, this may sound like pure intellectualism, but Peirce clarifies the definition by adding:

Do I mean that the idea calls new matter into existence? Certainly not. That would be pure intellectualism, which denies that blind force is an element of experience distinct from rationality, or logical force ... What I mean by the idea's conferring existence upon the individual members of the class is that it confers upon them the power of working out results in this world, that it confers upon them, that is to say, organic existence, or, in one word, life. (CP 1.220)

The idea of science gives life to the single members of the natural class of scientists, of course, not a life in flesh and blood but life as scientists. The idea makes them tend (because the idea acts like a *causa finalis*) to act like scientists ought to act, in Peirce's words: it makes them point '*... the bow upon truth, with intentness in the eye, with energy in the arm*' (CP 1.235).

Based on this, Peirce tried to formulate 'the true and only' (CP 2.204) classification of the sciences. Of course, Peirce was well aware that new sciences could occur in time and sciences could disappear making the classification in need of being rearranged. However, the principle of the classification will remain the same. This principle is A. Comte's (1798–1857) principle that sciences depend upon each other. Based on this principle, Peirce organized the sciences in a hierarchy, where the placement of the single science refers to the level of abstractness of its objects. The higher the level of abstractness is in the object, the more fundamental place the science receives in the hierarchy. In connection to this, 'each science [when it has to do with general principles] draws regulating principles from those superior to it in abstractness, while drawing data for its inductions from the sciences inferior to it in abstractness' (CP 3.427). This means that as soon as a science has been placed in the classification, it will be clear what kind of science it is; furthermore, it will be clear from which sciences it should receive regulative principles and which sciences it may draw upon when it comes to research objects. This also applies for esthetics. In Figure 5, we see an excerpt of the classification dating from 1902.

The classification seems to function as a way of sharpening the concepts. As we can see, the movement in the classification goes from the

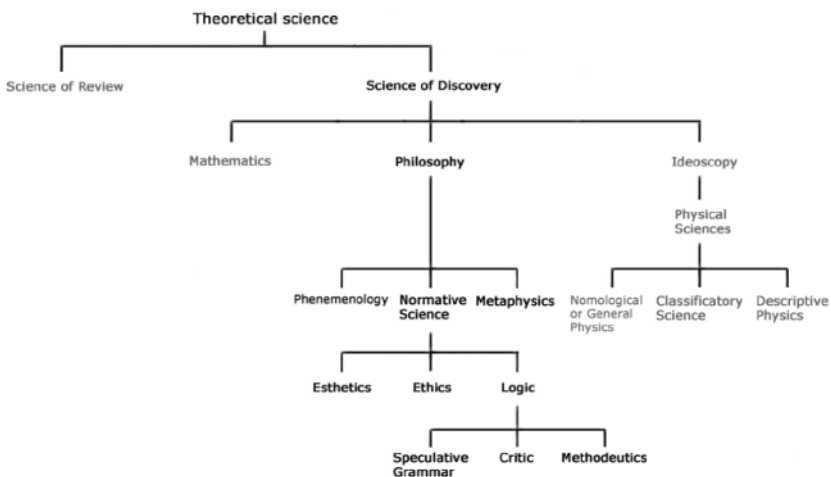


Figure 5. This is an excerpt of the classification from 1902. However, our discussion of esthetics as the objectively admirable in itself is based upon the classification from the 1903 A Syllabus of Certain Topics of Logic. Concepts written in gray are of less importance to our errand.

most abstract level (theoretical sciences) and becomes more specific as it develops. The classification is divided into branches, sub-branches, classes, subclasses, orders, sub-orders, families, and sub-families. Esthetics is placed in the sub-orders among the normative sciences. Esthetics is the first sub-order of the normative sciences. Esthetics belongs to the class of philosophy, is a sub-branch of sciences of discovery, and must be a theoretical science. This gives us the following order, in a straight line: Starting from the most general level esthetics is a theoretical science, is a science of discovery, belongs to philosophy, and is the first sub-order of the normative sciences. This means that we must clarify the following questions (below every question, we suggest a short answer that is further elaborated upon later in the article):

1. What does it mean that esthetics belongs to the branch of theoretical sciences?
 - It means that esthetics is in search of the truth of the objectively admirable.
2. What does it mean that esthetics belongs to the sub-branch of sciences of discovery?
 - It means that esthetics is in search of new truths about the objectively admirable.
3. What does it mean that esthetics belongs to the class of philosophical sciences?
 - It means that esthetics is in search of the truth of the objectively admirable, which can be deduced from what is in the ordinary experience.
4. What does it mean that esthetics belongs to the order of normative sciences?
 - It means that esthetics is in search of what one ought to but not what one has to be ready to admire for its own sake.
5. What does it mean that esthetics is the first of the normative sciences?
 - It means that ethics and logic depend upon esthetics.

The placement of esthetics in the classification of the sciences provides us the following knowledge profile for esthetics, and it is the epistemological basis and its consequences (the short answers posed above) that we discuss in the following sections.

As it can be seen from the classification of the sciences, esthetics, as a normative science, implies the Peircean variant of phenomenology, which is phaneroscopy. And, before we can discuss these questions and short answers, we have to make a digression to the phaneroscopy because, before applying an esthetic investigation of what we ought to be ready to

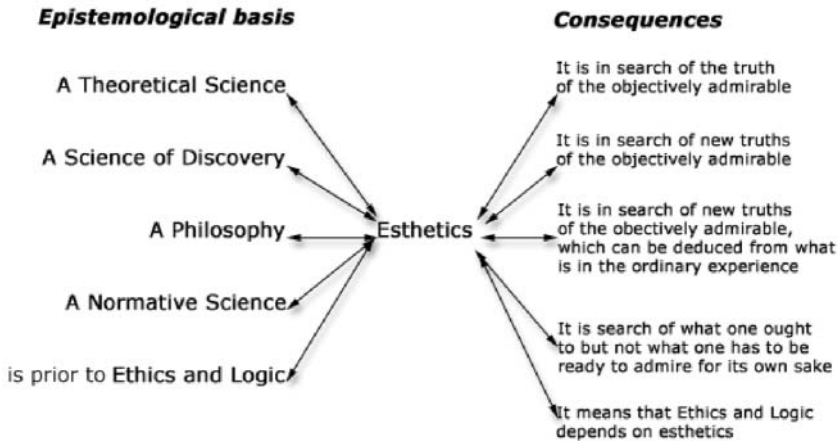


Figure 6. *The knowledge profile for esthetics*

admire, we must apply a science that justify this errand, a non-prejudice science that does not establish distinctions between what ought to be and what is, what is true and what is false, what is real and what is unreal, etc., but simply without any assumptions contemplates what appears in its immediateness, this science is *phaneroscopy*. Let us briefly touch upon this science.

In *Lectures on Pragmatism* (1903), Peirce defines the relation between phaneroscopy and normative science in the following way:

But before we can attack any normative science, any science which proposes to separate the sheep from the goats, it is plain that there must be a preliminary inquiry which shall justify the attempt to establish such dualism. This must be a science that does not draw any distinction of good and bad in any sense whatever, but just contemplates phenomena as they are, simply opens its eyes and describes what it sees; not what it sees in the real as distinguished from figment — not regarding any such dichotomy — but simply describing the object, as a phenomenon, and stating what it finds in all phenomena alike. This science of Phenomenology . . . must be taken as the basis upon which normative science is to be erected, and accordingly must claim our first attention. (CP 5.37–39)

Phaneroscopy

In *Adirondack Lectures* (1905), Peirce defines phaneroscopy in the following way:

What I term phaneroscopy is that study which, supported by the direct observation of phanerons and generalizing its observations, signalizes several very broad classes of phanerons; describes the features of each; shows that although they are so inextricably mixed together that no one can be isolated, yet it is manifest that their characters are quite disparate; then proves, beyond question, that a certain very short list comprises all of these broadest categories of phanerons there are; and finally proceeds to the laborious and difficult task of enumerating the principal subdivisions of those categories. (CP 1.286)

