



The Pragmatism of C.S. Peirce

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Introduction

- Lived 1839 – 1914
- Born in Cambridge, Massachusetts
- The son of a research mathematician who encouraged his intellect
- Educated at Harvard
- Contemporary of William James
- Educated as a chemist and employed as a scientist for 30 years
- Not appreciated much during his life
- Now known as an important innovator in logic, math, statistics, scientific methodology and philosophy

Scientific outlook

- “Philosophy ought to imitate the successful sciences in its methods, so far as to proceed only from tangible premisses which can be subjected to careful scrutiny, and to trust rather to the multitude and variety of its arguments than to the conclusiveness of any one. Its reasoning should not form a chain which is no stronger than its weakest link, but a cable whose fibers may be ever so slender, provided they are sufficiently numerous and intimately connected.”
— *Some Consequences of Four Incapacities*, 1868

Community of inquirers

- “Cognitions ... are of two kinds, the true and the untrue, or cognitions whose objects are *real* and those whose objects are *unreal*.... The real ... is that which, sooner or later, information and reasoning would finally result in, and which is therefore independent of the vagaries of me and you. ... This conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of a definite increase of knowledge.”
— *Some Consequences of Four Incapacities*, 1868

The Fixation Of Belief

- Published in Popular Science Monthly, 1877
- Discusses the art of reasoning, how to reason well. Also gives a history of methods of reasoning.
- “The object of reasoning is to find out, from the consideration of what we already know, something else which we do not know. Consequently, reasoning is good if it be such as to give a true conclusion from true premisses, and not otherwise.”
– *The Fixation of Belief*, 1877

Reality is independent of us

- “The question of validity is purely one of fact and not of thinking. A being the facts stated in the premisses and B being that concluded, the question is, whether these facts are really so related that if A were [the case] B would generally be [the case]. If so, the inference is valid; if not, not. It is not in the least the question whether, when the premisses are accepted by the mind, we feel an impulse to accept the conclusion also. ... **The true conclusion would remain true if we had no impulse to accept it; and the false one would remain false, though we could not resist the tendency to believe in it.**”
– *The Fixation of Belief*, 1877

How belief differs from doubt

- Sensation – Believing feels different from doubting.
- Practical (external) – Belief disposes us to act. “The feeling of believing is a more or less sure indication of there being established in our nature some habit which will determine our actions. Doubt never has such an effect.”
- Practical (internal) – Doubt disposes us to alleviate it. “Doubt is an uneasy and dissatisfied state from which we struggle to free ourselves and pass into the state of belief; while the latter is a calm and satisfactory state which we do not wish to avoid, or to change to a belief in anything else.”

The effects of belief and doubt

- “Belief does not make us act at once, but puts us into such a condition that we shall behave in some certain way, when the occasion arises. Doubt has not the least such active effect, but stimulates us to inquiry until it is destroyed.”
- In modern terms, Peirce is a *Dispositionalist*, one who thinks that it is the pattern of actual and potential behavior that is fundamental in belief. Believing that something is the case is equivalent to being disposed to act as though it is the case.

The object of inquiry

- “The sole object of inquiry is the settlement of opinion. We may fancy that this is not enough for us, and that we seek, not merely an opinion, but a true opinion. But put this fancy to the test, and it proves groundless; for as soon as a firm belief is reached we are entirely satisfied, whether the belief be true or false. ... The most that can be maintained is, that we seek for a belief that we shall *think* to be true. But we think each one of our beliefs to be true, and, indeed, it is mere tautology to say so.”
- This is a descriptive statement. Does it imply something normative? *Should* we try to attain truth?

Methods of settling opinion

- Tenacity. I know what I believe, don't confuse me with the facts.
- Problems:
 - Reality will come up and bite you.
 - Other people influence your opinion.
- Authority. The state or the church (or the peer group) tells you what to believe.
- Problems:
 - It causes atrocities.
 - Some will question authority.

