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# A BRIEF INTELLECTUAL AUTOBIOGRAPHY BY CHARLES SANDERS PEIRCE

EDITED AND WITH NOTES BY  
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## INTRODUCTION

*Background.* With the kind permission of the Department of Philosophy, Harvard University, manuscripts L107 and 914 from the Harvard Peirce papers are published here, probably for the first time. (I wish also to acknowledge the kind assistance of Max H. Fisch and M. J. W. Kloesel.) These materials comprise the Peirce/Curtis correspondence, consisting of a letter from Curtis to Peirce inviting him to describe his intellectual work, and Peirce's handwritten response. The response includes a main draft plus a few variant pages. The draft is given here completely, with a few notes to aid the nonspecialist in following it. Because they provide useful supplemental information, variant sequences are appended at the end, keyed to the main draft. Suggested sites for variant sequences are given by asterisks within brackets, with [\*] meaning the site for the first variant, [\*\*] for the second, etc.—[\*\*A] means the first of multiple variants for site [\*\*], etc.

Probably Peirce's draft was not sent—no original smooth copy has been found. Furthermore, this draft was probably not approved by Peirce as a final one, for it contains a few repetitions (for example, the remarks about the nature of induction). What we have here is probably complete in the sense that it seems not to be a fragment of any other piece. It stands well on its own, and provides (in my opinion) a very reliable, if brief, guide to Peirce's thought, showing its overall structure and how

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semiotic fits within it. Finally, it is relatively late, being written during a particularly fruitful period of Peirce's mature career.

Peirce's spelling and punctuation have been followed in most cases. The slight variations in these throughout the manuscript are not a symptom of intellectual weakness, but reflect the fact that this is less than a final draft, as well as Peirce's considered opinion that there should be an allowable range of variation in such matters. All superscript notes, plus material in brackets, are mine, as is the title (Peirce gave no title). My notes (and this introduction) will include some suggested resources for further study, and some proposed interpretations of Peirce. To avoid needless repetition, it is convenient to state here that further evidence for these interpretative hypotheses are given in my works cited in the references, plus those of Eisele 1979; Fisch 1981a and b, 1978; Roberts 1973; Esposito 1980 (which is not to say that any of these scholars would find my hypotheses correct, although for all I know, some or all of them might do so). One may find many useful studies that detail various themes in L107 by perusing the secondary bibliography in *Comprehensive Bibliography* and "Bibliography of Charles Peirce," by Christian J. W. Kloesel, forthcoming in the *Monist*, which updates the earlier secondary bibliography. Bracketed numbers inserted into L107 refer to Peirce's publications as listed in the primary part of *Comprehensive Bibliography*. Perhaps I am biased, but I believe a very useful handbook for approaching Peirce's semiotic is *Peirce Studies* no. 1, "Studies in Peirce's Semiotic" (P. O. Box 4530, Lubbock TX 79409).

*On Semiotic.* Peirce spelled the name of this science as 'semeiotic,' 'semiotic,' but rarely as 'semiotics.' Probably the pronunciation would be "seem-eye-OH-tic." In accordance with the principles of the Ethics of Terminology, we should refer to Peirce's own well-worked-out (but not perfect) theory of signs using the terminology he developed or adopted. 'Semiotic' seems to be the most popular spelling among contemporary Peirce scholars, and it accords well with Peirce's usage. To identify Peirce's work as "semiotics" would be to invite the same kind of confusion that occurred with "pragmatism," a malady that Peirce cured by prescribing "pragmaticism."

In reviewing the classification of science given in L107, which is typical of late classifications, several matters relevant to developing a correct interpretation of semiotic can be discerned. First of all, note that the general category for Peirce is science, not philosophy. And he perceived science principally in terms of its methods. Hence, the basic point of

departure for understanding Peirce's thought is method. The alternatives to science are nonscientific (or egocentric, or arbitrary, or charismatic) methods as sketched in "The Fixation of Belief" (*P* 107) and similar expositions (for example, *P* 41 or *MSS* 360-396). The most fundamental science is mathematics, which proceeds by means of observation of and experimentation upon diagrams. The next is phenomenology, followed by the normative sciences of esthetics, ethics, and *semiotic* (substituting semiotic for logic, since the two are equivalent). Semiotic is then composed of Speculative Grammar (sometimes called Analytic), Critic, and Methodeutic (sometimes called Speculative Rhetoric). Thus, in order to understand semiotic in its three branches, we must understand what it presupposes, among which are: (1) that a semiotician is a man of science (person of science?), not a man of charisma, etc.; (2) mathematics—not in the sense of mastering its subject matter, but more in the sense of having an adequate understanding of its methods and status as a science, plus ability to use those methods; (3) phenomenology, or the doctrine of the categories and the study of experiences common to all mankind; (4) esthetics and ethics, the study of the phenomena of control and controlling; and (5) in semiotic (logic), we must recall that it is a science controlled by the ideals of science, the search for objective truth.

I hope in this short comment I can convey that Peirce's semiotic was not some small isolated part of his system (for he does indeed have a system of scientific thought, although perhaps not a system of *philosophy* in the modern sense) having to do with classifying signs. Peirce's system is a profound analysis of the nature and genesis of scientific method (scientific modes of thought), coupled with a vigorous attempt to carry the results of that analysis into every nook and cranny of human endeavor. Concerning the results of this analysis, look back again at the classification. We can see that once semiotic (logic) is off the ground, it is then used to undertake studies in metaphysics as well as all the special sciences, which division comprises most of what we today, in a too limited fashion, call science. This means that semiotic as well as mathematics, phenomenology, and metaphysics, are going to be of very wide use, if this classification is correct.