Thus phaneroscopy is the study of the phaneron (the phenomenon), by which Peirce meant: *'The collective total of what is in any or any sense present to the mind, quite regardless of whether it corresponds to any real thing or not'* (CP 1.284). However, not all elements in the phaneron are being studied, only the elements, which are indecomposable (CP 1.288). These indecomposable elements exemplify the most basic universal categories (a short list: cf. Hausmann 1993: 10). According to Peirce, the numbers of categories are three and only three (CP 1.418; 1.292; cf. Dougherty 1983: 170) He labels them Firstness, Secondness, and Thirdness (CP 1.421). By using Firstness, Secondness, and Thirdness, Peirce wishes to refer to different relational features, which solely depend upon the level of the study of the phaneron. Thus, it follows that the description of phanerons can only be from a study of structure (CP 1.288). Peirce described the categories as irreducible yet depending upon each other (cf. Potter 1997: 14). As the names of the categories suggest, they define a hierarchy: the category of Thirdness implies the category of Secondness (and indirectly the category of Firstness), and the category of Secondness implies the category of Firstness (CP 1.353; cf. Hartshorne 1983: 80, Jappy 2000: 6⁵). However, it is important to make clear that the categories can be abstracted from each other in the following order: Firstness can be abstracted from Secondness, and Thirdness and Secondness can be abstracted from Thirdness (CP 1.353).

Firstness is defined as a potential of being; and to Peirce it is a primary ontological category denoting possibility, unqualified generality, and monadic reality. Firstness is monadic qualities/predicates, immediate sense qualities — simple and non-compound forms and feelings, and potentiality of being. It is what it is without reference to anything else. Examples of monadic qualities are red, bitter, tedious, hard, heartrending, and noble, which are all qualities of things and events. The examples of Firstness have to be understood as examples, because when writing 'red' or 'heartrending', etc., Firstness already relates to something else, thus it is no longer Firstness. To Peirce, Firstness is latent and vague, and just as importantly, Firstness is contained both in the external and in the internal

world. Firstness exists by virtue of itself, *sui generis*, independent of anything. Because of this monovalent relation, Firstness is called monadic. A pure monad is a quality, which in itself is without parts, without any features, and, furthermore, it is not embodied. (The section is based on the following paragraphs in CP 1.25, 1.302–1303.)

Peirce defines Secondness as a dyadic relation between the sign and its object. The relation is dyadic, i.e. something 'else' exists as a binary entity to something 'first'. Peirce often uses the following example: to a force — a counter force exists, to will — corresponding unwillingness, etc. The relation between Firstness and Secondness is dyadic in the sense that the quality in itself does not constitute the fact but is tied to the fact. Secondness is the relation between sign and object but without any conception of the relation. If we had conceived the relation, we would be in Thirdness. Peirce defines the relation between Firstness and Secondness as a law of nature (Thirdness) and the cases to which the law applies (Secondness): '*... it is with any law of nature. Were it but a mere idea unrealized — and it is of the nature of an idea — it would be a pure first. The cases to which it applies, are seconds.*' (CP 3.342) Therefore, Firstness exists latently in the world but in order to be manifested, it has to become Secondness. For the Qualisign to be manifested, it must be carried by a Sinsign or an Icon, which are both signs of Secondness.

Thirdness is defined as the category for generality, comprehensibility, rationality, and regularity. The concept 'force of habit' is central to Peirce, as he suggests that natural laws are manifestations of habit-formation in nature. Thirdness is the mediator between Firstness and Secondness. Thirdness completes the triad, and the triad signifies the triadic relation. The triadic sign is thus more than merely a binary relation, and the triad is non-reducible. In the fragment 'Third' (1875), Peirce describes the relationship between Thirdness on the one hand and Firstness and Secondness on the other hand in the following way:

By the third, I mean the medium or connecting bond between the absolute first and last. The beginning is first, the end second, the middle third. The end is second, the means third. The thread of life is a third; the fate that snips it, its second. A fork in a road is a third, it supposes three ways; a straight road, considered merely as a connection between two places is second, but so far as it implies passing through intermediate places it is third. (CP 1.337)

The most important feature of Thirdness is its tendency to form habits '*such that on a certain occasion a man will be more or less apt to act in a certain general way*' (CP 2.148). It is important to notice that the tendency to form habits is not a feature exclusive to humans. The habit is a

tendency to act in a certain way under certain conditions. A habit has to be manifested in action to have reality (CP 1.304, 5.554). However, habits cannot be reduced to a finite number of actions, because habits contain possible actions. Habits contain a general feature and the general feature refers to the infinite future. As Peirce writes, the past only contains ‘*a certain collection of such cases that have occurred. The past is actual fact. But a general . . . cannot be fully realized. It is a potentiality; and its mode of being is esse in futuro*’ (CP 2.148). A habit is a general rule: under certain conditions, certain action will take place. The habit is at ‘*would be*’, because the habit is conditioning actions, and as a governing principle, it mediates between the pure possibility (Firstness) and the pure actuality (Secondness).

Having defined Peirce’s phaneroscopy, let us return to the questions and short answers given above.

Esthetics as a theoretical science

1. What does it mean that esthetics belongs to the branch of theoretical sciences?
 - It means that esthetics is in search of the truth of the objectively admirable.

Ad 1) Esthetics belongs to the theoretical sciences, alongside the other normative sciences: ethics and logic; they are no less than ‘*the very most purely theoretical of purely theoretical sciences*’, as Peirce stresses in *A Detailed Classification of the Sciences* from the unfinished work *Minute Logic* (1902) (CP 1.281). As a theoretical science, esthetics has to attempt to analyze and define the objectively admirable (cf. CP 1.575). It has nothing to do with any kind of practice or ‘*belief of action*’ (cf. CP 1.635, cf. Stuhr 1994: 7, Braga 2001). Indeed, a theoretical science is a science ‘*whose purpose is simply and solely knowledge of God’s truth.*’ (CP 1.239, cf. 8.143). This means that esthetics is devoted to truth for the sake of truth concerning the objectively admirable as it is expressed in the categories: truth, *sui generis*, in its capacity of Firstness.

According to Peirce, what is true consists in the opinion that all who employ the scientific method will be able to reach an agreement upon if the investigation is carried far enough. However, as Peirce stresses in *Truth and Falsity and Error* (1902): ‘*There would not be any such thing as truth unless there were something which is as it is independently of how we may think it to be. That is the real*’ (CP 7.659). This means that even if truth seems to be determined by the esthetes, who carry out the scientific



Figure 7. *Esthetics as a theoretical science*

method, truth is only possible if there is a reality to which it corresponds, a reality that constrains truth (CP 2.647–57, 658; cf. Rescher 1978; 20). According to Peirce, investigating truth is to investigate facts (cf. Sheriff 1994: 56). Consequently, if the esthetic investigation has to demonstrate that the objectively admirable really is the objectively admirable, the esthetic investigation must formulate positive categorical truths, despite of the fact that esthetics, as a normative science, only poses questions about what ought to be admirable and not what is admirable. However, this can be deduced from categorical facts (cf. CP 5.39, 5.126; Potter 1997: 25–26). But what reasons do we have, in the first place, to assume that there is something real? In the *Fixation of Belief* (1878), Peirce notes:

It may be asked how I know that there are any realities. If this hypothesis is the sole support of my method of inquiry, my method of inquiry must not be used to support my hypothesis. (CP 5.384)

Peirce gives four answers to the question. First:

If investigation cannot be regarded as proving that there are Real things, it at least does not lead to a contrary conclusion; but the method and the conception

on which it is based remain ever in harmony. No doubts of the method, therefore, necessarily arise from its practice, as is the case with all the others. (CP 5.384)

So far, none of the conclusions drawn by the scientific method has proven to be incompatible with it. On the contrary, the scientific method and its conceptual basis seem to be in harmony. Second:

The feeling which gives rise to any method of fixing belief is a dissatisfaction at two repugnant propositions. But there already is a vague concession that there is some one thing which a proposition should represent. Nobody, therefore, can really doubt that there are Reals, for, if he did, doubt would not be a source of dissatisfaction. The hypothesis, therefore, is one which every mind admits. So that the social impulse does not cause men to doubt it. (CP 5.384)

The frustration that occurs in the rational mind when meeting two repugnant propositions is a sign that there must be a state of matters which determines the truthness or falseness of the proportions. Were there no reality, we would forever be in a state of frustration. And even the esthete is not kept in such a state, a state that we can definitely rule out. Third:

Everybody uses the scientific method about a great many things, and only ceases to use it when he does not know how to apply it. (CP 5.384)

As a matter of fact, to some extent, we all use the scientific method. Only when we do not know how to apply it do we cease to use it. Fourth:

Experience of the method has not led us to doubt it, but, on the contrary, scientific investigation has had the most wonderful triumphs in the way of settling opinion. (CP 5.384)

As Peirce writes, the scientific method has not given us reason to doubt it. It has experienced many triumphs in the way of settling opinions. We have reason to believe that it will still be able to do this in times to come.

