

THE INDUCTIVE ORIGINS OF PHILOSOPHICAL AXIOMS



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My concern in this paper will be to analyze the concept of “axiom” as it is used in Ayn Rand’s approach to metaphysics and epistemology. Rand says:

An axiom is a statement that identifies the base of knowledge and of any further statement pertaining to that knowledge, a statement necessarily contained in all others, whether any particular speaker chooses to identify it or not.¹

In other words, an axiom serves as an heuristic guide to all intellectual endeavors. The attempt to prove them is self-contradictory, their validity is already assumed by the idea that proof is possible. My purpose will be to show the character and implications of Rand’s approach to this subject.

A concept which may seem parallel to “axiom” is that of “*a priori* truth”. The *a priori* may be defined as conceptual knowledge of reality whose origin and validity are independent of perception. Thus, the *a priori* cannot be refuted by experience. At the same time, it differs from analytic truth in that it is held to give substantial knowledge of reality, rather than knowledge of human conventions alone.

A priori knowledge begins as conceptual truth. Thus, it entails the power of the human mind to grasp reality in the form of immediately certain concepts, through some faculty of direct intellectual intuition. Various defining features have been proposed for such intuition; for example, the various forms of the concept “self-evidence”. This knowledge must be thought of either as innate within the mind or as immediately accessible to the intellect by its participation in some aspect of reality apart from experience. In either approach, it must be assumed that realism is valid: that *a priori* knowledge refers to some universal property of reality which is not subject to change, knowledge of which provides direct contact with ultimate and eternal truth.

The usual reaction to this approach to philosophy, which entails the philosopher’s holding the status of a teacher of absolute truth, has been some form of nominalism and empiricism. The nominalist denies that intellectual intuition, universals, and the rest of the realist’s conceptual apparatus, have any validity. In doing so, he can appeal to the diversity of men’s concepts and theories, the fact that men often disagree as to what is self-evident or obvious, the constant creation of new ideas, and similar data. His response to this awareness is skepticism: the belief that knowledge is unattainable, and that men have nothing to guide their actions except conven-

tion. Typically, he goes along with conventions for the sake of convenience, and because he is equally skeptical about the possibility of replacing them by more valid conventions. In his approach, philosophy becomes simply the critical examination and clarification of conventions, aspiring to establish no truth of its own.

NEITHER EMPIRICISM NOR RATIONALISM

Now Rand is clearly not an empiricist; but she is not a rationalist, either. As evidence:

They were unable to offer a solution to the “problem of universals”, that is: to determine the relationship of concepts to perceptual data - and to prove the validity of scientific induction ...

... the philosophers’ ultimate division into two camps: those who claimed that man obtains his knowledge of the world by deducing it exclusively from concepts, which come from inside his head and are not derived from the perception of physical facts (the Rationalists) - and those who claimed that man obtains his knowledge from experience, which was held to mean: by direct perception of immediate facts, without recourse to concepts (the Empiricists).²

In other words, Rand holds that the Empiricists were correct in holding that knowledge derives from perception, while the Rationalists were correct in holding that logical analysis and deduction can produce valid systems of knowledge - and that each group was wrong in the premises that led it to deny that the other group had made any valid claims.

There is at least one other contemporary philosopher who has arrived at this conclusion in the course of original work: Ludwig Wittgenstein. The relationship between their ideas has been suggested by Machan:

The Wittgensteinian notion that essence is expressed in grammar can guide us on the right path, just as the idea that we can get the meaning by looking at the use can. Rand’s contextualism, whereby it is the *context* of human knowledge which gives rise to the meaning of our concepts, is an even more rigorous way of stating the same thing. The point is that we must get away from the idea that only that will count as a viable and defensible notion of something which gives us

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a *timeless* snapshot picture of it which cannot *ever* be revised.³

The notion of a “snapshot” version of meaning as the underlying error which led to the conflict of realism and nominalism is a key to Wittgenstein’s solution. Thus:

There is a tendency rooted in our usual forms of expression, to think that the man who has learnt to understand a general term, say, the term “leaf”, has thereby come to possess a kind of general picture of a leaf, as opposed to pictures of particular leaves. He was shown different leaves when he learnt the meaning of the word “leaf”; and showing him the particular leaves was only a means to the end of producing “in him” an idea which we imagine to be some kind of general image. We say that he sees what is in common to all these leaves; and this is true if we mean that he can on being asked tell us certain features of properties which they all have in common. But we are inclined to think that the general idea of a leaf is something like a visual image, but one which contains only what is common to all leaves. (Galtonian composite photograph.) This again is connected with the idea that the meaning of a word is an image, or a thing correlated to the word. (This roughly means, we are looking at words as though they were all proper names, and we then confuse the bearer of a name with the meaning of a name.)⁴

The point of this analysis is that this notion gave rise both to realism, which tried to show that this general leaf had reality in itself, and to nominalism, which showed that general images couldn’t be coherently described, and argued that therefore there could be no basis for classification other than convention. Eliminate the idea of the general image - of the universal - and it becomes possible to formulate approaches to epistemology which are not vulnerable to the skeptic. Bambrough’s discussion is relevant here:

Wittgenstein denied the assumption that is common to nominalism and realism, and that is why I say that he solved the problem of universals. For if we deny the mistaken premise that is common to the realist’s argument and the nominalist’s argument then we can deny the realist’s mistaken conclusion and deny the nominalist’s mistaken conclusion; and that is another way of saying that we can affirm the true premise of the nominalist’s argument and can also affirm the true premise of the realist’s argument.

The nominalist says that games have nothing in common except that they are called games.

The realist says that games must have something in common, and by this he means that they must have something in common other than that they are games.

Wittgenstein says that games have nothing in common except that they are games.

Wittgenstein thus denies at one and the same time the nominalist’s claim that games having nothing in common except that they are called games and the realist’s claim that games have something in common other than that they are games. He asserts at one and the same time the realist’s claim that there is an objective justification for the application of the word “game” to games and the nominalist’s claim that there is no element that is common to all games. And he is able to do this because he denies the joint claim of the nominalist and the realist that there cannot be an objective justification for the application of the word “game” unless there is an element that is common to all games (*universalia in rebus*) or a common relation that all games bear to something that is not a game (*universalia ante res*).⁵

This view can be linked with Rand’s rejection of the Rationalist/Empiricist dichotomy by seeing that the realist rejects perception because it does not give him the static picture he finds in “self-evident” concepts (this goes back to Parmenides and Plato), while the nominalist rejects analysis because he doesn’t find any ground for believing in static pictures, and thinks of analysis as depending

upon them. When the demand for a fixed image is given up, the problem vanishes. Now, what kind of theory of conceptual knowledge can be worked out without appealing to this premise, and how does it apply to the identification of axioms, as Rand defines them?

“FORMS OF LIFE” AND THE BIOLOGICAL VALUE OF COGNITION

For Wittgenstein, knowledge is ultimately grounded in “forms of life”. A point must be reached at which one says simply: this is how I do it. This point is simply the basis for argument; anyone who questions it is engaging in a wholly different kind of argument. Some types of point, and the arguments or conceptual games founded on them, are optional; others are simply built into being human.

Commanding, questioning, recounting, chatting, are as much a part of our natural history as walking, drinking, eating, playing.⁶

Or, in Stroud’s formulation:

Because these procedures cannot be given “justification”, it does not follow that they are shaky or unreliable, or that we are courting trouble if we decide to engage in them. We do not decide to accept or reject them at all, any more than we decide to be human beings as opposed to trees. To ask whether our human practices or forms of life themselves are “correct” or “justified” is to ask whether we are “correct” or “justified” in being the sorts of things we are.⁷

Rand’s approach resembles this, but goes somewhat farther. In her philosophy, the emphasis is on the biological value of cognition, and on the fact that only certain information-processing procedures can produce conceptual knowledge, which is assumed to be valid in any use of language to argue any philosophical issue. If we did not have the capability to process data in certain ways, we would not be able to argue whether those ways of processing data are or are not valid; to reject them is to reject one’s own status as a proponent of philosophical theories, and indeed as a conscious organism. Because we can play the game of making decisions on conceptual grounds, it is not established that we can decide to reject our own status as rational beings, of which axioms are an elucidation; this decision is self-invalidating.

