PEIRCE'S EPISTEMOLOGY

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MARTINUS NIJHOFF / THE HAGUE

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ISBN-13: 978-90-247-1296-0 e-ISBN-13: 978-94-010-2802-8
DOI: 10.1007/978-94-010-2802-8

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PREFACE

This work is an essay in Peirce's epistemology, with about an equal emphasis on the "epistemology" as on the "Peirce's." In other words our intention has not been to write exclusively a piece of Peirce scholarship—hence, the reader will find no elaborate tying in of Peirce's epistemology to other portions of his thought, no great emphasis on the chronology of his thought, etc. Peirce scholarship is a painstaking business. His mind was labyrinthine, his terminology intricate, and his writings are, as he himself confessed, "a snarl of twine." This book rather is intended perhaps even primarily as an essay in epistemology, taking Peirce's as the focal point. The book thus addresses a general philosophical audience and bears as much on the wider issue as on the man. I hope therefore that readers will give their critical attention to the problem of knowledge and the suggestions we have developed around that problem and will not look here in the hope of finding an exhaustive piece of Peirce scholarship.

The problem of knowledge is fundamental, exciting, and of course difficult in the extreme. But Peirce's contribution to our thinking on this subject has been of the first magnitude, both in its substance and in its seminal power. Anyone interested in the philosophy of science, the philosophy of religion, logic, or any other field where the nature and validity of human knowledge are central issues can not help but profit from an exposure to Peirce's original and marvelously incisive examination of the life of the mind. I have never read a philosopher who thought otherwise. The reader may be sure that any time he spends with Peirce, even at second remove as in the case of this book, will splendidly widen his intellectual horizons. And I naturally hope that my own rethinking of the issues involved will not dilute but will rather to some modest degree enrich this essay.

To My Parents

INTRODUCTION

Peirce is a man who has diligently and seriously concerned himself with the major traditional problems of philosophy. Peirce makes an honest effort to examine and to solve them to the best of his ability. His effort to solve some of the great classical problems always has *this* merit: it is honest, forthright, manly, sober and intelligent. One does not have to agree with his conclusions in any given case or in any case at all to be able to recognize the professional spirit in Peirce. He is not a poet; he is not a scoffer; he is not trifling with his readers or with the great issues with which he deals. He is not a pedant or a "scholar" of the unoriginal type who plays with footnotes and toys with subtle interpretations of obscure issues or philosophers. He is not playing games. Rather he is attacking the real problems which have concerned and bothered thoughtful people since the days of Thales.

If one were forced to pick out *one* philosophical problem and call that one problem the *major* problem of philosophy, I would want to suggest that that issue would be the one called *scepticism*. In some sense the major battle has not been so much between *this* view of reality and *that* view of reality as it has been between those who believe that, whatever reality is, it can be known by men, and those who believe that it cannot be. Plato, who, by anybody's reckoning must be placed among the giants of the history of ideas for the thoroughness with which he both raised and discussed virtually all the major issues, had at bottom an anti-sceptical motivation. Aristotle and the Christian philosophers dealt profoundly with the problems of scepticism too, but Descartes was the one who brought the problem of scepticism to the fore in a really dramatic way so that in a real and important sense he can rightly be called the father of modern pholosophy. I will not elaborate further on this theme for it would be a long story to trace the role of scepticism in the thought of the classical philosophers of the Continent and of England, and in modern times the

place of scepticism in existentialism and positivism (both of which schools have, in their own way, embraced the doctrine to a large degree.)

One could probably view the history of philosophy from some other vantage point which would be as interesting and as valid as the one I have suggested. But if one is willing to allow some merit to the point of view I have outlined – and the only merit I am claiming for it is that it is a suggestive way of hanging the whole thing together – then one will have to allow that the central problem of philosophy is logical or epistemological: what is *reasoning,* what is *knowledge,* and how can they be *justified?* Peirce is mainly noted for what he said on the subject of pragmatism, but I believe that the importance the world has attached to that phase of his thought is partly a matter of historical accident – that is, the scholars hit upon a subject of much interest at a particular stage in the development of American thought. For myself, on the other hand, I believe Peirce's greatness lies in his sustained attack upon the intractable problem of knowledge.