Scientists, who wish to make true opinions about esthetic matters and who do not deny the existence of a reality, will have to use the scientific method. Even if reality is independent of our thoughts of it, it nonetheless affects our senses:

According to regular laws, and, though our sensations are as different as our own relations to the objects, yet, by taking advantage of the laws of perception, we can ascertain by reasoning how things really and truly are. (CP 5.384)

Experience is the only true teacher of the esthete (cf. 5.50, 5.392, 6.492) and the scientific method, which logical structure consists in ‘*conjecture [abduction]; deductions of predictions from the conjecture; test the predictions by . . . trial [induction]*’ (CP 7.672; cf. 5.170, 5.172, 5.90) (we return to this later), starts and ends with experience (cf. CP 5.16, 2.755): a hypothesis concerning an esthetic matter is stated — however, according to the first of the three cotary propositions, it is not possible to make a clear distinction between perception and abduction (cf. CP 5.181) — experiments are set up, and we carefully make observations in order gradually to confirm or falsify the hypothesis, and thus we reach a fallible conclusion. Therefore, esthetics, as a theoretical science, presupposes the objectively admirable to be a feature of reality (and it is not exclusively related to the human mind) (cf. CP 5.128). Therefore, experience puts constraints upon the esthetical investigation, and true answers to esthetical questions are possible (cf. Parret 1994: 180). To this we add the regulative hope that if the esthetic investigation is carried far enough, true answers to esthetic questions may be formulated (cf. SW: 83); or that a final irreversible, general understanding among the esthetic investigators is possible, or even to put it in a Calvinistic pathological way: ‘*one general agreement, one catholic consent*’ (CP 8.12).

However, this will require that the esthete must be endowed with a number of special characteristics. Obviously, he must be ‘*so deeply impressed with the majesty of truth, as something reasonable . . . which is bound sooner or later to force itself upon every mind*’ (CP 8.136, n. 3). Furthermore, as we compare it to the esthetics that Peirce described in *The Doctrine of Chances* (1878) as ‘*indispensable requirements of logic*’, he has to have an interest in:

An indefinite community, recognition of the possibility of this interest being made supreme and hope in the unlimited continuance of intellectual activity. (CP 2.655)

This means that the esthete must have a sense for what could be called the ‘supreme-individual’. He must have a sense for what is common good, and he must be willing to let his interests merge with a infinite science community, since he believes that the cooperative, rational activity will become widespread in the end. As logic (cf. CP 2.654 ff) esthetics must rest on a social principle.

Naturally, this is a question of a regulative hope; maybe the single esthete will not live long enough to discover the truth, and in principle, the final agreement among esthetes can be put off *ad infinitum*. Thus, the knowledge of the esthete must — as every form of knowledge — swim in

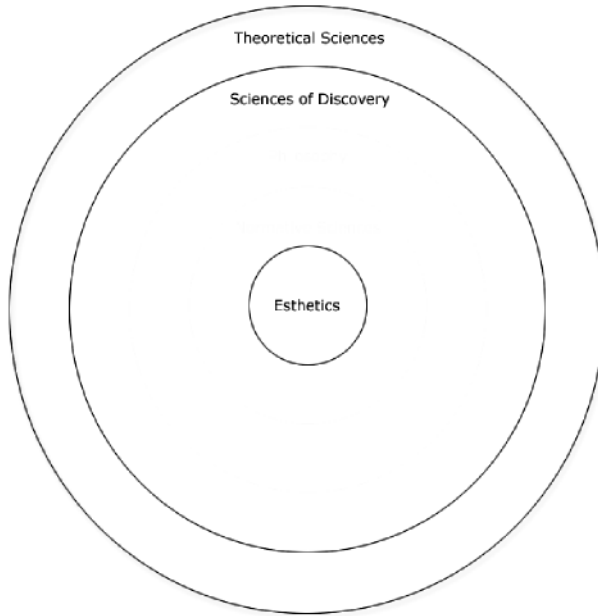


Figure 8. *Esthetics as a theoretical science and as a science of discovery*

'a continuum of uncertainty and of indeterminacy' (CP 1.170; 171–175). As we touch upon later, the esthete must recognize that the generality of the objectively admirable involves a dynamic — an ongoing evolution. Thus, his knowledge will always be in danger of being incomplete and, in every case it will always be fallible. Having discussed esthetics as a theoretical science, let us see what consequences occur when placing esthetics within the sciences of discovery.

Esthetics as a theoretical science and as a science of discovery

2. What does it mean that esthetics belongs to the sub-branch of sciences of discovery?
 - It means that esthetics is in search of new truths about the objectively admirable.

Ad 2) In his *'Peirce's Theory of Science as a Foundation for Pragmatism'*, J. J. Fitzgerald writes the following about the two sub-branches of the theoretical sciences:

The sub-branches of theoretical science are the science of discovery and the science of review. This division is based on a modification of a knower's proposing to seek truth for its own sake. The knower may be attempting to elucidate new principles, or he may be merely trying to synthesize what has already been discovered . . . A science of discovery . . . is the pursuit of new truths, or perhaps, the pursuit of truth taking reality itself, rather than the works of others, as the object studied. (1966: 19)

Of course, both of the theoretical sciences are concerned with advancing knowledge and therefore both are trying to bring new ideas into existence. A science of discovery involves a kind of novelty that is a step beyond rearrangement, whereas in a science of review, old ideas are merely rearranged. To stress the novelty in a science of discovery, we can use an example from D. R. Anderson's *Creativity and the Philosophy of C. S. Peirce* (1984: 48). When I. Newton (1642–1727) proposed his hypothesis concerning gravitation based on mathematical principles, this hypothesis could not be reduced to a combination of already known ideas concerning the organization of cosmos, it was in itself a new idea. Of course, Newton did not create gravitation, but he created the theory of gravitation, and this theory was a radical, new idea within the scientific knowledge. But, the theory was no more radical than it was grounded in already well-established knowledge (cf. Anderson 1984: 166, n. 50). Consequently, the radical, new idea is not new in the sense of being unique and autonomous. Rephrased with Peirce's words, a sign presupposes a sign, which again presupposes a sign, which again presupposes a sign, etc. However, this does not mean that the idea cannot be exceptional, which indeed was the case with Newton. Consequently, this leaves us with the following description of esthetics as a science of discovery: We already know, of course, that the esthete seeks truth for its own sake concerning the objectively admirable, but now we can specify that he must be attempting to throw light upon new principles or pursuing new truths, and that the novelty involved herein must be of the radical kind. This circumstance gives us reason to assume that of the three modes of inference, which make up the cognitive circuit of esthetics: abduction, deduction, and induction, the abductive mode must be the most dominant, since it, as Peirce emphasized in *Lectures of Pragmatism, Lecture VI* (1903), '... is the process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea' (CP 5.172).

Peirce saw the process of arriving at a scientific hypothesis as inferential. And as inferential, this process must be rational, hence it must be deliberate, voluntary, critical, and controlled (cf. CP 2.182; cf. Ayim 1974: 37–38, Kaplan 1997: 478–479). Although this process is, as he

wrote in *Lecture in Pragmatism, Lecture VII* (1903), ‘... very little hampered by logical rules, nevertheless it is logical inference, asserting its conclusion only problematically or conjecturally, it is true, but nevertheless having a perfect logical form’ (CP 5.188). The logical form Peirce had in mind is the following:

The surprising fact, C, is observed.