*Conclusion.* I can do little more than sketch this interpretation here. We can conclude from this small account (if it is true), however, that we have a lot to study if we want to learn semiotic. Contrary to the claim that Peirce's semiotical writings are fragmentary and scattered and unsystematic, they are voluminous, painfully detailed, and as systematic as any

model one might care to mention from the history of the earth. Whether it is right or wrong, true or false, a boon or bane for mankind, I leave for the flow of science to decide. I am first concerned to see *what* Peirce's hypotheses actually were—to give a truthful account of them. We will not be able to go beyond him until we have such an account (presently a desideratum), and lacking that, we can only go around him, which would be an unfortunate noneconomy of research, not to mention also constituting an unnecessary delay. If it takes careful and patient scholarship to achieve such an account—"scriptural exegesis," as one charming boulevardier calls it—then (to borrow a biblical phrase), so be it.

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Adelbert College  
Western Reserve University  
Department of Philosophy

Cleveland, O., October 26th, 1904

Dr. C. S. Pierce [*sic*]  
Cambridge, Massa.

My dear Dr. Pierce:

I have read your articles in "Mind", the "Popular Science Monthly", and the "Monist", but feel that I should apply to you directly for a brief of your logical doctrine and philosophical views. I wish to notice them in the tenth edition of Überweg-Heinze Geschichte der Philosophie, for which I am now re-writing the sketch of Philosophy in North America. Please be kind enough to indicate the various articles which you have written bearing on the subject.

Sincerely yours,

Mattoon M. Curtis

L107.03 [\*] Charles Santiago<sup>1</sup> Sanders Peirce (b. 1839), son of the mathematician Benjamin P.,<sup>2</sup> brought up in a circle of physicists and naturalists, and specially educated as a chemist, derived his first introduction to philosophy from the K.d.r.V. and other celebrated German works,<sup>3</sup> and only later made acquaintance with English, Greek, and

Scholastic philosophy. Accepting unreservedly Kant's opinion that the metaphysical conceptions are merely the logical conceptions differently applied, he inferred that logic ought to be studied in the spirit of the exact sciences,<sup>4</sup> and regarded Kant's table of Functions of Judgment as culpably superficial. He also thought that Kant's reply to the question how are synthetical judgments *a posteriori* possible was altogether insufficient, and that an exact inquiry into it would probably throw some light upon judgments *a priori*. Appointed in 1864 Lecturer on Logic [P 16] in Harvard University, he divided all reasoning into, 1st, the deductive, including all necessary inference together with all

L107s:06 probable inference to which the calculus of probabilities is properly applicable (rejecting inverse probabilities not founded on positive information), 2nd, the inductive, including all experimental testing of hypotheses (for he considers a physical experiment to be in a general sense of the same nature as a geometrical reasoning,<sup>5</sup> which is performed by internal experimentation) but excluding, 3rd, the "abductive," or the process of forming and accepting on probation, a hypothesis by which to explain surprising facts. He put forth a "critic," or mathematical<sup>6</sup> deduction of the validity of these modes of reasoning, founded upon the principle that nothing is subject to logical (any more than to ethical) criticism except so far as it is subject to self-control. What one does not in the least doubt one should not pretend to doubt; but a man should train himself to doubt. His account of validity of induction is that its premisses do not lend the

L107:04 slightest probability to its conclusion, but that we are justified in provisionally accepting the conclusion by the postulate that any error in that conclusion will ultimately be corrected by the further application of the same method. This postulate will only be true if the inductive conclusion be understood to be limited to a "possible experience" (a Kantian conception modified) of future similar experiments. But he already held it to be impossible to conceive anything otherwise than as an object of possible experience, and that of the kind that "experiment," or purposive arrangement of conditions, may bring; and in 1877, in two articles in the *Revue philosophique* [P 129, 162], he put forth the doctrine he called *Pragmatism*,<sup>7</sup> namely, that every concept (as distinguished from a generalized sensation, such as 'red') is equivalent to a conditional purpose, should one have certain desires and certain types of

L107:05 experience, to act in a certain general way. In 1867, he published in the 'Proceedings of the American Academy of Arts and Sciences' of Boston, five papers [P 30-34] in which he professed to limit himself to incontrovertible assertions. In one of these, 'On the Classification of Arguments' [P 31] (partly repeating a paper he had distributed [P 18] the year before) he undertook to reduce all inference to *substitution* (an idea adopted afterwards by Taine and Jevons) without, however, maintaining that substitution was an elementary operation; and indeed he subsequently showed that the substitution of B for A is never logically justified unless it be justifiable first to insert B and unless it be subsequently justifiable to omit A. This paper also studied the relation between particular judgments and negative judgments. Another of the papers of 1867 proposed a new list of categories [P 32], which will be given below.

L107:06 [\*\*] In 1868 he contributed three papers [P 26, 27, 41] to W. T. Harris's 'Journal of Speculative Philosophy' in which he endeavored to prove and to trace the consequences of certain propositions in epistemology tending toward the recognition of the reality of continuity and of generality and going to show the absurdity of individualism and of egoism. In 1870, he published, in the Memoirs of the American Academy of Arts and Sciences, an extension of the Boolean algebra of logic [P 52] to render it applicable to the logic of relations, and developed this branch of logic somewhat further than DeMorgan had done. Especially he demonstrated<sup>8</sup> that all relations between four or more correlates are reducible to compounds of triadic relations, while triadic relations can never be defined in terms of dyadic relations exclusively. In the North American Review for October 1871, in a review of Frazer's edition of Berkeley's Works [P 60], he argued in favor of Scotistic realism.