Peirce's doctrine of abduction or retroduction is perhaps as great a philosophical insight as any which has ever been made. Peirce says that the doctrine of the association of ideas was among the greatest of philosophical insights, and is it not probable that the notion of abduction is at least as great as that? In fact, the doctrine of abduction subsumes the doctrine of association under itself as a special case in the way Einstein's theories do Newton's.

Peirce never failed to be stimulating and creative, and his more purely metaphysical theories – particularly his doctrine of categories – have these considerable merits. But somehow it seems easier to be sceptical and critical of these aspects of his thought than of his discussion on the nature of reasoning and thinking. Certainly I have not made it a secret in the following pages that I approve of metaphysics in principle, and Peirce's system is perhaps as good as any that has ever been suggested. Still, his system seems very speculative indeed, and we may well sympathize with Peirce's critics who show a marked coolness toward some of Peirce's more Hegelian utterances. But Peirce's long study of logic and his first-hand acquaintance with the scientific method seem to me to have paid off handsomely in his doctrine of abduction – its creative nature, its fallible nature, its self-corrective nature, its tendency toward the truth, its justification of common-sense, its relation to deduction and induction as the most basic thought process. I do not find most students of Peirce seeing the importance, the truly revolutionary importance, of the doctrine of abduction that I see, and I would like to cause some change in emphasis in

this direction. I believe I have Peirce on my side in this, as he seems to give ample hints that he viewed abduction and its consequences and implications as at the heart of what he had to offer the philosophical world.

This present work takes as its particular theme Peirce's assertion (5.348) [1] that the problem of how synthetic reasoning is possible is the "*lock on the door of philosophy.*" Peirce means this quite literally. The first step in understanding Peirce's treatment of this central philosophical question is to examine some of the central positions of Cartesianism. Descartes is rightly called the father of modern philosophy, and for Peirce he is the father of modern philosophy's chief errors. The central assumptions of Descartes' system are, for Peirce, most pernicious errors and have disastrous consequences. To put the whole matter briefly, the foundation of Descartes' system consists in the belief that all knowledge is based upon primitive intuitions. Peirce's alternative to this is that knowledge is a process of flowing inferences.

Peirce divides synthetic reasoning into two divisions, inductive and abductive. The latter, original with him, is understood as the hypothesis-building process. Our second chapter is concerned with examining this form of reasoning. In that chapter we also try to shed some light on the longstanding problem in Peirce interpretation concerning his pragmatic criterion for the exclusion of meaningless hypotheses. We argue that his pragmatic maxim was always meant by him to be interpreted in a very wide sense and never in a positivistic sense. One of the few times Peirce ever admitted making a mistake is when he confesses that he was in error in stating once that his pragmatic maxim was too nominalistic. His mistake was in thinking that he had made a mistake. When interpreted rightly, i.e., broadly enough, the maxim is neither nominalistic nor positivistic.

The third chapter is an elaboration of Peirce's statement that "*approximation must be the fabric out of which our philosophy has to be built.*" (1.404) Paradoxically, the admission that all ampliative (synthetic) reasoning is fallible, instead of leading one into a sceptical position, points the only way out of scepticism. In this section two other thoughts are developed: (1) Knowledge is a self-corrective process; (2) Knowledge grows organically and not from primitive axioms.

The fourth chapter examines the role of instinct in the abductive pro-

[1] Charles Sanders Peirce, *Collected Papers of Charles Sanders Peirce*, edd., Charles Hartshorne and Paul Weiss (Cambridge: The Belknap Press of Harvard University Press, 1960). Citations in the text will be to this work and will follow the standard form: the first number indicating the volume, and the second the paragraph.

cess. The fifth chapter concludes with some general reflections upon the wider implications of Peirce's epistemology, especially the way in which his view points the way out of scepticism.

This work is not intended to be a mere exposition. We have felt free to criticize and amplify Peirce's position. Most of our 'critical' remarks are favorable. Against Peirce, however, we suggest that abduction and induction are much more closely related forms of reasoning than he allows. We argue that induction collapses into a form of abduction – which, if true, is all the more to Peirce's credit, since it radically revises an age-old concept in a direction that he was the first to suggest.