But if A were true, C would be a matter of course.

Hence, there is reason to suspect that A is true. (CP 5.189)

And he added:

Thus, A cannot be inductively inferred or if you prefer the expression, cannot be abductively conjectured until its entire content is already present in the premiss, ‘If A were true, C would be a matter of course’ (CP 5.189)

Peirce further noted that any kind of inquiry takes its starting point in real and living doubt or: ‘... *in some surprising phenomenon, some experience which ... breaks in upon some habit of expectation ...*’ (CP 6.133). This surprising phenomenon C that challenges the investigators’ habitual relations of thoughts (cf. Kapitan 1997: 482), which are tantamount to his belief, in our case, the beliefs of the esthete, causes, if he reacts with creativity that is, an explanatory hypothesis A, a formulation of a new premise, from where, given the truth of it, the surprising phenomenon ‘*follows [as] a matter of course*’ (CP 5.189). Although the new premise is simply and solely an empirical hypothesis, which remains to be thoroughly investigated, it is nonetheless a new idea, a possible gain of knowledge. Thus the abductive hypothesis must be responsible for every progress in the esthete’s understanding of the objectively admirable (cf. Haley 1993: 98–99). Of course, the esthete cannot accept the conclusion of his abduction at face value (cf. Ayim 1974: 38), since the conclusion may only be true and therefore, in Peirce’s formulation from *The Logic of Drawing History from Ancient Documents* (1901), the esthete must ‘... as soon as [the] hypothesis is adopted ... trace out its necessary and probable experimental consequences. This step is deduction’ (CP 7.203).

If the esthete assumes a hypothesis, which is an abductive assumption that ought to depend on partly the ability of the hypothesis to explain a surprising fact and partly that the hypothesis can be put through experimental testing (cf. CP 5.196) and finally that the hypothesis is simple (CP 5.60, cf. Fann 1970: 41–44), he must try to make the meaning of the hypothesis become as distinct, precise, and complete as possible by defining it within the doctrine of pragmatism (cf. Anderson 1984: 51). This

means that the meaning of the hypothesis is the sum of its consequences that has been identified through the deductive mode of inference. However, the deductive analysis of the hypothesis, or to be even more precise, the attempt to make a number of necessary and probable experimental consequences that follows from the hypothesis is completely independent of evidence, which can prove or reject the hypothesis. Accordingly, Peirce wrote, 'Deduction, of course, relates exclusively to an ideal state of things. A hypothesis presents such an ideal state of things, and that is the icon, or analogue of experience' (CP 7.205).

Abduction represents an experience; it is a function of the perceptual judgment, and it is only based on experience that deduction has any effect. Deduction does not add anything new to the hypothesis. It only displays what resides latently in the hypothesis. But whether the basis of experience can be ascribed any validity outside the logical universe, within which deduction operates and which can be defined as an imaginary possible universe (cf. Dinesen 1991: 85), can only be determined by the aid of the inductive mode of inference. Peirce noticed in *Lowell Lectures, Lecture VII* (1903):

The deductions which we base upon the hypothesis which has resulted from Abduction produce conditional predictions concerning our future experience. That is to say, we infer by Deduction that if the hypothesis is true, any future phenomena of certain descriptions must present such and such characters. We now institute a course of quasi-experimentation in order to bring these predictions to the test, and thus to form our final estimate of the value of the hypothesis, and this whole proceeding I term induction. (CP 7.115, n. 27)

Consequently, induction tests the hypothesis (cf. CP 7.206), or to be more precise, induction mediates between abduction and deduction. It tests, in Anderson's words, 'the "must be" [regarding the conclusion of the deduction] of what "may be" [regarding the conclusion of the abduction] against "what is"' [regarding the conclusion of the induction] (1984: 53). Hence, by the aid of induction, the esthete must compare the conclusions of the deduction with experience aiming at determining the relations between them (cf. CP 2.755, 5.179). Only based on this can he decide whether or not the hypothesis has yielded a new truth regarding the objectively admirable.

The three modes of inference constitute three phases in the esthetic inquiry. They are closely interlinked as its method. However, in the capacity of being a science of discovery — a science that may try to present novel ideas, new truths concerning the objectively admirable, and where the novelty involved must be of the radical kind — it has to be abduction

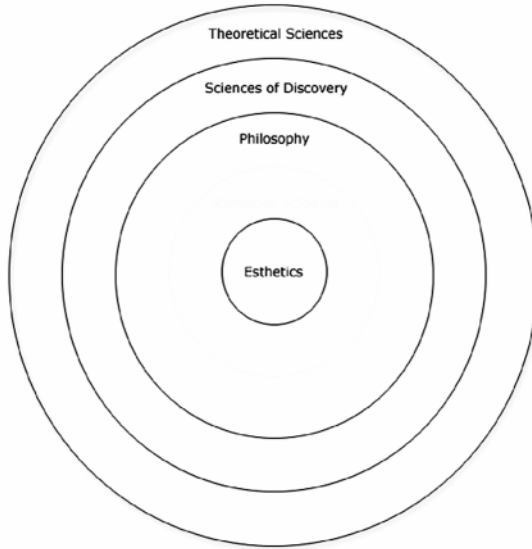


Figure 9. *Esthetics as a theoretical science, a science of discovery, and belonging to philosophy*

that is the most dominant mode of inference, since abduction alone can supply radical new ideas; deduction and induction merely confirm what tentatively was already being added to the esthetic knowledge.

Esthetics as a theoretical science, a science of discovery, and belonging to philosophy

3. What does it mean that esthetics belongs to the class of philosophical sciences?
 - It means that esthetics is in search of the truth of the objectively admirable, which can be deduced from what is in the ordinary experience.

Ad 3) It can hardly be a surprise that Peirce was of the opinion ‘*that all knowledge whatever comes from observation . . .*’ (CP 1.238). In exactly the same way that a machine cannot function unless it is connected to some kind of power supply, the machinery of the mind can ‘*only transform knowledge, but never originate it, unless it be fed with facts of observation*’ (CP 5.392). To put it short, Peirce agreed with his old teacher L. Agassiz (1807–1873) that ‘*observation is the “ways and the means” of attaining purpose in science*’ (CP 1.238).

As a science of philosophy, esthetics is cenoscopic. Calling esthetics cenoscopic, Peirce underlined the mode of observation of esthetics. The concept of cenoscopy was introduced by J. Bentham (1748–1832). However, Bentham preferred to spell it coenoscopy (cf. EP 517). According to the editors of *Collected Papers*, coenoscopy is compounded by ‘*the two Greek words, one which signifies common — things belonging to others in common — the other looking to*’ (CP 1. p. 110 footnote)

Before we take a closer look at this mode of observation, it may be necessary to point out the most general epistemological elements of the observation. According to Peirce, observation is characterized by an ‘*attentive experience, an act of voluntary attentive experience, usually with some, often great, effort*’ (CP 2.605). If we understand perception as a process that involves a form of analysis, we can designate observation in Peirce’s own words like ‘*observation — that is perceiving by the aid of analysis*’ (CP 1.34).

In *A Guess at the Riddle* (1890), where Peirce had left the idea that it is the concept that reduces the multitude of sensory data to a wholeness on the level of perception, he criticized I. Kant (1732–1804) (cf. CP 1.545) in the following way:

Kant gives the erroneous view that ideas are presented separated and then thought together by the mind. This is his doctrine that a mental synthesis precedes every analysis. What really happens is that something is presented which in itself has no parts, but which nevertheless is analysed by the mind, that is to say, its having parts consists in this, that the mind afterward recognized those parts in it. (CP 1.384)

After that critique, Peirce no longer used the concepts ‘impression’ and ‘conception’; instead he used ‘percept’ and ‘perceptual judgment’. To Peirce, these concepts now made up the two basic epistemological elements in the observation (cf. Goudge 1950: 29).