L107:07 In 1877-8 he published a series of articles in the Popular Science Monthly [P 107, 119-123] (two of them appeared also in the Revue Philosophique [P 129, 162]) in which he enounced the principle he called *pragmatism*, that is, that every concept (in contrast to qualities of feeling, images, experiences, etc.) is definable in terms of a possible purpose of conduct under hypothetical general conditions, and that from this can be deduced the best rule for rendering ideas clear, namely, "Consider what effects that *might conceivably* have practical bearings we conceive the object of our conception to have: then, our concept of those effects *is* the *whole* concept in question." But since P not only admits the difference between a commensurable and an incommensurable length,

but has specially insisted upon abnumerable (abzählbar) multitudes<sup>9</sup> (this had better be translated *Menge* though incorrectly, because students of philosophy would not know the correct term *Mächtigkeit*)

**L107:08** it is evident that he understands "conceivably practical bearings" in a peculiarly wide sense. In the same articles he discussed the "uniformity of nature" [P 122] and undertook to demonstrate that while it afforded opportunities for inductive reasonings, it does not constitute the general ground of validity of such reasonings. He also argued that as a fact there appears to be as little orderliness in the universe [P 122] as we can conceive that a universe should have, and further that the degrees of orderliness of the universe is relative to the mind that contemplates it, consisting merely in the breadth (Umfang) of that mind's interests. In 1880-3, while lecturing on logic in the Johns Hopkins University, he developed in several papers in the American Journal of Mathematics, a theory of necessary reasoning [P 167], a paper on the logic of number [P 187] in which he distinguished between finite and infinite collections in substantially the same

**L107:09** way that Dedekind did six years later, and by means of the conception of correspondence, which is Gauss's conception of the *Abbild* (employed also by P in his Quincuncial Projection of the Spheroid [P 135, also 183] of 1879), he deduced the validity of the Fermatian inference [also P 187] (sometimes unsuitably termed mathematical induction). He also produced a general algebra of logic [P 296] in which subscript letters are attached to letters on the line signifying relations, these subscripts indicating individual correlates, while the letters  $\Sigma$  and  $\Pi$  with the same subscripts show whether the individuals are to be selected universally or existentially, that is, by the interpreter of the proposition or by the utterer of it.<sup>10</sup> He further produced an algebra of dyadic relations [P 268] to which the third volume of Schröder's *Algebra der Logik* [O 435(I), O 468(II), O 610(III)] is devoted; but P is not so entirely satisfied with that method as Schröder was.<sup>11</sup> He also distributed a brochure entitled 'A Brief Description of the Algebra of Relatives' [P 220].

**L107:10** Closely connected with this is his edition of his father's book called "Linear Associative Algebra."<sup>12</sup> To a volume of papers by his students entitled 'Studies in Logic' [P 268] (Boston, 1883), some of them contributions of prime importance, he contributed a note on the algebra of dyadic relations, and a discussion of the validity and rules of

scientific induction. He rests this wholly on the principles of the calculus of probabilities, yet denies that the inductive argument lends the slightest probability to the conclusion, and refutes the principle of inverse probabilities as applied by Laplace without statistical information. He makes the justification of induction to consist in the fact that if the conclusion is erroneous, the same method, persisted in further, will bring a correction of it.<sup>13</sup> [\*\*\*] In 1884, he presented to the United States National Academy of Sciences,<sup>14</sup> a memoir [P 303] in collaboration with his student,

L107:11 J. Jastrow, describing experiments which show that there is no *Differenz-Schwelle* in sensation, or that if there be it is almost incredibly small.<sup>15</sup> The philosophical interest of this consists in part in its bearing upon *Synechism*, or the principle of universal continuity, which does not mean that there is no discontinuity, which is involved in all existence. It was also shown by these experiments that a perception might be so slight (*petite*, Leibniz), that the greatest effort of attention under the most exceptionally favorable circumstances would fail to make the subject aware of it, so that he could answer the question which of two alternative characters it had, and yet if the subject was required to answer at random, in 60 percent of the cases his answer agreed with the objective fact. Upon this phenomenon, P, in 1887, in a communication [P 352] to the American Society for Psychical Research, based an attack upon the

L107:12 book called 'Phantasms of the Living,' and was drawn into a considerable controversy with Mr. E. W. Gurney, which is printed in the Proceedings of that Society [O 353, P 354, O 381, also P 640]. The same year he contributed a paper [P 347-8] on the evidences of immortality to the volume 'Science and Immortality,' Edited by S. J. Barrows, Boston: 1887, in which he expressed the opinion that current views of cosmology, especially those of Spencer, were unsound in being too thoroughly mechanical.<sup>16</sup> But he thought there was no extant evidence for immortality unless the catholic miracles be admitted to be such. In 1891-3, in the 'Monist' [P 439, 474, 477, 480, 521, 525], he outlined a hypothesis capable of being subjected to inductive tests, which hypothesis, called *tychism*, was that the laws of nature, although real, are results of a process of evolution, and as such are not yet and never will be exactly fulfilled by the facts, which depart from the laws in the same way, although vastly less than, observations do.<sup>17</sup> He had intended to complete this series of papers



