CAMUS, SCIENCE, AND METAPHORS

In a philosophical essay, *Le Mythe de Sisyphe,* published in 1942, Albert Camus points out the absurdity of human life and puts forth an argument against those who would link him to existentialism and its doctrine of free choice. Although he states: "I am pessimistic in everything that concerns the nature of man, but obstinately optimistic in all that concerns human action," he is usually remembered for his handling of the problem of nihilism in that work which was of great interest to intellectuals of the 1920's and 1930's. By the time *The Rebel* came along in 1952, Camus had changed his views -- not too surprising since already in *The Myth of Sisyphus* he stated that theories do change, leaving us little time to become indignant [1]-- and he held that solidarity was implied even in an absurdist stand. The only honest reason for a man's putting up with the irrationality of things,therefore not committing suicide, is to be able to feel superior to the forces that crush him.

Let us restate the problem. Camus has examined himself and the world around him, but he still cannot define or summarize or seize the "self":

> This heart within me I can feel, and judge that it exists. There ends all my knowledge, and the rest is construction. For if I try to seize this self of which I feel sure, if I try to define and to summarize it, it is nothing but water slipping through my fingers.[2]

Knowledge would give him some assurance, but he expresses his uncertainty: "All the knowledge on earth will give me nothing to assure me that this world is mine. You describe it to me and you teach me to classify it. You enumerate its laws and in my thirst for knowledge I admit that they are true" (p.15) but how, or why. He asks, shall he "negate this world whose power and strength (he) feels"? (p.15). He has noticed the efforts of the scientists; he is aware of some laws which leave

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[1] A. Camus. *The Myth of Sisyphus.* Tr. from the French by Justin O'Brien. New York: Vintage Book, 1955, p. 15.

[2] Ibid, p. 14.

him undecided. Why? He gives several reasons:

> But you tell me of an invisible planetary system in which electrons gravitate around a nucleus. You explain this world to me with an image. I realize then that you have been reduced to poetry:[3]

And he adds that, if this is the case, he shall never know because, before he can apprehend the truth, the theories will have changed. In this case because

> science that was to teach (him) everything ends up in a hypothesis, that lucidity founders in metaphor, that uncertainty is resolve in a work of art.[4]

These reasons could be stated in the form of an argument, even though it may be questionable whether or not the conclusion follows from the premises. By the way, let us note that some of Camus's contentions appears to be false while some seem actually true. Let us restate his argument:

IF:

1) You tell of an invisible planetary system in which electrons gravitate around a nucleus,
2) You explain this world with an image, and
3) You have reduced science to poetry

THEN

4) Science ends in a hypothesis,
5) Lucidity founders in metaphor, and
6) Uncertainty is resolved in a work of art

THEREFORE

Camus shall never know, and he wonders why he needed "so many efforts."

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[3] Ibid, p. 15.

[4] Ibid, p. 15.

Expressed simply, Camus means:

1) It seems that if the system is invisible, then the theory cannot be subjected to empirical testing; hence, it is only an hypothesis, and not real knowledge.

2) An image is "a representation of anything not actually present to the senses" and a metaphor, a special case of images. For instance, we define a "controlling image"– not illustative– as a "metaphor which runs throughout and determines the form or nature of a literary work"[5]; whereas, a metaphor is "an implied analogy which imaginatavely identifies one object with another and ascribes to the first one or more of the qualities of the second or invests the first with emotional or imaginative qualities associated with the second."[6] In other words, the metaphor can use "the known to express the unknown,"[7] Hence, it is not very clear and may lead to confusion because it boils down to a transfer of application. Again, then, according to Camus, this is not real knowledge.

3) However, metaphors being the main staple of poetry, if this happens to be what is used in science, then science happens to be no more than poetry which is normally – or can be – classified as art. In that case, it turns out that the uncertainty that Camus felt about the world should dissolve in a work of art. However, art does not solve anything– implied therefore but not proven – is the possibility that, through science no real knowledge can be acquired.