Peirce is a delight to study. He argues in a "tough-minded" way for "tender-minded" conclusions. This kind of philosophical creature is a *rara avis*.

CHAPTER I

INFERENCE: THE ESSENCE OF ALL THOUGHT

Charles Sanders Peirce may be classed unambiguously among the "process philosophers," of whom there have been many in American thought – particularly James, Dewey, and Whitehead. A process philosophy has its peculiar advantages and problems, but Peirce applied the idea of process to the phenomenon of *cognition* in a truly radical and original way. For Peirce, the thinking of a thought, or the reading or hearing of a sentence, or even the perception of a sense datum, is analogous to hearing a musical phrase with the sense of flowing from note to note and the relief of the resolution at the end. In this first section we will examine this view – a view which characterizes thought as *inference* in contrast to *intuition* in the Cartesian sense.

The name of Descartes is of primary importance in this connection. Max H. Fisch has rightly said,

> The castigation of Descartes – his faked universal doubt, his intuitions and introspections, his clear and distinct ideas, his dualism, his exaggeration of the ego, his mechanization of nature – has been a constant theme of American philosophy . . . Rightly or wrongly, all the evils of modern philosophy have been fathered upon him." [1]

Peirce was among the first of the American philosophers to attack the presuppositions of Cartesian thought. It was one of his very earliest philosophical themes. His famous paper on Cartesian philosophy, "Questions Concerning Certain Faculties Claimed for Man," appeared in the *Journal of Speculative Philosophy* in 1868, when Peirce was twenty-nine years old. This paper is worthy in every way of its author and betrays no youthful shallowness. Almost every study of Peirce's philosophy commences with an examination of this essay on "Faculties" and its sequels. This work will be no exception.

[1] *Classic American Philosophers* (N.Y.: Appleton-Century-Crofts, Inc., 1951), p. 20.

There are good and pressing reasons for thus commencing a study of Peirce. In the first place, Peirce's "Faculties" essays are among the very few of Peirce's writings in which he was able to stick very closely to his subject and to follow a line of argument straight through without long, if interesting, diversions, as was his usual habit. More important than that, the essays provide an exceptionally good introduction to many of Peirce's most basic epistemological positions. In them he questions, and very effectively questions, some of the axioms or cornerstones of Cartesian philosophy and, by extension, of most modern philosophy – at least up to his time.

Peirce's essays have as their main purpose the proof that all cognitions whatever are inferential in nature and not immediate and intuitional. All thought is in process; it requires time and is continuous. The implications which Peirce draws from these apparently small and trivial points are remarkable for their manifoldness and their suggestiveness. Peirce says that synthesis – the process of inference whence comes all new information – is the key to the door of philosophy. Whether that is true or not, it is certainly true that it is the key to Peirce's system.

It is interesting and important to observe that the doctrine that cognitions are or can be intuitive cuts clear across rationalist-empiricist lines. Traditionally, both of these schools have held to some form of intuition – either of first logical principles (the rationalists) or of raw sense data (the empiricists). Thus it is important to see how Peirce attacks the intuitionist theory and to have some understanding of what he is opposing, before one can hope to see his own alternative either clearly or sympathetically.

A. THERE WOULD BE NO TELLING OF AN INTUITION IF WE HAD ONE

In the first essay of this "Faculties" series, Peirce poses this question:

> Whether by the simple contemplation of a cognition independently of any previous knowledge and without reasoning from signs, we are enabled rightly to judge whether that cognition has been determined by a previous cognition or whether it refers immediately to its object. (5.213)

This proposition is rather technically worded. Peirce's question is really this: Can we tell an intuition from other kinds of knowledge? A cognition that "refers immediately to its object" is an intuition, whereas a cognition that refers to previous cognitions represents a mediate kind of knowledge, as in all processes of deduction or inference. Peirce in his answer denies

that we can distinguish mediate knowledge from alleged unmediated intuitions. He bases this denial upon the wider denial that we have any such thing as an unmediated intuition at all. When its implications are understood, this becomes a very shocking doctrine. Almost every philosopher has held that at least some of our knowledge must be intuitive. If all of our knowledge were mediated, there would seem to be an infinite regress; and knowledge would have no foundation from which developed and mediated knowledge could rise. Descartes held that we have intuitive knowledge of ourselves, and from this base all other knowledge could be developed. Kant, for example, held that the forms, e.g., of space and time, were forms of intuition – immediate and unmediated and fundamental to all other knowledge. And even the empiricists, who rail against other forms of alleged intuitive knowledge, themselves hold that the deliverances of our senses are the most immediate and fundamental sources of knowledge, and that these deliverances are unmediated by any other prior cognitions and therefore are intuitive. Murray G. Murphey rightly estimates the basic importance of this move of Peirce's when he writes:

> The denial of intuition is Peirce's boldest stroke against the British school, for Locke, Berkeley, and Hume all require the existence of intuition as an axiom. Thus Hume based his whole argument upon "our fundamental principle, *that all ideas are copy'd from impressions*," where by "impressions" is meant "all our sensations, passions, and emotions, as they make their first appearance in the soul." To deny this principle undercuts the whole *Treatise*.[2]

For Peirce, an 'intuition' is a "premiss not itself a conclusion." If one denies the existence of any intuitions, then every premise is itself a conclusion, drawn from other premises, and the chain of knowledge must go back indefinitely. Knowledge, in that case, would lack a sure anchor. Moreover, this means that synthetic or ampliative knowledge is not developed or grounded in the way mathematical or analytic knowledge is (wrongly) supposed to be. This, indeed, is the case for Peirce. In fact, for Peirce, this effort to ape the mathematical method has been the very root of philosophical mischief, and has led to most unfortunate consequences. One of these consequences is the effort to find axioms (intuitions) for all knowledge, axioms corresponding for all of our knowledge to Euclid's axioms in a small field of knowledge (geometry), and constituting an indubitable base and foundation for all other knowledge. The second major error, stemming from this effort to ape mathematics, is the attempt to

[2] Murray G. Murphey, *The Development of Peirce's Philosophy* (Cambridge, Mass.: Harvard University Press, 1961), p. 109.

make everyday knowledge as logically air-tight and certain as our knowledge of mathematical systems is (again wrongly) supposed to be. (Human or mechanical errors may be introduced into even deductive reasonings).

Peirce's position certainly requires defense, but it suggests right off a formidable objection to Descartes' view, even if the existence of his intuitions is granted: It suggests the question, can we intuitively distinguish between cognitions that are intuitions and others that are not? This Peirce denies. Historically there has certainly been no agreement on which of our cognitions are intuitive. Surely this is surprising if we really know them intuitively. Moreover, one can ask of any intuitive recognition of an alleged intuition whether it may be mistaken or not. To this question the only possible answer (within the framework of an intuitionist theory) is that it is intuitively certain that the intuition is correct. And this can itself be questioned *ad infinitum*. "Supposing that a man really could shut himself up in such a faith, he would be, of course, impervious to the truth, 'evidence-proof.' " (5.214) If there are no certain cognitive intuitions, it follows immediately that one cannot establish a bed rock upon which to erect human knowledge. The foundation itself may always be questioned. Thus, it is not a true foundation, for such could not be questioned. This argument, once properly understood and appreciated, can by itself make many of Peirce's most difficult doctrines become quite comprehensible and plausible. (This point concerning the infinite regress involved in the quest for certainty will be more fully treated in the section on "Signs" and later, in the section, "Knowledge grows organically," and finally and most thoroughly in our last section, "The Cartesian Circle.")

B. AS A MATTER OF FACT THE MIND WORKS INFERENTIALLY

Having shown that even if primitive intuitions occurred, we should have no way of identifying them, Peirce goes on to show that all *real* cognitions draw upon former ones for their significance, so that all premises are themselves conclusions. Peirce first points out the notorious difficulty witnesses have in distinguishing between what they have really seen and what they have inferred. Professional magicians depend for their living upon the mind's power or compusion to think in certain ways, ways determined by longstanding habit. Everyone admits that dreams arise from the association of ideas, which is to say from previous cognitions, and yet it is not at all uncommon for a person to become confused as to whether something really happened or was merely dreamed. So it is at least clear that even a dream, which as Peirce says, "as far as its own content goes, is

but inferred. This is so because it is inconceivable that any single nerve ending on the retina could give the notion of two dimensional space, and therefore the concept comes from an inference from many single, discrete nerve endings.