**L107:13** by one or more concerning *Synechism*, but was not encouraged to do so. In 1896 in two articles [*P* 620, 637] in the 'Monist' reviewing Schroeder's *Algebra der Logik*, he described a logical method called *entitative graphs*, using diagrams<sup>18</sup> instead of algebraic symbols. He also considered the foundations of the logico-mathematical doctrine of multitude, the so-called 'cardinal numbers' of G. Cantor, and proved that every multitude is exceeded by another multitude and that the infinite multitudes form a single simple wohl-geordnet series, or as he would say in English, a simple Cantorian series. Beyond that series the individual members of collections lose their separate identities in consequence of becoming essentially indefinite, and the multitude passes into continuity.<sup>19</sup> In 1901 in a review [*P* 802] of the first three chapters of Pearson's 'Grammar of Science,' in the *Popular Science Monthly*, P

**L107:14** argued for the reality of natural law and against the doctrine that we reason from 'first impressions of sense.' In 1903, in connection with a course of lectures [*P* 1005] on Logic before the Lowell Institute in Boston, he wrote a 'Syllabus of Logic';<sup>20</sup> but it was only in part printed owing to the small fund for the purpose. In the same year he gave a course of lectures [*P* 1004] in Harvard University on *Pragmatism*. In 1905 he expects to publish one article (and hopes that more may be accepted) in the 'Monist' on Pragmatism.<sup>21</sup> P wrote all the philosophical definitions in the *Century Dictionary* [*P* 373], and some of these relating to logic in Baldwin's *Dictionary* [*P* 761-78, 806-970].

Although Peirce is much given to raising doubts about his own philosophy,<sup>22</sup> yet the alterations it has undergone since 1866, except for the introduction of the problematical tychism and a few minor

**L107:15** corrections (of which the most important relate to the precise nature, definitions, and grounds of validity of induction and abduction), and an increasing insistence on the exclusion of psychological premisses from logic, consist in the extension of his inquiries to new problems and the greater fullness of his positions. In order to understand his doctrine, which has little in common with those of modern schools,<sup>23</sup> it is necessary to know, first of all, how he classifies the sciences.<sup>24</sup> He divides all science into Science of Research, Science of Review (comprising such works as those of Comte and Spencer, and the doctrine of the classification of the sciences itself), and Practical Science. That of the third branch, though elaborately worked out, need not detain us; and that of the second has not engaged his attention. The clas-

L107:16 sification of Science of Research is shown in outline in the following scheme.

MATHEMATICS<sup>25</sup>

PHILOSOPHY

Phenomenology, or Ideoscopy

Normative Science

Esthetics

Ethics

Logic

Speculative Grammar

Critic

Methodetic

Metaphysics

L107:17

IDIOSCOPY (Bentham), or SPECIAL SCIENCE

Physics

Nomological Physics, i.e. Physical Geometry, Dynamics,

General Physics, etc.

Classificatory Physics, Chemistry, Crystallography, Biology, etc.

Descriptive Physics, Geognosy, Astronomy, etc.

Psychics

Nomological Psychics, i.e. General Psychology, Psychical

Chrononomy, etc.

Classificatory Psychics, Special Psychology, Linguistics,

Ethnology, etc.

Descriptive Psychics, History, Criticism, etc.

This classification (which has been worked out in minute detail) is to be regarded as simply Comte's classification, corrected. That is to say, the endeavor has been so to arrange the scheme that each science ought to make appeal, for its *general principles*, exclusively to the sciences placed

L107:18 above it, while for instances and special facts, it will find the sciences below it more serviceable. Mathematics merely traces out the consequences of hypotheses without caring whether they correspond to anything real or not. It is purely deductive, and all necessary inference is mathematics, pure or applied. Its hypotheses are suggested by any of the other sciences, but its assumption of them is not a scientific act. Philosophy merely analyzes the experience common to all men. The truth of this experience is not an object of any science because it cannot really be doubted. All so-called 'logical' analysis, which is the method of philoso-

phy, ought to be regarded as philosophy, pure or applied. Idioscopy is occupied with the discovery and examination of phenomena, aided by mathematics and philosophy. It is extremely doubtful which of its two wings should be placed first. The three main branches of philosophy are distinguished as follows. Phenomenology considers the phenomenon in general, whatever

**L107:19** comes before the mind in any way, and without caring whether it be fact or fiction, discovers and describes the elements which will invariably be present in it, that is, the categories. Normative science considers the phenomenon only so far as it can be controlled, compares purpose with performance, and ascertains the general principles of the relation between them. Metaphysics is still more special, only considering the phenomenon in so far as it is a sign of what is real. [The first of] The three branches of normative science, or the science of the phenomenon in so far as it is controllable, philosophical esthetics (which becomes something very different from the study which the noun usually designates)[,] studies the characters which will belong to the phenomenon so far as it is controllable, that is, the characters of what is aimed at. Thus, the question, What is the *summum bonum*, is regarded as an esthetical

**L107:20** question. If pleasure be defined as that quality of feeling which is common and peculiar to all experiences that we desire, P is inclined to deny that there is any such thing as pleasure, and to think that that which is common and peculiar to such experiences is an intellectual character, the realization of the ideal, or reasonableness. Ethics studies in the controllable phenomenon the act and process of controlling it. This study is the very heart of normative science, and emphasizes more strongly than the others that dichotomy which is the constitutive characteristic of normative science. For it is the study of the controlled and the uncontrolled as they appear in effort and resistance. This abstract ethics which can derive no principle from metaphysics or from psychology can plainly have little in common with ordinary ethics. Logic is of a much more special kind

**L107:21** for it studies the relation of the phenomenon to the essential character of the phenomenon as controllable, that is, its reasonableness, or embodying an idea. That which embodies an idea is a sign, and it is best to make logic the science of the general properties of signs.<sup>26</sup> Since P maintains that every thought, percept, image, feeling, etc. is a sign[,]

ordinary logic, so far as it can be separated from metaphysics and psychology will be included in the abstract logic. Finally, under the head of metaphysics will be included, not merely ontology, but also whatever philosophy can determine respecting causation, the freedom of the will, the connection of mind and matter, optimism or pessimism, immortality, theology, time and space, etc.