According to Peirce, the relation between the percept and the perceptual judgment is continuous. We are able to get knowledge about the percept only by abstracting (i.e. precision cf. 1.549) it from the perceptual judgment: ‘*We know nothing about the percept otherwise than by testimony of the perceptual judgment*’ (CP 7.643).

By percept, Peirce meant ‘*the object perceived in a single act of perceiving*’ (MS 639b). In relation to the categories, the percept is related to both Firstness and Secondness. The percept involves a quality of feeling, which is ‘*something positive and sui generis, being such as it is regardless of how or what anything else is*’ (CP 7.625). A visual percept of a blue desk with four legs and an adjustable tabletop is a single and undivided whole; as a

percept, it involves no analytic parts; the single characteristics of the table can only be separated by aid of the mind as a perceptual judgment. The percept does not represent the parts. The percept does not describe itself, it does not claim anything, it is ‘stupid’ and empty, it simply is (cf. CP 7.625). Furthermore, in *Telepathy and Perception* (1903), Peirce described it as ‘... (the percept) makes no professions of any kind, essentially embodies no intentions of any kind, does not stand for anything’ (CP 7.619).

Being Secondness, the percept ‘*brutally forces itself upon us*’ (CP 1.253); it concerns the here-and-nowness of the percept. It is determined by ‘*a single event happening hic et nunc ... an actual passage at arms between the non-ego and the ego*’ (CP 2.146). To perceive is to meet resistance from a world, which you have not constructed; a world, which inevitably forces itself upon us; a world you cannot escape from. In a review of J. Royce’s (1855–1916) *The Religious Aspect of Philosophy* (1885), Peirce writes the following concerning the dyadic aspect of the percept:

It involves the sense of action and reaction, resistance, externality, otherness, pairedness. It is the sense that something has hit me or that I am hitting something, it might be called the sense of collision or clash. (CP 8.41)

Furthermore, a perceptual judgment represents the percept — and, bearing the categories in mind, the perceptual judgment is related to Thirdness. It describes the percept; it interprets it. Consequently, Peirce designated the perceptual judgment as ‘*a judgment asserting in propositional form what a character of a percept directly present to the mind is*’ (CP 5.54) and furthermore, ‘*an act of formation of a mental proposition combined with an adoption or act of assent to it*’ (CP 5.115). Based on this, there is a big difference between the cognitive form of action, the perceptual judgment and the percept. If we return to the blue desk as we left it above, then we can conclude that where the percept represents the blue desk as an unbreakable unit, the perceptual judgment separates, for example, the blue color from the desk. Consequently, the blue color becomes the predicate of the table (cf. CP 7.631). In addition, where the percept is singular, carefully specific so to speak, the perceptual judgment involves generality. Peirce writes, ‘In a perceptual judgment the mind professes to tell the mind’s future self what the character of the present percept is’ (CP 7.630).

The perceptual judgment ‘*this desk is blue*’ means ‘*take any what so ever blue object and compare it to the desk and you will see that they on the whole resembles each other when it comes to color*’ (cf. CP 7.632). The generality of the predicate allows it to cover all objects that are blue and

the whole specter of blueness. Hereby, we have moved into a state of general commonness. The percept does not allow the perceiver any interpretative freedom. The percept makes 'this desk' independent of any other desk. In the perceptual judgment, a certain possibility exists that makes it possible by aid of abstraction to identify qualities that may be lost in the closeness of the percept.

Bearing this in mind, it may not be a surprise that T. A. Goudge in *The Thought of C. S. Peirce* determines observation in a Peircean perspective to be:

... a combination of matter and form. The matter is produced by the external world impinging upon us in our percepts; the form is provided by our characterization of these percepts in perceptual judgments. The bare 'having' of percepts does not constitute knowledge. They are known immediately through the perceptual judgment, which interprets them. The kind of proposition yielded by a perceptual judgment is always a singular whose predicate involves a modicum of generality. It is exclusively on the basis of these judgments that the inference found in all inquiry takes place. (1950: 35)

The percept and the perceptual judgment are the two epistemological elements of the observation. In the perceptual judgment, the percept is interpreted. This is a hypothesis concerning the present percept. It asserts that the percept contains certain qualities. The perceptual judgment is a function of the real generality and since it contains general qualities, universal assertions can be deduced from it (cf. CP 5.181, 5.156). Goudge formulates it as follows: '*Perceptual judgments are the vehicles by which generality and universality enter into our knowledge*' (1950: 31).

Observation forms the initial phase of any inquiry. The perceptual judgment forms the exordium and the first premises to any form of reasoning. Of course, this also applies to the reasoning that takes place in any esthetic inquiry. Now, let us return to the esthetics as a cenoscopic science.

As we remember, Peirce understood observation as a voluntary attentive experience, a kind of perception, which is aided by analysis or abstraction. In the esthetic inquiry, the entire ordinary experience is observed and by aid of different procedures of abstraction, e.g. hypostatic abstraction and generalization (cf. CP 2.428, 4.235), its pertinent characteristics relative to the object under observation are sorted out. As Peirce wrote in *A Detailed Classification of the Sciences* (1902), esthetics as a cenoscopic science '*... deals with positive truth, contents itself with observations such as some within the range of every man's normal experience, and for the most part in every waking hour of his life*' (CP 1.241).

Thus, the domain of observation of esthetics is those elements of experience, which are continuously present, i.e. those elements that daily and all the time force themselves upon us and stare every person directly in the eyes (cf. EP II 147) — and because of that, it is extremely difficult to observe as Peirce remarked in *The Idea of a Law of Nature among the Contemporaries of David Hume and among Thinkers of the Present Day* (c. 1894):

To assume ... that the observational part of philosophy, because it is not particularly laborious, is therefore easy, is a dreadful mistake, into which the student is very apt to fall, and which gives the death-blow to any possibility of his success in this study. It is, on the contrary, extremely difficult to bring our attention to elements of experience which are continually present. (CP 1.133)

Consequently, Peirce stressed in *A Detailed Classification of the Sciences* (1902) that the most relevant observations of philosophy escape ‘... the untrained eye ... because they permeate all our lives, just as a man who never take off his blue spectacles soon ceases to see the blue things’ (CP 1.241). Observations of what commonly appears to us are seldom noticed, as we have no apparent reason to do so. Thus, these possible observations are often left in lofty indifference (cf. Greenlee 1973: 20). Not until, for example, the esthete needs answers to his questions or when his hypotheses are being submitted to testing are observations, which reside in commonness, being observed. Hereby, what resides in commonness is endowed with a special meaning, which is related to a more or less sophisticated esthetical discourse, which obtain status as data and as such no longer resides in commonness.

Using a negative encirclement of esthetics, we may stress that esthetics, as a philosophical science has nothing to do with carrying out special observations, nor has it anything to do with ‘... perceptions of a novel description’ (EP II 146). In connection to this, Peirce wrote, in *On Phenomenology* (1903), in his own somewhat humorous words, ‘Microscopes and telescopes, voyages and exhumanitions, clairvoyants and witnesses of exceptional experience ... substantially superfluous for the purposes of philosophy’ (EP II 146).

Obviously, it does not demand such apparatuses, or making expeditions, or consulting mediums to observe these elements of experience, which are continuously present. However, the esthetic observation does demand — besides a vast amount of training in making observations — a special system of concepts. Let us call such a system ideational.⁶ This system must be able to mediate what we observe.

We are now able to specify that the esthetic inquiry not only proposes truth claims and is rooted in experience but the percepts, which the esthete is trying to characterize, to interpret, in his perceptual judgments, are impinging upon him from that part of the world, which, in Peirce's own words, 'presses in upon every one of us daily' (CP 5.120).

We have now arrived at a place in the definition of esthetics where we have to look at esthetics as a normative science.

Esthetics as a theoretical science, a science of discovery, and belonging to philosophy as a normative science

4. What does it mean that esthetics belongs to the order of normative sciences?

- It means that esthetics is in search of what one ought to but not what one has to be ready to admire for its own sake.