Methods of settling opinion

- A Priori. Base your beliefs on something that seems indubitably true. “Systems of this sort have not usually rested upon any observed facts.... They have been chiefly adopted because their fundamental propositions seemed ‘agreeable to reason.’ This is an apt expression; it does not mean that which agrees with experience, but that which we find ourselves inclined to believe.”
- Problems
 - There is no agreement on the starting premises
 - Inquiry is a matter of taste, or fashion

Methods of settling opinion

- Scientific Method. Hypothesis; deduction; experiment; verification by induction, or falsification.
- It is a method “by which our beliefs may be determined by nothing human, but by some external permanency – by something upon which our thinking has no effect.”
- Advantages:
 - Self-correcting
 - Eventually leads to the truth

Scientific method

- Fundamental hypothesis: “There are Real things, whose characters are entirely independent of our opinions about them; those Reals affect our senses according to regular laws, and ... by taking advantage of the laws of perception, we can ascertain by reasoning how things really and truly are.”
- But how do we know there are real things? If the hypothesis that real things exist is the sole support of the method of inquiry, then we would be arguing in a circle.

How do we know real things exist?

- Scientific method does not lead us to disbelieve in real things. The method and the hypothesis are in harmony, and no doubts arise from practicing the method.
- Nobody actually doubts that there are real things.
- We all use the scientific method about many things, and we fail to do so only when we don't know how to apply it.
- “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.”
- (This argument is an example of fibers in a cable of reasoning.)

Truth

- “Truth ... is distinguished from falsehood simply by this, that if acted on it should, on full consideration, carry us to the point we aim at and not astray.”
– *The Fixation of Belief*, 1877

How To Make Our Ideas Clear

- Followed *The Fixation of Belief* in *Popular Science Monthly*, 1878
- Presents an *Operationalist* theory of meaning: A hypothesis is meaningful to the extent that it specifies what we must do to observe certain effects predicted by the hypothesis.

What makes an idea clear?

- Clarity means you can recognize the idea and not mistake it for another.
- Distinctness means that the idea contains in its definition nothing that is not clear. We can give a precise definition of the idea in abstract terms.
- If not well defined, an idea can seem clear without really being so. So we need to define our terms precisely.
- “Nothing new can ever be learned by analyzing definitions. Nevertheless, our existing beliefs can be set in order by this process, and order is an essential element of intellectual economy.”

Belief and practice

- “The production of belief is the sole function of thought.”
- “[When] we find ourselves decided as to how we should act under such circumstances as those which occasioned our hesitation ... we have attained belief.”
- “The whole function of thought is to produce habits of action.”
- “Thus, we come down to what is tangible and conceivably practical, as the root of every real distinction of thought, no matter how subtle it may be; and there is no distinction of meaning so fine as to consist in anything but a possible difference of practice.”

The Pragmatic Maxim

- “It appears, then, that the rule for attaining the third grade of clearness of apprehension is as follows: Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object.”
– *How To Make Our Ideas Clear*, 1878
- This is theory of meaning, not yet a theory of truth.

Examples of clear ideas

- Hardness – Something is hard if it can't be scratched.
- Weight – Something has weight if it will fall if not held up.
- Force – Describes how things change in motion. There is no occult or mysterious entity other than the mathematically describable effects of changes in motion.
- “The idea which the word force excites in our minds has no other function than to affect our actions, and these actions can have no reference to force otherwise than through its effects. ... If we know what the effects of force are, we are acquainted with every fact which is implied in saying that a force exists, and there is nothing more to know.”

Equivalency of beliefs

- “The essence of belief is the establishment of a habit; and different beliefs are distinguished by the different modes of action to which they give rise. If beliefs do not differ in this respect, if they appease the same doubt by producing the same rule of action, then no mere differences in the manner of consciousness of them can make them different beliefs, any more than playing a tune in different keys is playing different tunes. Imaginary distinctions are often drawn between beliefs which differ only in their mode of expression – the wrangling which ensues is real enough, however.”

Truth and the Real

- “The real [is] that whose characters are independent of what anybody may think them to be.”
- “The followers of science are animated by a cheerful hope that the processes of investigation, if only pushed far enough, will give one certain solution to each question to which they apply it.”
- “The progress of investigation carries [different minds] by a force outside of themselves to one and the same conclusion.”
- “The opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth, and the object represented in this opinion is the real.”

Sources

- “The Fixation of Belief” – http://www.bmeacham.com/whatswhat/OP/Peirce_FixationOfBelief.htm
- “How To Make Our Ideas Clear” – http://www.bmeacham.com/whatswhat/OP/Peirce_HowToMakeOurIdeasClear.html
- More at <http://www.peirce.org/>

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