Peirce's studies of philosophy have mostly been concerned with

L107:22 [\*\*\*\*] phenomenology, logic, and some parts of metaphysics. In phenomenology, he is of opinion that there are two sets of categories, a long list and a short one; and he admits that there may possibly be still others. Though he devoted two years to the study of the long list, he attained no satisfactory results. The shorter list is called by [the] easily remembered designation of the *cenopythagorean categories*.<sup>27</sup> These are *Firstness*, *Secondness*, and *Thirdness*. *Firstness* is the mode or element of being by which any subject is such as it is, *positively* and regardless of everything else; or rather, the category is not bound down to this particular conception but is the element which is characteristic and peculiar in this definition and is a prominent ingredient in the ideas of quality, qualitateness, absoluteness, originality, variety, chance, possibility, form, essence, feeling, etc. *Secondness* is that mode or element of being

L107:23 by which any subject is such as it is in a second subject regardless of any third; or rather, the category is the leading and characteristic element in this definition, which is prominent in the ideas of dyadic relativity or relation, action, effort, existence, individuality, opposition, negation, dependence, blind force. *Secondness* has two grades, the *genuine* and the *degenerate* (just as a pair of rays is called a "degenerate" conic) and this is true in several ways. Every genuine *secondness* has two correlative aspects, of which one is more active or first, the other more passive or second; and these two together make a total *secondness* between two correlative subjects. There is a long chapter of these dichotomic distinctions of *secondness*. *Thirdness* is that mode or element of being whereby a subject is such as it is to a second and for a third; or rather, it is the characteristic ingre-

L107:24 dient of this definition, which is prominent in the ideas of instrument, organon, method, means, mediation, betweenness,<sup>28</sup> representation, communication, community, composition, generality, regularity, continuity, totality, system, understanding, cognition, abstraction,

etc. That the three categories are independent of one another is proved as follows. Secondness involves Firstness, but it is discriminated from it by the circumstance that we may consider non-relative characters of subjects neglecting their dyadic relations. But a dyadic relation cannot be a result of non-relative characters, since if it were so there would be, besides the possession of non-relative characters of two objects, some connection between these facts; and this would be itself a dyadic relation. So Thirdness involves Secondness and thereby involves Firstness too; but it can be discriminated from Secondness by the circumstance that Secondness may occur either with or without Thirdness. Thirdness cannot be reduced to Secondness and Firstness, since if this were possible every triadic relation could be expressed in terms of dyadic relations and of non-relative attributions. Now no triadic relation can

L107:25 be so expressed, for it would appear in such expression as a composite relation formed of dyadic relations. Now composition is itself a triadic relation. On the other hand, there is no independent Fourthness<sup>29</sup> or more complex mode or element of being; since it is easily demonstrable that every tetradic relation consists in a compound of triadic relations. Thirdness is subject to two grades of degeneracy. All genuine thirdness has a mental character.

Logic is by P. made synonymous with semeiotic, the pure theory of signs, in general. Its first part, speculative grammar, corresponding to stecheology (Elementarlehre), classifies and describes signs. A sign is anything, A, in a relation, *r*, to something, B, its *object*, this relation, *r*, consisting in fitness to determine something so as to produce something, C, the *interpretant* of the sign, which shall be in the relation *r* to B, or at least in some analogous relation. Thus, the sign involves the idea of a possible endless series of interpreta-

L107:26 tions. In what relation this entire series, taken as a whole, stands to the object, B, depends upon circumstances.<sup>30</sup>

[End of MS L107 main draft]

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[Variant pages]

[\*A]

L107:27 PEIRCE, Charles Santiago Sanders, b. Cambridge, Mass. 1839 Sep. 10, son of Benjamin P. the leading American mathematician of his

day, and his wife Sarah Hunt Mills P. dau. of U. S. Senator Mills (the predecessor of Webster) who died early in Northampton, Mass. where he had established a noted law school. C.S.P. took the degrees of A.B. (1859), A.M., and S.B. in chemistry in Harvard. From Boyhood he has been devoted to Logic, considered as the theory of reasoning, especially in science, and of logical analysis. Moved chiefly by his desire to obtain an intimate knowledge of scientific reasoning, he made original investigations in the history of the pronunciation of English (N.A. Rev. 1864) [P 13], Multiple Algebra (Proc. A.A.A.S. 1875-7 and Am. J. of Math. 1882), Colors (Am. J. Sci. and A. 1877) [P 100], the Doctrine of Chances (N.A. Rev. [P 21], and Pop. Sci. Monthly, 1878), Certain Phenomena of diffraction Spectra [P 134] (Am. J. Math.), and as an officer of the U.S. Geod. Survey of gravity.