Ad 4) Peirce hesitated a long time (cf. CP 1.575) before he classified esthetics as a normative science (cf. CP 1.191; 2.198–199; 5.111). It was his work with the logic of the categories that convinced him that esthetics had to have a place among the normative sciences (cf. CP 5.129; Goudge 1950: 301–302). It even had to be the first and thereby the most fundamental of the normative sciences (cf. CP 8.255–256).

By normative science, Peirce understood the study of '*what ought to be*' (CP 1.281) '*but need not be*' (CP 2.156), or as V. G. Potter writes:

Normative science ... sets up norms or rules, which need not but ought to be followed ... 'Ought' ... excludes compulsion, coercion, and determination. It is always possible to act contrary to the 'ought'. The 'ought' rather implies ideals ... which attract and guide ... (1997: 25)

Following the logic of the three categories, esthetics is the first of the three normative sciences and it investigates '*what ought to be*' in relation to feeling (cf. CP 8.256). In other words, it investigates what it is that ought to be the objective and general ideal guiding human sensitivity. Peirce saw this ideal in the admirable (cf. CP 1.611). As we remember, Peirce defined esthetics to be '*... the science of ideals, or of that which is objectively admirable without any ulterior reason*' (CP 1.191). Of course, this ideal has to be general (and vague), and insofar it is ultimate, it has to be unique and immutable under all circumstances (cf. CP 5.136). Furthermore, the ideal has to be understood as purely admirable in and by itself without any justification by something other than itself. Nevertheless, it cannot be a stationary result (cf. CP 1.614).

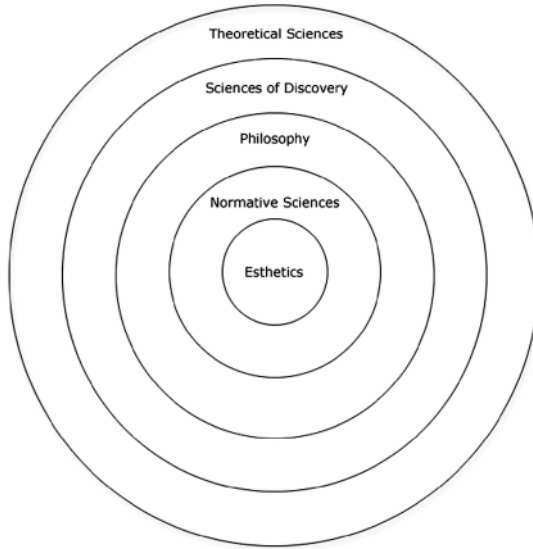


Figure 10. *Esthetics as a theoretical science, a science of discovery, and belonging to philosophy as a normative science*

However, what ideal can satisfy these conditions? According to Peirce, this ideal can only be reason, and to be even more precise, it can only be *the growth of concrete reasonableness* (cf. CP 5.3, 5.433). Furthermore, what did Peirce mean by *the growth of concrete reasonableness as something admirable in itself*, and how did he reach this conclusion? Starting with the latter question, we have to take into consideration that it was in his late philosophy, Peirce placed esthetics in the field of sciences and even if the placement of esthetics indicates that esthetics must precede metaphysics, it was nevertheless based on the work done within this class of sciences that enabled Peirce to (re)construct his esthetical ideal (cf. Anderson 1999: 40). Thus, the (re)construction was based upon cosmological speculations, and in the center of these speculations was the idea about a primordial habit-taking tendency that enables structures to appear, which makes the evolving universe become more and more intelligible. As Peirce noted in his *Lowell Lectures* (1903), ‘The creation of the universe, which did not take place during a certain busy week in the year 4004 B.C., but is going on to-day and never will be done, is [the] development of Reason. I do not see how one can have a more satisfying ideal of the admirable . . .’ (CP 1.615).

The creation of the universe and the development of reason are synonymous. Thus, the objectively admirable lies inherent in the universe.

Based on this, it seems to be worth taking into consideration how Peirce understood evolution.

First, we have to draw attention to the fact that Peirce's cosmology rests on the idea that the development of the universe is hyperbolic, i.e. 'proceeds from one state of things in the infinite past, to a different state of things in the infinite future' (CP 8.317). This makes evolution irreversible. Peirce's guess at the riddle can be outlined in the following way: In the beginning — the following is understood as an objective logic sequence and not a temporal, insofar time itself is created within the span of evolution — there was nothing, not in the sense of an empty space, nor nothing as an abstract concept, nor the nothing of negation (cf. CP 6.217), but nothingness as 'completely undetermined and dimensionless potentiality' (CP. 6.193). In other words, we can designate this state as 'dreamy' (CP 1.175), 'a free living in immediacy' (CP 6.585), and 'pure spontaneity' (CP 6.200).

Something followed the borderless freedom of nothingness. Not by necessity (cf. 6.218) but as Peirce emphasized in *The Logic of Events* (1898), the logic of freedom involves 'that it shall annul itself'.

I say that nothing necessarily resulted from the Nothing of boundless freedom. That is, nothing according to deductive logic. But such is not the logic of freedom or possibility. The logic of freedom, or potentiality, is that it shall annul itself. For if it does not annul itself, it remains a completely idle and do-nothing potentiality; and a completely idle potentiality is annulled by its complete idleness . . . I do not mean that potentiality immediately results in actuality. Mediate perhaps it does; but what immediately resulted was that unbounded potentiality became potentiality of this or that sort — that is, of some quality . . . Thus the zero of bare possibility, by evolutionary logic, leapt into the unit of some quality. This was hypothetical inference. Its form was: Something is possible, Red is something; Red is possible. (CP 6.219, 20)

Peirce formulated the first step of evolution as the transition from the unbounded potentiality to determined potentiality. Furthermore, Peirce designated the agency of transition as *chance* (cf. CP 6.199), since the qualities emerged from their own inherent Firstness (cf. CP 6.199). According to Peirce in *The Logic of Continuity* (1898), we may presume the following:

In short, if we are going to regard the universe as a result of evolution at all, we must think that not merely the existing universe, that locus in the cosmos to which our reactions are limited, but the whole Platonic world, which in itself is equally real, is evolutionary in its origin, too. And among the things so resulting are time and logic. The very first and most fundamental element that we have to assume is

a Freedom, or Chance, or Spontaneity, by virtue of which the general vague nothing-in-particular-ness that preceded the chaos took a thousand definite qualities. The second element we have to assume is that there could be accidental reactions between those qualities. The qualities themselves are mere eternal possibilities. But these reactions we must think of as events. Not that Time was. But still, they had all the here-and-nowness of events. I really do not see how the metaphysician can explain either of these elements as results, further than this, that it may be said that the accidental reaction was, at first, one of the special determinations that came about by pure spontaneity or chance. (CP 6.200)

In Peirce's words, this new state was a '*world of Platonic Forms*' (CP 6.198), and qualities are considered as '*mere eternal possibilities*' (CP 6.200), or simply and solely as pure Firsts. The qualities did not emerge separated; on the contrary, they emerged as they already were reacting with each other '*and thus into a kind of existence*' (CP 6.199). Was this not the case, the qualities could never have been related and evolution would have been brought to a standstill.

However, the second step of evolution was taken because where existence is, there are events, and thus the world emerged out of actuality from a world of Platonic forms (cf. CP 6.208); in other words, a world arose wherein the actualized qualities brutally reacted and these brute reactions consisted of the possibility of regularity.