An axiom is a proposition that defeats its opponents by the fact that they have to accept it and use it in the process of any attempt to deny it.⁸

For Rand, perceptions are the context of all conceptual processes. Concepts have meaning only in their being used to organize perceptions; to deny perception is to deny the source of knowledge. Even the attempt to get outside of perception is based on perception. Concepts are not self-evident, but perceptions are.

A percept is a group of sensations automatically retained and integrated by the brain of a living organism. It is in the form of percepts that man grasps the evidence of his senses and apprehends reality. When we speak of “direct perception” or “direct awareness” we mean the perceptual level. Percepts ... are the given, the self-evident.⁹

For Rand, knowledge necessarily has validity by virtue of its specific biological context, or not at all. To demand knowledge unconditioned by this context is chimerical. This is part of the ground for her rejection of Rationalism and of Kant; in her analysis, their rejections of knowledge traceable to the specific psychological character of an organism is a rejection of the only possible basis for knowledge and is self-refuting.

Also, for Rand, axiomatic concepts - “existence”, “identity”, “consciousness”, which subsume the common features of all experiences and all knowledge - are to be defined by reference to direct perception, i.e. ostensively. They are, in other words, the ultimate “forms of life” not merely of men, but of all conscious beings.

Their peculiarity lies in the fact that *they are perceived or experienced directly, but grasped conceptually*. They are

implicit in every state of awareness, from the first sensation to the first percept to the sum of all concepts. After the first discriminated sensation (or percept), man's subsequent knowledge adds nothing to the basic facts designated by the terms "existence", "identity", "consciousness" - these facts are contained in any single state of awareness ...¹⁰

For Rand, then, epistemology must accept the fact that knowledge can be obtained only on the basis of certain assumptions, which are built into the structure of any nervous system. These forms of life are not arbitrary; without adhering to them, no information-processing system of any kind could function. Our comprehension of what it means to be an information-processing system is based on the fact that we function according to these principles; to hypothesize that they might be invalid is to deny our own right to make hypotheses at all. There are, in Rand's analysis, no innate ideas - and this is her difference from Rationalism - but there are innate principles of analysis and integration, which we know by direct perception. The fact that, having more than one sensation at a time, we are able to make an integrated response to our awareness, is derived from the presence in our minds of these ontological structures.

At any given instant, these structures will automatically integrate sensations into perceptions. A perception is simply the modulation of activity and awareness resulting from the attainment of a coherent response to several sensations - with "coherence" being judged by the capacity of that response to produce a non-contradictory implication for action and attention. But an additional complexity is introduced by the specific biological power of recall memory: that is, by the power not merely to recognize an object as being of a certain kind in its presence, but to think about that kind in the absence of any perceptual stimulus to do so. A primitive level of this power is present in apes; for example, the experiments of Gestalt psychologists have shown that a chimpanzee, in a favorable context, can integrate his awareness of the shape of a stick which is outside of his perceptual field with the practical requirements imposed by his desire to reach a banana outside of his cage, and will then go looking for a stick, bring it back to the bars of the cage, and use it to get the banana. But full development of this power depends on the human capacity to create and acquire propositional speech. The use of arbitrary symbols to refer to classes makes possible a far greater ease of recall, and therefore of thought, without which extended conceptual information-processing is apparently impossible.

RAND AND WITTGENSTEIN

Rand and Wittgenstein are roughly parallel in their analyses of concept-formation. For both of them, consciousness is in essence a process of measurement; that is, of the detection of similarities.

... similarity, in this context, is the relationship between two or more existents which possess the same characteristic(s), but in different measure or degree.¹¹

Thus, for example, blue is more similar to blue-green than to yellow-green, more similar to yellow-green than to orange. Within a given range of possible measurements, whether of color, shape, or more complex features, concept-formation involves marking off certain lesser ranges of measurement and classifying whatever falls within these ranges under a single concept, as being more like each other than like anything outside the range chosen. It is as if the data resulting from sensation, perception or analysis were represented by a point in some psychological metric n-space, and a concept drew boundaries around a cluster of points which appeared close together.