[\*B]

L107:28 Charles Santiago Sanders Peirce (b. 1839) son of the mathematician Benjamin P., reared in circle of physicists and naturalists, and specially educated as a chemist, laid the foundation of his philosophical conceptions in a study of the K.d.r.V. Accepting unreservedly Kant's opinion that metaphysical conceptions can only be the conceptions of formal logic in different application, he was struck with the want of thoroughness of Kant's study of formal logic, and undertook a reexamination of the subject. In 1864, he was appointed lecturer on logic in Harvard University, and devoted his lectures to the criticism of the reasoning of physicists, as he did a course in 1866 before the Lowell Institute in Boston. In 1867 he published a classification of reasonings (in which he reduced all reasoning to substitution, an idea afterward followed out by Taine), a New List of Categories (Firstness, Secondness, Thirdness), an improvement of Boole's algebra of logic, etc. He had, by his studies of physical reasoning, already been led to question the rejection by modern philosophers of any mode of real being

L107s:04 other than individual existence and actual happening; and studies of Aquinas, Scotus, Ockham, etc. led him to a rejection of nominalism expressed in three papers in the Journal of Speculative Philosophy (Vol II) and in the North American Review for October 1871 (Review of Frazer's Berkeley). In 1870, he produced a memoir on the application of Boole's principles to the logic of relations; and the study of this branch of logic profoundly modified his conceptions of logic. In 1877 he put

forth in two articles in the *Revue Philosophique* the principle which he called pragmatism, namely that an intellectual concept is nothing but a concept of a purpose that might be entertained under conceivable circumstances. Having been appointed Lecturer on Logic in the Johns Hopkins University, he gave in 1882, his account of the validity of induction in an essay contained in the volume 'Studies in Logic by members of the Johns Hopkins University,' where he maintained that the inductive conclusion derives no probability from its premisses, and that the warrant for

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**L107s:01** In 1868 he contributed three papers to W. T. Harris's 'Journal of Speculative Philosophy' in which he insisted that while it is necessary to be deliberate, circumspect, and critical in adopting any opinion, and to be upon the alert for symptoms of error in our belief yet that which we do not genuinely doubt cannot possibly be subjected to any real criticism,<sup>31</sup> and that which we never have doubted neither has nor needs any logical support. For instance, to say that a mathematical demonstration rests upon or appeals to a logical principle is meaningless except in the sense that a certain similarity or affinity of form may be traced between the demonstration and the principle. For the demonstration being evident, it can no more be supported by a principle of logic than the principles of logic can be supported by the demonstration. Hence, philosophy can have no other starting point than the total of beliefs which we bring to it. Moreover, it cannot never [should read 'ever'] be good logic to suppose any

**L107s:02** principle to be first or ultimate. For that is to suppose it inexplicable, while no hypothesis is acceptable for any other reason than that it explains the known facts. Resting on these principles, he offered various proofs of the following propositions; 1st, that we have no power of immediate introspection. That every experience has a double aspect is a datum of perception; and this double aspect is well explained in all its features by the theory that we are conscious. But that we are conscious is an inference, not a datum of perception. 2nd, there is no cognition which is logically first, but every cognition is logically determined by previous cognitions. 3rd, all cognition is of the nature of a sign, and must be interpreted in a subsequent cognition to be a cognition at all. In this absolutely present instant there is no cognitive consciousness. 4th, of the absolutely incognizable there is no conception of any description. Upon

these four propositions he based a doctrine of *Synechism*, or principle of the universality

**L107s:03** of the law of continuity, carrying with it a return to scholastic realism. From the same propositions he deduced the different modes of validity of the different kinds of logical inference. In 1870, in the *Memoirs of the American Academy of Arts and Sciences*, he first enlarged the Boolean algebra of logic so as to render it applicable to the logic of relations; and he developed this branch of logic further than DeMorgan had done. In October 1871 in a review of Frazer's Edition of Berkeley in the *North American Review*, he argued further against nominalism. In 1877 and 1878 in a series of articles in the *Popular Science Monthly* (of which two also appeared in the *Revue Philosophique*) he first put forth the doctrine of *Pragmatism*, as he called it, according to which every concept proper (as distinguished from a feeling, image, or percept) is fully interpretable in terms of conceivable conduct; that is to say, the difference between asserting or denying the applicability of the concept of a given subject, amounts precisely to saying that

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**L107:30** it consists solely in the fact that the reasoning proceeds according to a method which, persisted in, must correct any error of that conclusion in the speediest manner. At the same time he developed in the same volume and in the *American Journal of Mathematics*, a universal algebra of logic and an algebra of dyadic relations, the latter of which forms the subject of the third volume of Schröder's *Algebra der Logik*. He also published a paper on the Logic of Number in which he distinguished between finite and infinite collections substantially as Dedekind did six years later, and deduced the Fermatian method of reasoning about integers from the conception of *correspondence*, or substantially Gauss's *Abbild*. (His earlier Quincuncial projection showed that [delete 'that'] his familiarity with this conception.) His father had in 1870 distributed a work called 'Linear Associative Algebra.' In 1882, the son edited a new edition of that work [P 188] in which he showed its connection with the

**L107:31** logic of relations. C. S. Peirce regards universal science, or Cenoscopia (Bentham's word), as consisting of Mathematics, which merely studies hypotheses without any concern for their truth, and Philosophy, which studies whatever can be inferred from ordinary experience. He



makes Philosophy to consist of, 1st, Phenomenology or Ideoscopy, which analyzes ideas without inquiring into their truth, 2nd, Normative Science, and 3rd, Metaphysics. Of the normative sciences, Ethics depends upon Esthetics, and Logic upon Ethics; but he insists that logic must make no use of the conclusions of metaphysics and still less of those of psychology. He regards logic as the science of signs in general. Every sign is in a triadic relation to an object and to an interpretant, which is brought by the sign into a relation to the object similar to the sign's relation to the same object. But it is necessary

**L107:32** to distinguish between the object as it is represented by the sign, and the object as it is in itself. It is also necessary to distinguish between 1st, the interpretant as it is intended to be determined by the sign, 2nd, the interpretant as it is related to the object, and 3rd, the interpretant as it is irrespective of the peculiarities of the sign and the object. Signs are divided by trichotomy in six partially independent ways; in one way, according to their own mode of being, in two ways according to their relation to their objects, and in three ways according to their relation to their interpretants. It may be mentioned that Peirce regards a proposition, by which he means the substance of a judgment considered as abstracted from the assent to it or dissent from it, a symbol which has a part by which it separately *indicates* its object while it also *signifies* this object in another way. The genus is the *dicisign*.