Peirce designated the occurrence of any kind of regularity, any kind of lawfulness as the result of a tendency to form habits (in Peirce's wording, a tendency to *take* habits) a generalizing tendency (cf. CP 6.101, 1.415). With this tendency, the third step of evolution was taken. Peirce meant that the tendency to form habits results in the growth of laws. These outlined steps in evolution define the hyperbolic movement from possibility toward definiteness (cf. Anderson 1999: 64). Indeed, it is the hyperbolic movement that enables us to answer the first question posed above, namely: what did Peirce mean by *the growth of concrete reasonableness*? To answer this question, we shall take a closer look at Peirce's hyperbolic philosophy. Peirce wrote in *A Guess at the Riddle* (1903):

Uniformities in the mode of action of things have come about by their taking habits. At present, the course of events is approximately determined by law. In the past that approximation was less perfect, in the future it will be more perfect. The tendency to obey has always been and always will be growing. (CP 1.409)

Indeed, it is the movement from possibility toward definiteness, *the growth of concrete reasonableness* that is the key issue. Let us elaborate on this by making the hyperbolic movement even more clear. Peirce wrote in a never-completed letter to C. Ladd-Franklin (1847–1930):

This theory is that the evolution of the world is hyperbolic, that is, proceeds from one state of things in the infinite past, to a different state of things in the infinite future. The state of things in the infinite past is chaos, *tohu bohu*, the nothingness of which consists in the *total absence of regularity*. The state of things in the infinite future is death, the nothingness of which consists in *the complete triumph of law and absence of all spontaneity*. Between these, we have on our side a state of things in which there is some absolute spontaneity counter to all law, and some degree of conformity to law, which is constantly on the increase owing to the growth of habit. *The tendency to form habits or tendency to generalize, is something which grows by its own action, by the habit of taking habits itself growing*. Its first germs arose from pure chance. There were slight tendencies to obey rules that had been followed, and these tendencies were rules which were more and more obeyed by their own action. There were also slight tendencies to do otherwise than previously, and these destroyed themselves. To be sure, they would sometimes be strengthened by the opposite tendency, but the stronger they became the more they would tend to destroy themselves. As to the part of time on the further side of eternity which leads back from the infinite future to the infinite past, it evidently proceeds by contraries. (CP 8.317; our emphasis)

The important issues in this quotation are:

- The infinite past: total absence of regularity
- The infinite future: complete triumph of law and absence of all spontaneity
- The tendency to form habits or tendency to generalize is something, which grows by its own action, by the habit of taking habits itself growing.

In the universal evolution, the total absence of regularity is the one extreme: the infinite past, the *tohu bohu*, and the other extreme is the infinite future — the complete triumph of law and absence of all spontaneity. This hyperbolic movement is universal; it is *the growth of concrete reasonableness*. This is the universal esthetic ideal, the movement toward truth, involving a limitation of potentiality (cf. CP 6.132), and an increase of organization, order, intelligibility, and Thirdness in all its other varieties (cf. CP 6.33, Esposito 1980: 167). Consequently, Peirce saw the development of reason as something admirable in itself. Remembering those conditions that, according to Peirce, must be met for something to be admirable in itself, we can specify as follows: reason consists in governing individual events (CP 1.615); it depends upon these to instantiate it; without these instantiations, it would have no real being. Nevertheless, reason cannot be reduced to a finite number of instantiations. The instantiations can never fill up its meaning completely, since it refers to possible instantiations. Reason is, in other words, a general and, being a

general, it refers to the indefinite future; its mode of being is *esse in futuro* (cf. CP 2.148). In its capacity of being something admirable in itself, reason therefore ‘*always looks forward to an endless future and expects endlessly to improve its results*’ (CP 1.614). It is self-satisfied, meaning that something other than itself cannot justify it; every justification must appeal to reason, yet it is not a stationary result. Or in Peirce’s own words from *Lowell Lectures* (1903):

... the essence of Reason is such that it can never be completely perfected. It always must be in a state of incipency, of growth. It is like the character of a man which consists in the ideas that he will conceive and in the efforts that he will make, and which only develops as the occasions actually arise. Yet it all his life no son of Adam has ever fully manifested what there was in him. So, then, the development of Reason requires more individual events than ever can occur ... This development of reason consists, you will observe, in embodiment, that is, in manifestation ... I do not see how one can have a more satisfying ideal of the admirable than the development of Reason so understood. The one thing whose admirableness is not due to an ulterior reason is Reason itself comprehended in all its fullness, so as we can comprehend it. (CP 1.615)

Harrison points out that reason has ‘*a clear emphasis on growth*’. And always ‘*in a state of incipency*’, *the growth of Reason implies a kind of inexhaustible eschatology*’; and he continues: ‘*Our participation is made possible by our power of self-control, our ability to modify our habits of ... feeling*’ (1997: XIX). Thus, we can and we should cultivate our habits of feeling in accordance with the evolutionary ideal (cf. Potter 1997: 202); and at this point, esthetics articulates its normative function understood as ‘*the theory of the deliberate formation of such habits of feeling*’ as can be brought out by way of ‘*self-criticism and hetero-criticisms*’ (CP. 1.575) — only in this way can these be designated reasonable.

Esthetics as a theoretical science, a science of discovery, and belonging to philosophy as a normative science is prior to ethics and logic

5. What does it mean that esthetics belong to the sub-order of normative sciences?
 - It means that ethics and logic depend upon esthetics.

Ad 5) As previously mentioned, esthetics is, as a normative science, the study of what ought to be but need not to be in relation to feeling. To this we can add that ethics and logic as normative sciences are the studies of what ought to be in relation to action, conduct, and thought, reasoning.

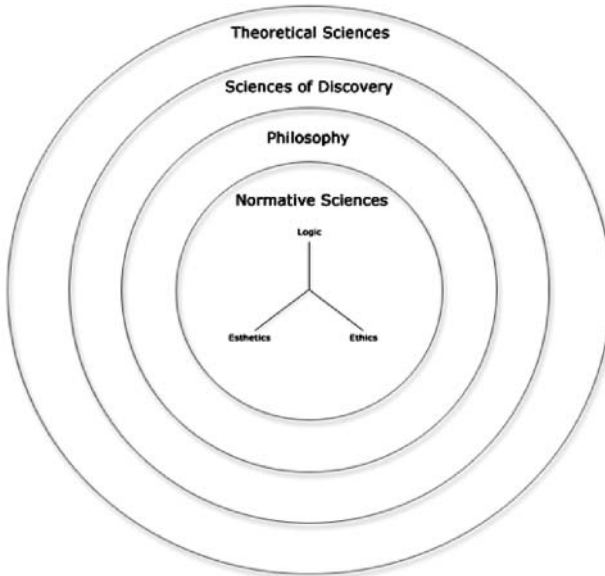


Figure 11. *Ethics and logic depending on esthetics*

Peirce stressed how ‘*there is a family likeness between Esthetics, Ethics, and Logic*’, and that these ‘*form a true sequence in this order*’ (CP 2.156). This sentence is based in the logic of phaneroscopy, as Peirce wrote, ‘Supposing . . . that the normative science divides into esthetics, ethics and logic, then it is easily perceived, from my point of view, that this division is governed by the three phaneroscopic categories’ (CP 1.129).

Consequently, we can say that esthetics is the Firstness of normative science, while ethics and logic are Secondness and Thirdness, respectively (cf. CP 8.256). Moreover, if we remember how Peirce’s categories allow themselves to be abstracted in a certain order, Firstness can be abstracted from Secondness, and Thirdness and Secondness can be abstracted from Thirdness, but Secondness cannot be abstracted from Firstness, and Thirdness cannot be abstracted from Secondness and Firstness, we have the following relations between the normative sciences: Esthetics can be abstracted from ethics and logic. Ethics can be abstracted from logic, but ethics cannot be abstracted from esthetics, and logic cannot be abstracted from ethics or esthetics. In other words: Logic presupposes ethics, while logic and ethics presuppose esthetics (cf. CP 5.36; cf. Stuhr 1993: 5–6).