Thus we have a concept, blueness. But blue things are not identical, not even in color: there are countless shades of blue; perhaps no two particular blue things even have exactly the same shade of blue - but yet all blue things are similar to one another in color, and because of this similarity we call them all "blue". We can distinguish blue things from things of all other colors (though there may be some borderline cases), but what makes them all blue is that they are similar

to one another in color, not that they have the same universal, blueness, identically present in all of them.¹²

There is a family of friendly facial expressions. Suppose we had asked "What feature is it that characterizes a friendly face?" At first one might think that there are certain traits which one might call friendly traits, each of which makes the face look friendly to a certain degree, and which when present in a large number constitute the friendly expression ... But it is easy to see that the same eyes of which we say they make a face look friendly do not look friendly, or even look unfriendly, with certain other wrinkles of the forehead, lines around the mouth, etc. Why then do we ever say that it is these eyes which look friendly? ... The answer is that in the wide family of friendly faces there is what one may call a main branch characterized by a certain kind of eyes, another by a certain kind of mouth, etc.; although in the large family of unfriendly faces we meet these same eyes when they don't mitigate the unfriendliness of the expression.¹³

This leads to another similarity; the emphasis on context. For Wittgenstein, "essence expresses itself in grammar",¹⁴ and grammar in turn is a description of use; and the use of a term clearly depends on the data which it serves to deal with, so that what can be arrived at is not a final precision, but rather a discrimination useful for some purpose in some context.

Frege compares a concept to an area and says that an area with vague boundaries cannot be called an area at all. This presumably means that we cannot do anything with it. But is it senseless to say: "Stand roughly there"?¹⁵

For Rand, similarly, the definition of a concept is not the statement either of an arbitrary convention or of a fixed metaphysical absolute, but of a test by which various existents can be placed within or without a category useful in certain cognitive contexts. The definition names the essence of a concept; but the essence is picked out from many other features by the requirements of thought.

Thus the essence of a concept is determined *contextually* and may be altered with the growth of man's knowledge. The metaphysical referent of man's concepts is not a separate, special metaphysical essence, but the *total* of the facts of reality he has observed, and this total determines which characteristics of a given group of existents he designates as *essential*. An essential characteristic is factual, in the sense that it does exist, does determine other characteristics, and does distinguish a group of existents from all others; it is *epistemological* in the sense that the classification of "essential characteristics" is a device of man's method of cognition - a means of classifying, condensing, and integrating an ever-growing body of knowledge.¹⁶

Concepts, then, are characteristically open-ended; they subsume not merely the things which have fallen into their range in psychological space, but everything which will later fall into this range. Further, the range may itself be left open to extension; thus, Wittgenstein:

Why do we call something a "number"? Well, perhaps because it has a - direct - relationship with several things that have hitherto been called number; and this can be said to give it an indirect relationship to other things we call number. And we extend our concept of number as in spinning a thread we twist fiber on fiber.¹⁷

If new types of measurement become possible, then these may replace the old ones in determining where boundaries are drawn; or they may add a set of boundaries which could not have been drawn previously. If new types of existents are discovered, this may also result in a redrawing of boundaries.

It is crucially important to grasp the fact that a concept is an "open-end" classification which includes the yet-to-be-discovered characteristics of a given group of existences.¹⁸

Logical necessity ... is not like rails that stretch to infinity and compel us always to go in one and only one way; but neither

is it the case that we are not compelled at all. Rather, there are the rails we have already travelled, and we can extend them beyond the present point only by depending on those that already exist. In order for the rails to be navigable they must be extended in smooth and natural ways; how they are to be continued is to that extent determined by the route of those rails which are already there. I have been primarily concerned to explain the sense in which we are “responsible” for the ways in which the rails are extended, without destroying anything that could properly be called their objectivity.¹⁹

For Rand, this responsibility of which Stroud writes is uniquely and crucially human, and its recognition and acceptance is the central requirement of reason and virtue; this can be seen as central to her concept of philosophical objectivity.

AXIOMS AND REALITY

The crucial fact about this objectivity - this basic continuity and integrity of awareness - is that it is not automatic. In perception it is, since perception deals only with the data of a single moment; the stability of this awareness is maintained by processes below the level of thought or consciousness, within the psychological present. But the effect of conceptual processes is to compel time-binding, the integration of data from many moments of awareness, which can be carried on as a continuous process over a long span of time relative to the psychological present. It is possible for these integrations to result in conflicting judgements, categorizations, and definitions. If we are to go on taking all of the relevant data into account, then we must work out ways of resolving them.