Starting with statement 3):

You cannot reduce science to poetry because their aims are different. There is never an intention of explaining a universal truth in poetry – even if the sentiment expressed is true. The aims of science are different. It searches for knowledge, for explanations which will be valid

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[5] Thrall, Hibbard, Homan. *A Handbook to Literature.* New York: The Odyssey Press, 1960, p. 108.

[6] Ibid, p. 281.

[7] Earl R. MacCormac, "Meaning, Variance and Metaphor," *British Journal for the Philosophy of Science,* Vol. 22, No. 2 (1971), p. 149.

for all time and place and which still have predictive values[8]. On occasions, some of the findings may be false, although appearing very logical -- Bode's Law, for instance -- but the main concern was their validity, based on logic. Therefore it is questionable whether or not science is reduced to poetry. Equally false is the contention that poetry, assuming that most of the time poetry is a work of art (!), can resolve uncertainty: It has no pretention to that effect.

A parallel can also be drawn between some of Camus's ideas and some expressed by Hume -- much of what the logical positivists had to say derives from David Hume's analysis of causation. The question Hume asked was: " Could you, from the knowledge of the cause, have deduced logically what the effect would be?" Hume's answer was negative. That a certain effect will occur does not follow logically from the fact that a certain cause has occurred. Hume pointed out that no logical contra-diction would be involved in the supposition that the given effect did not follow from the cause. In assuming that the same cause would follow from the same effect, we are proceeding inductively.

But is induction logically justifiable? Ordinarily, "induction" is used to mean applicative inference as distinguished from explicative; -- i.e., it is the sort of inference which attempts to reach a conclusion concerning all the member of a class from observation of only some of them. Conclusions, inductive in this sense, are only probable, in greater or lesser degree according to the precautions taken in selecting the evidence for them. In short, it is not a truth of logic and some philosophers, including Ayer have felt that the laws of science, because they are arrived inductively, are just hypothesis, "that no proposition, other than a tautology, can possibly be anything more than a probable hypothesis."[9] This could be exactly what Camus meant when he said that "science that was to teach (him) everything ends up in a hypothesis." On

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[8] See detailed article "Studies in the Logic of Explanation," by Carl G. Hempel and Paul Oppenheim. In *The Structure of Scientific Thought.* Boston: Houghton Mifflin, 1960. pp. 19-29. Hempel and Oppenheim give the general characteristics of scientific explanation which has two major constituents: the explanandum and the explanans. The explanandum must be a logical consequence of the explanans; the explanans must contains generals laws; the explanans must have empirical content; the sentences constituting the explanans must be true; and given is the importance of a scientific explanation because of its potential predictive force.

[9] Alfred J. Ayer. Language, Truth and Logic. New York: Dover, 1952, p.38.

this point, it seems hard to beat Camus and Ayer; while it is probable that, since the sun rises every morning, it will rise again tomorrow, is it logical to assume that the fuel will never give out?

Now what about 2) and 5)?

It would appear that other connection or parallel can be drawn with the logical positivists. They had found, they thought, a way to reduce sentences of ordinary language to symbols which can be treated as mathematical language. This development's main effect was to bring closer attention to language, expecially since it was discovered that the deep logical structure revealed when the sentence was translated into symbols, was very often very different from the superficial look of the sentence. In short, the analysis of language was regarded as one of the chief methods of the science of science.

With this as a starting point, Ludwig Wittgenstein set out to explain the relationship of language to the world. In the *Tractatus*, Wittgenstein's main concern was to determine the conditions which any symbolism, qua representation of fact, must necessarily satisfy. Such a "language" must consist of elements combined in such a way as to mirror in a one-to one correspondence the elements and structure of the "world." A crucial distinction was made between "saying" and "showing," in other words, a statement is able to assert a certain state of affairs by virtue of having the same structure as that which it is supposed to represent. The common structure, however, cannot itself be asserted, it can only be shwon IN the symbols. Wittgenstein held that much philosophy consist in trying to say what can only be shown, which turns out to be a misguided proceeding provoked by the failure to understand the logic of language. Because of our difficulties in defining words, it is hard to distinguish meaningful sentences from meaningless ones but Wittgenstein really gave no practical criteria for separating them. As a result of his studies, Wittgenstein concluded that all theories are meaningless -- not necessarily false. This is, of course, Camus's point, too. In trying to define words, we use other words which are metaphors, images. Since metaphors are the backbone of poetry, then is science reduced to poetry? Does lucidity founder on metaphors?