> There being, however, a very great number of nerve-points affected by a very great number of successive excitations, the relations of the resulting impressions will be almost inconceivably complicated. Now, it is a known law of mind, that when phenomena of an extreme complexity are presented, which yet would be reduced to *order* or mediate simplicity by the application of a certain conception, that conception sooner or later arises in application to those phenomena. In the case under consideration, the conception of extension would reduce the phenomena to unity, and, therefore, its genesis is fully accounted for. (5.223)

Thus Peirce has developed his argument both against the mind's having any immediate intuitions and against its having the capacity to identify them if it had them. The paper is so far very well argued.

C. KNOWING IS A PROCESS IN TIME

The fact, known to modern physiology, that tones and pains are cognized by the *frequency* of nerve impulses instead of by their intensity is particularly enlightening, because it brings to the fore the crucial role played by time in the cognitive process (as appears from all the above illustrations). According to Peirce's theory, all knowing is inferring, and inferring requires comparison throughout a span of time. Knowing is a *process,* which cannot be immediate and intuitive. Even something as apparently immediate and intuitive as pain is known only by a process of comparison, since the mind judges pain, like tone, by the *frequency,* not intensity, of nerve impulses. (But time is required to judge the intensity of pure quantity too).

In 5.284 Peirce makes the important point that *no* experience whatever is an "instantaneous affair, but is an event occupying time [4] and coming to pass by a continuous process." Instants are mathematical fictions. Moreover, *past thoughts* do not cease to exist instantaneously, but rather fade away ("gradually die out") and follow the law of association as long as they survive. The point which Peirce is raising here goes to the depths of his metaphysical theories, particularly synechism (continuity), to which we shall return. In part, these considerations on the knowing process support

[4] Compare on this point William James' essay, "Does Consciousness Exist?" – W.H.D.

> A continuum of this feeling, infinitesimal in duration, but still embracing innumerable parts, and also, though infinitesimal, entirely unlimited, is immediately present. And in its absence of boundedness a vague possibility of more than is present is directly felt. (6.137*f*)

A man's self, his personality, consists in the unity of his mental processes: "Now the organism is only an instrument of thought.[8] But the identity of a man consists in the *consistency* of what he does and thinks, and consistency is the intellectual character of a thing; that is, is it expressing something." (5.315) [9]

Man's "glassy essence" consists in this process of continuous interpretation of signs. Thus, the sign is the man. (5.314) All thinking is a form of talking to oneself: the self of the present addresses the self of the future. (5.421)

There is no need to suppose that there must necessarily be some kind of deep mystery in saying that thought involves sign activity. A computer uses the "on-off" condition of thousands of cells in order to manipulate information, and puts this information out on sheets of paper full of signs. This is not strictly a mental phenomenon; but if there is a radical difference between living minds and machines, it probably does not lie in the fact that one uses signs and the other does not. Certainly the mind makes use of information stored somehow in the cells of the brain – and the alterations in these cells serve as signs. This is all true regardless of one's view of the mind-body problem.

On the other hand, one cannot say that the *particular signs* employed in the thought process *are* the thoughts. "Oh, no; no whit more than the skins of an onion are the onion. (About as much so, however.)" (4.6) Thomas A. Goudge suggests another analogy: ". . . the matter of thought is signs in the sense in which the chessmen constitute the matter of a game of chess." [10] Signs, says Peirce, are the phenomenal manifestation of ourselves: "This does not prevent [their] being a phenomenon of something without us, just as a rainbow is at once a manifestation both of the sun and of the rain." (5.283)

Peirce sometimes talks like a behaviorist, as when he says, "the man and the external sign are identical," or "my language is the sum total of myself;

[8] Contrast this with Bergson, Dewey, for whom thought is an instrument for the organism. W.H.D.

[9] Compare on this point Whitehead: ". . . the life of man is an historic route of actual occasions which in a marked degree . . . inherit from each other." *Process and Reality* (N.Y.: Harper and Bros., 1929), p. 137.

[10] Thomas A. Goudge, *The Thought of C.S. Peirce* (Toronto: The University of Toronto Press: 1950), p. 237. Actually, the clearest comparison is to say that thoughts are to signs what melodies are to notes.

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