At first, such resolutions will be largely *ad hoc*, based on trial and error. John Holt gives many examples of this process in *How Children Fail* and *How Children Learn*. What happens is that one follows a line of thought and discovers that it conflicts with another line of thought. By trial and error, then, one traces the lines of thought back until they can be reorganized into a coherent understanding of the situation. (This skill of tracing back may well be present only in a very few cultures, just as the idea of an unlimited series of cardinal numbers is not present in all cultures.) But, gradually, induction will provide for the emergence of concepts identifying the crucial features of this process. This results in the emergence of conceptual systems whose function is precisely the preservation of conceptual objectivity and integrity. These concepts originate from “reflection” rather than from “sensation”, in Lockean terminology; they identify the features of human data-processing which are present in all direct experience, but which must be extended step by step into conceptual thought, without which it leads to irreconcilable conflicts of belief. These concepts are what Rand refers to as “axiomatic concepts”.

It must be remembered that conceptual awareness is the only type of awareness capable of integrating past, present and future. Sensations are merely an awareness of the present and cannot be retained beyond the immediate moment; percepts are retained and, through automatic memory, provide a rudimentary link to the past, but cannot project the future. It is only conceptual awareness that can grasp and hold the total of its experience - extrospectively, the continuity of existence; introspectively, the continuity of consciousness - and thus enable its possessor to project his course long-range. It is by means of axiomatic concepts that man grasps and holds this continuity, bringing it into this conscious awareness and *knowledge*. It is axiomatic concepts that identify the precondition of knowledge: the distinction between existence and consciousness, between reality and the awareness of reality, between the object and the subject of cognition. Axiomatic concepts are the foundation of *objectivity*.²⁰

An axiom, then, is an identification of the metaphysical assumptions which, in implicit form, are the basis of perception, translated into an explicit, conceptual form. Its function is to resolve conflicts of belief, by delimiting the grounds of belief and the range of beliefs which can make sense. An axiomatic concept is a concept about the necessary conditions for conceptual thought; it might be

referred to as a meta-concept, referring not to particular objects but to the general procedures of thought.

Axioms, in Rand’s view, provide knowledge of reality; any claim to the contrary would have to rest on the idea that men can have conceptual knowledge of reality if it were to have any status beyond that of an arbitrary assertion, but this idea itself is one of the axioms which would supposedly be refuted - the most basic of them. Axioms differ from *a priori* concepts, however, in that they don’t originate as concepts, but as features of perception. Thus, they are not vulnerable to the skeptic’s attack on a *a priori* knowledge. Philosophy is the systematic investigation of the content and implications of axioms. Philosophy, in other words, studies the resolution of conceptual conflicts, and thus is within the range of the skeptic’s program of critical analysis; but it goes beyond this range, in that it studies also the assumptions which are involved in such resolution, tests their validity, and thus can claim to represent knowledge of reality in the same way as do the natural sciences. Thus, a philosophical theory can claim to provide systematic knowledge of the universe. This is, in essence, a unification of certain features of the realist and nominalist - Rationalist and Empiricist, dogmatist and skeptical - programs for philosophical investigation; at the same time, it is a rejection of an error common to both - the belief that only *a priori* truths, if they existed, could provide valid philosophical (as contrasted with scientific) knowledge of the world. This is, of course, a special case of the more general conflict of realism and nominalism.

An important feature of this program for philosophy is that it opens it as an intellectual field to creative enterprise. For the function of axioms is to show patterns for the resolution of conflicts; and it is possible for new consequences of axioms to be derived, for new problems to be found to which to apply these axioms, or even for completely new formulations of axioms to be developed. All of these approaches can be compared with similar aspects of mathematical research. In other words, Rand’s approach can be seen as foreshadowing a possibility of regarding philosophical issues as open to debate, innovation, and the introduction of evidence, and yet of coming to objectively valid conclusions in any given context.

NOTES

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16. *Introduction to Objectivist Epistemology*; pp. 49-50.
17. *Philosophical Investigations*; p. 32.
18. *Introduction to Objectivist Epistemology*; p. 60.
19. “Wittgenstein and Logical Necessity”, in *Wittgenstein*; p. 496.
20. *Introduction to Objectivist Epistemology*; p. 53.