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**L107s:07** phenomenology and logic, and in a lesser degree with some parts of metaphysics. As to phenomenology, he is of opinion that there are at least two sets of categories. After devoting two years to the study of one of these, which corresponds with Hegel's categories, he became discouraged by the difficulty of attaining any satisfactory approach to certainty, and abandoned the subject. On the other hand, he has found another set, corresponding to Hegel's three stages, more easy to investigate and extremely useful. He calls these the *cenopythagorean categories*. They are three in number, *Firstness*, *Secondness*, and *Thirdness*.

**L107:05** [/ / was struck out of this sheet—Peirce apparently decided to delay the discussion of categories; the stricken portion continues on 914:02]

*/Firstness*, or the mode of being of that which is such as regardless of anything else, as exemplified by simple Qualities of/

914:02 feeling; *Secondness*, or the mode of being of that which is such as it is relatively to a second object but regardless of any third; and *Thirdness*, or that which is such as it is in bringing a second into relation to a third. That thirdness cannot be reduced to any combination of secondnesses follows at once from the fact that combination is itself a triadic relation; so that a combination of secondnesses would itself involve an irreducible thirdness. On the other hand, their [*sic*] can be no irreducible Fourthness or mode of being defined by a relation between more than three correlates, since it is easily shown that every such relation is definable as a triadic relation among triadic relations. The most characteristic form of thirdness is that of a *sign*; and it is shown that every cognition is of the nature of a sign. Every sign has an object, which may be regarded either as it is immediately

914:03 represented in the sign to be and as it is in its own firstness. It is equally essential to the function of a sign that it should determine an *Interpretant*, or a second correlate related to the object of the sign as the sign is itself related to that object; and this interpretant may be regarded as the sign represents it to be, as it is in its pure secondness to the object, and as it is in its own firstness. Upon these considerations are founded six trichotomic divisions of signs (of which only two were recognized in 1867). For in the first place a sign may, in its own firstness, either be a mere idea or quality of feeling, or it may be a 'sinsign,' that is, an individual existent (and P. holds, with Hegel, that existence consists in the blind reaction of the existent with the rest of the universe in which it exists), or it may (like a word) be a general type ('legisign') to which existents may conform. In the

914:04 second place a sign may, in its secondness to its object as represented (according to the statement of 1867, which may have indirectly influenced Stout's<sup>32</sup> psychological division of signs) either, as an 'Icon,' be related to that object by virtue of a character which belongs to the sign in its own Firstness, and which equally would belong to it though the object did not exist, or, as an 'Index,' may be related to its object by a real secondness, such as a physical connection, to it, or it may, as a 'Symbol,' be related to its object only because it will be represented in its interpretant as so related, as is the case with any word or other

conventional sign, or any general type of image regarded as a schema of a concept. In the third place, a sign may, in its secondness to its object as the latter is in its own firstness, be a sign of an idea or quality, or of an individual existent (including an event), or of a general type. In the fourth place, a sign may, in its thirdness to its object for its interpretant as the latter is

914:05 'meant' to be by the sign, either determine that interpretant

[end of MS 914]

#### NOTES

1. "Santiago" was not a part of Peirce's surname or given names. He began inserting it during this period of his life no doubt as a tribute to his long-standing and loyal friend (but sometime intellectual opponent), William James—"Saint James"—who persisted in helping Peirce obtain significant public exposure through lectureships, and who organized a modest but vital fund for Peirce's support (Eisele 1979:1-10—other essays in this volume provide excellent biographical material as do the essays of Max H. Fisch listed in *Comprehensive Bibliography*, 248-250).
2. It would be difficult to overestimate the importance of Benjamin's significance and importance for Charles's life and career. See Eisele 1979:118-132.
3. Esposito 1980 gives a fine account of this Germanic influence.
4. The extent to which Peirce was an "exact thinker," in philosophy, in science, in mathematics, and in semiotic, has not generally been appreciated. One might consult especially volume 3 of the *Collected Papers*, or for a general guide see essays 22 and 27 in Eisele 1979. Additional newly published material by Peirce on this theme is abundant in the *New Elements of Mathematics by Charles S. Peirce*.
5. What is here called "geometrical reasoning" is probably the same as what is elsewhere called "diagrammatic thought." For Peirce, diagrammatic thought is the distinctive mode of reasoning of mathematics. It is a scientific procedure in that it incorporates experiment and observation, just as all science does. As we shall see, mathematics is used in all subordinate sciences, which includes semiotic; thus, on Peirce's system, semiotic presupposes and uses diagrammatic thought. See *NEM* vol. 3, sec. 7; *CP* vol. 4.
6. The three parts of logic (which is equivalent to semiotic) for Peirce are Critic, Analytic, and Methodetic (or equivalent names). Of the three, he saw himself devoting most of his life energy to the last division. The equation of critic and mathematics here is very interesting, for it seems to be yet another confirmation of Eisele's Law (see Ketner forthcoming *Historia Mathematica*).
7. Pragmatism was Peirce's original coinage, which in the hands of others was kidnapped and made to mean something different than he intended, so that around 1905 he began to call his own doctrine Pragmaticism, according to his long-standing and well-worked-out position concerning the scientific importance of the Ethics of Terminology, a subdivision of the ethics of science. He did not invent the ethics of

terminology, but traced its development from the history of science, while adding significant details and generalizing the doctrine so it would apply to all sciences, including philosophy and logic.