In a discussion from *Lowell Lectures* (1903) concerning what right reasoning and right conduct consist of, Peirce contended the following regarding the conditional relations:

What does right reasoning consist in? It consists in such reasoning as shall be conducive to our ultimate aim. What, then, is our ultimate aim? Perhaps it is not necessary that the logician should answer this question. Perhaps it might be possible to deduce the correct rules of reasoning from the mere assumption that we have some ultimate aim. But I cannot see how this could be done. If we had, for example, no other aim than the pleasure of the moment, we should fall back into the same absence of any logic that the fallacious argument would lead to. We should have no ideal of reasoning, and consequently no norm. It seems to me that the logician ought to recognize what our ultimate aim is. It would seem to be the business of the moralist to find this out, and that the logician has to accept the teaching of ethics in this regard. But the moralist, as far as I can make it out, merely tells us that we have a power of self-control, that no narrow or selfish aim can ever prove satisfactory, that the only satisfactory aim is the broadest, highest, and most general possible aim; and for any more definite information, as I conceive the matter, he has to refer us to the esthetician, whose business it is to say what is the state of things which is most admirable in itself regardless of any ulterior reason. (CP 1.611)

In this way, logic can be understood as the study of right reasoning, and right reasoning is reasoning conducive to an ultimate aim. To Peirce, reasoning covers the conscious control of inference (cf. CP 2.182, 5.109). As he wrote in *Minute Logic* (1901–1902):

For reasoning is essentially a voluntary act, over which we exercise control. If it were not so, logic would be of no use at all. For logic is, in the main, criticism of reasoning as good or bad. Now it is idle so to criticize an operation which is beyond all control, correction, or improvement. (CP 2.144)

To enable logic to articulate its normative function, it has to have a criterion for how one ought to think; this is a question of establishing validity: is one's reasoning good or bad? This criterion depends on previous conclusions regarding the objective ideal for reasoning itself. These conclusions are located within ethics and esthetics (cf. Curley 1969: 93). Regarding the object of ethics, Peirce wrote in *Minute Logic* (1901–1902):

We are too apt to define ethics to ourselves as the science of right and wrong. That cannot be correct, for the reason that right and wrong are ethical conceptions which it is the business of that science to develop and to justify. A science cannot have for its fundamental problem to distribute objects among categories of its own creation; for underlying that problem must be the task of establishing those categories. The fundamental problem of ethics is not, therefore, What is right, but, What am I prepared deliberately to accept as the statement of what I want to do, what am I to aim at, what am I after? (CP 2.198)

Thus, ethics does not investigate what is right and what is wrong; rather it investigates wherein that end, which we are deliberately prepared to adopt, consists. In connection to this, ethics must define our purpose relative to that end. In this way, logic depends on ethics, since:

... logic is a study of the means of attaining the end of thought. It cannot solve that problem until it clearly knows what that end is. Life can have but one end. It is Ethics which defines that end. It is, therefore, impossible to be thoroughly and rationally logical except upon an ethical basis. (CP 2.198)

However, in what does the ultimate end of action consist — that is, which can be deliberately and reasonably adopted? According to Peirce as written in *Lectures in Pragmatism, Lecture V* (1903), it can only be ‘... a state of things that reasonably recommends itself in itself aside from any ulterior considerations. It must be an admirable ideal, having the only kind of goodness that such an ideal can have, namely aesthetic goodness’ (CP 5.130).

Thus, ethics depends upon the esthetic inquiry, in Peirce's wordings: ‘... we cannot get any clue to the secret of ethics ... until we first have made up our formula for what it is that we are prepared to admire’ (CP 5.36). Esthetics, being the science of what an end is in itself, identifies the ideal, which the ethic effort should conform to; the means to reach the ideal, of course, belong to the province of logic, being the study of the self-controlled process of reasoning belong to logic.

In summary, as a normative science, logic governs thought toward the ultimate aim or ideal. Ethics, as a normative science, investigates what the ideal consists in that thought should be aimed at; in this perspective, logic presupposes ethics. Esthetics, as a normative science, investigates the ideal in itself — in this respect, ethics as well as logic depend on esthetics.

Conclusion

According to Peirce, knowledge is both real and possible (CP 8.41), and an important quality of knowledge is objective truth. Truth is the limit of esthetic inquiry (CP 8.41), and that which is real is represented in the true representation; the esthetic inquiry cannot reach a more recondite reality than that which is represented in the true representation (CP 5.312). True answers exist to genuine esthetic questions, and truth is what all who (with sincerity use the scientific method) try to answer esthetic questions in the end can reach an agreement on; truth is destined by fate to be

accepted, no more no less (cf. CP 5.407, 5.11–13, 5.311). However, reality is independent of this agreement among the investigators of esthetic; it is reality that makes the agreement possible (CP 5.565). Reality affects our senses, and only by observation of what is present to the common experience and rational thought relying heavily on the abductive mode of inference (CP 5.120) is esthetic investigation able to discover what is truly real (cf. CP 5.358). Although, esthetics poses the question about what ought to be the admirable and not what is admirable, esthetics is still, by the aid of presenting positive, categorical truths, able to show how that what ought to be admirable really is so (cf. CP 5.39). Ultimately, Peirce's esthetics is a theoretical science, a science of discovery, a philosophy, and a normative science.

The key issue in the Peircean version of esthetics is the hyperbolic philosophy, the growth of the concrete reasonableness. As we have seen, this growth leads us toward the objectively admirable. However, the problem is that the general notion of the growth of the concrete reasonableness concerns the evolution of the universe. This means that the time span is immense, in fact too immense for us to really comprehend this growth. However, every time we unfold the scientific method and discover something new about the truth, we contribute to the universal growth of reasonableness and we get a glimpse of the objectively admirable. As an ideal, the objectively admirable and the growth of the concrete reasonableness have merged together. This means that the objectively admirable, as an ideal with a gravitational pull, draws us in a certain direction, namely toward the annulment of its potentiality and to fulfillment of its ideal, the universal truth.

Consequently, being the reality of the ideal, it must affect our scientific conduct and it must be manifested in scientific conduct. It follows that every scientific conduct is based on this ideal. And every scientific conduct following the scientific method reveals something new about truth.

This means that:

- Esthetics concerns what is *objectively admirable without any ulterior reason* as the ideal of ideals.
- Ethics is manifestations of what is *objectively admirable without any ulterior reason*.
- Logic investigates reason in relation to what is *objectively admirable without any ulterior reason* based on observations of actions.

Since ethics as Secondness is manifestations of esthetics, it must carry the qualities of esthetics and it must be constrained by esthetics. Since ethics concerns conducts, we may say that our conduct in general is true, that the general development of science is true. Logic as Thirdness

emerges as a generalizing tendency from the manifestations of esthetics. Hence, logic must carry qualities from esthetics. Consequently, logic must be right reasoning, since our ability to reason shares qualities with the ideal of ideals. Since ethics and logic develop from esthetics and through evolution become more and more hidebound with habits and therefore more and more similar to esthetics, the normative sciences of esthetics, ethics, and logic become impossible to separate.

Similar to Smith cited in the beginning, we believe that the task of defining Peirce's esthetics could be compared to the work of a palaeontologist. However, unlike Smith, we believe that by knowledge profiling esthetics we have gathered the bones, built a skeleton from the bones, put flesh upon the bones, and resuscitated it into a vigorous concept. We believe that this intriguing concept has a great future. Indeed, our next project is to identify one of the vehicles to increase the growth of the *concrete reasonableness*, namely the Peircean version of the metaphor.

Notes

1. Peirce removed the A in Aesthetics and instead called the concept *Esthetics*. Hereby, Peirce underlined that his version of esthetics differs from the more traditional versions of aesthetics.
2. However, only three editions exist of the classifications of the sciences containing esthetics. We use the two most elaborated versions: *A Detailed Classification of the Sciences* (1902) and *An Outline Classification of the Sciences* (1903).
3. The knowledge profile is developed by Torkild Thellefsen. See e.g. 'Knowledge profiling: The basis for knowledge organization', *Library Trends* (2004), or 'Semiotics of terminology: A semiotic knowledge profile', *SEED Journal* (forthcoming)
4. We believe that calling all kinds of sign studies 'semiotics' is an act of terminological unethical behavior. Saussurean-inspired sémiologie and Peircean semiotics have nothing in common besides operating with a sign. However, this does not justify calling both types of sign studies 'semiotics'; this seems to imply that they are the same. Of course this is not the case. To avoid this kind of conceptual mess, we will use Peirce's own naming of semiotics namely: *Semeiotics* (cf. CP 3.444, 4.9; Fisch 1978: 32)
5. Printed in the Digital Encyclopedia of Charles S. Peirce, available at <http://www.digitalpeirce.org/home.htm>.
6. We have borrowed this term from Greenlee (1973: 20).

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