8. This theme, that relations involving four or more correlates can be reduced to compounds of triadic relations, reappears in Peirce's works. He often claimed to have proven this thesis, but students of the matter have been skeptical. However, recently Herzberger 1981, by looking into some of the newly published manuscript resources such as *NEM*, and through following a sound principle of interpretation (listen to what Peirce actually said, in his own terms, and not to what he is *supposed* to have said), seems to have resolved the issue quite adequately in Peirce's favor. This sentence in L107 seems to be further independent evidence in favor of part of Herzberger's thesis. Compare *MS 914*.

9. See Dauben 1981 and relevant parts of *NEM*.

10. *P 296* begins with a discussion of sign theory.

11. See Peirce's reviews of Schröder at *P 620* and *637, 627, 449*.

12. This is *P 188*, "Linear Associative Algebra," by Benjamin Peirce, with notes and addenda by C. S. Peirce, pp. 97-229 in the fourth volume of *American Journal of Mathematics*. Charles did a great deal of work on this project, and probably would deserve to be listed as coauthor (for background on this important work in the history of algebraic theory, see Smith and Ginsburg 1934:119-124). This and his sizeable physical works on gravity and related topics (published in government reports, principally *P 77, 95, 96, 128, 160, 161, 183, 253-256, 261-263, 290, 315, 316, 334-336, 369, 385*) are forceful counterexamples to the often heard ritual litany that Peirce "published only one book" (referring to *Photometric Researches, P 118*); if the complaint is by a philosopher, the phrase "and he finished no book on philosophy" is usually added. Peirce, as we shall shortly see, thought philosophy was a subdivision of science, not something separate. Moreover, within the philosophic division of science, he completed many series of published papers, as summarized in this autobiography, each series being as worthy of the title "book" as many modern essay collections. Furthermore, many manuscript units are virtually finished books. This can already be seen in *NEM*. Additional stunning evidence will begin to appear shortly within the volumes of the distinguished new edition of Peirce's writings to be published by Indiana University Press.

13. On Peirce's theory of induction, see Miller 1981.

14. Peirce was a member of the National Academy of Sciences during most of his adult life, and was active in affairs of the Academy and in its meetings, serving on its committees, and even holding research grants from it.

15. For an account of Peirce's status as the first experimental psychologist in the United States, see Cadwallader 1974 and 1975.

16. For further critiques by Peirce of mechanism, see *P 474* and *525*.

17. See Davenport 1981 for some further details.

18. The theme of diagrammatic thought will eventually be recognized as very important for gaining a full understanding of semiotic. It is clear that Peirce often used diagrammatic methods to illustrate many of his points about semiotic, his favorite method in later years being the Existential Graphs. Thus, semioticians who wish to understand Peirce's semiotic must take the effort (not a particularly difficult one) to learn at least the basics of Existential Graphs. See Roberts 1973, 1981; *SS; NEM; CP 4*; Ketner forthcoming *Semiotics 1980*, forthcoming *Historia Mathematica*, 1981a.

19. See Potter and Shields 1981.
20. This syllabus survives as *MS* 478. It is one of the important manuscripts for semiotic. Parts of it were published in *CP*, but broken into pieces and out of order. A pamphlet was published, which amounted to small excerpts from the whole—see *P* 1035.
21. Additional major papers by Peirce in the *Monist* are: *P* 1077–80 in 1905; 1124, 1126, 1128 in 1906; 1171 in 1908; 1193 in 1909.
22. On Peirce's philosophic self-doubts, see Fisch 1981b.
23. It seems to me that we still have difficulty in interpreting Peirce correctly because we often think of his work as being somehow in tune with the prevalent thought style of our era, which it is not. We can easily (and with considerable reward) begin to construct a correct understanding of Peirce's work (something we yet lack) by proceeding in a scientific manner.
24. For Peirce's status as a man of science, see *CP* vol. 1, *NEM*, and *P* 779. By this phrase, I don't mean Peirce's reputation as a man of science, but I mean to say that a man of science was what he was, and that that is how he saw himself. Persons who have had no actual significant experiences with laboratory methods have a handicap to overcome in achieving an understanding of Peirce's works.
25. That Peirce places Mathematics at the top of the list is very important. To bypass this fact is to seriously misunderstand him, and this is particularly true for semiotic. See Eisele 1979, secs. 27 and 29.
26. For an account of the development of Peirce's theory of signs, see Fisch 1978.
27. The development of Peirce's categories, including themes in phenomenology and metaphysics, is given in Esposito 1980.
29. Herzberger 1981 has an excellent discussion of this matter.
30. The fact that Peirce mentioned only one of the three divisions of semiotic (logic) suggests that in a final draft there would have been at least a few more sentences about Critic and Methodeutic. For an account of how Peirce's whole career was focused principally on Methodeutic, see for a start, Peirce's letter to Kehler, *NEM* 3:159f especially 207. He did not simply study the nature of Methodeutic from his armchair—he proposed to learn more about it by immersing himself in its actual life (through his various scientific careers, which were not accidents, but planned ways of studying this matter—see variant [\*A]), and by studying its history. Peirce was probably the first important historian of science in the United States (see Eisele 1979).
31. Peirce was referring to the body of results he called Critical Common-Sensism (see Ketner 1972).
32. George Frederick Stout (1860–1944), British psychologist and philosopher, editor of *Mind*, author of *Analytic Psychology* (1896) and *A Manual of Psychology* (1899).

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