The answer given by Earl MacCormac in the *British Journal for the Philosophy of Science* is negative, not as one might suspect, because science does not use metaphors. Indeed, MacCormac states: "Scientific theories do actually use metaphors is amply confirmed by historians of

science."[10] But because, rejecting the assumption by positivists that terms did not change, he asserts (along with many others) that "meanings of terms are wholly dependent upon the theory in which they occur" (p.145). However, this new application of metaphors which MacCormac calls the "tension theory of metaphor" presents some difficulties. How can we understand the meaning of terms that are changing? Would that not lead to mumbo-jumbo? The point he tries to make is that, on the contrary, "in attempting to describe the unknown, the scientist must use terms that are known to us" (p.150). When using words familiar to us in ordinary language as metaphors, we are able to "stretch their meanings to accomodate new hypothetical understandings," (p.151) without forgetting the "as if" quality of the metaphors. That is, the frequent use of metaphors in ordinary language is dictated by the fact that they readily relate to something we understand. We know, says MacCormac, "what metaphors mean and this is accomplished by the analogies which they makes" (p.153).

Let us try to give some examples, not necessarily in the sciences, but in ordinary language by comparing a man with an eagle:

A - Man looks as if he were an eagle, that is, he has beady eyes and a hooked nose;
B - Man acts as if he were an eagle, that is, he flies (a Cessna 172);
C - Man lives as if he were an eagle, that is, way up on a lonely mountain top;
D - Man screams as if he were an eagle, that is, with a piercing, shrieking voice;
E - Man seeks the heights as if he were an eagle, that is, fame and fortune, etc.

Victor Hugo, in *Odes et ballades,* (Book IV, 17) will indeed use that metaphor to qualify a man as a great inventor:

> L'aigle, c'est le génie! Oiseau de la tempête
> Qui des monts les plus hauts cherche le plus haut faîte

All of these metaphors rest "upon analogies that we have already experienced. They reveal something to us that we have only vaguely

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[10] Op. cit. p. 150.

known."[11] They are epiphoric. Let us now extend the metaphor and push it to the allegorical level. Because the coat of arms of imperial France -- epiphoric sense as in E -- was an eagle holding lighting in his claws, by antonomasy an eagle design represents Napoleon, Emperor of the French. The eagle then acquires the property of the man by interaction of the referents and by suggestion can produce all sorts of meanings, sometimes contradictory. In other words, "the juxtaposition of words suggests possibilities for experience rather than expressing experience that can be tested immediately."[12] As an exemple, let us say that in this case, "the Eagle enjoyed HIS Austerlitz," meaning a great victory; or "the Eagle met his Waterloo," namely suffered a great defeat. At this level then, the metaphor is both epiphoric and diaphoric.

The same type of phenomenon can occur in the sciences. For instance, angular momentum in Bohr's theory "expresses a continuous function," while in quantum mechanics it "expresses a quantised function," meaning discontinuous.

While it is recognized that there are no metaphors that are either purely epiphoric or purely diaphoric, in all cases, "intelligibility is possible because of the epiphoric quality of metaphors."[13]

If we accept this tension theory of metaphors, and I believe MacCormac makes a good case for it, then it would appear that metaphors are necessary to express new theories intelligibly. It is therefore false to claim, as Camus does, that lucidity founders on metaphors.

Assuming then, for the sake of arguments, that Camus's premises 4), 5), and 6) are related to his conclusion, we can then conclude that, at best, his argument is unsound because premise 5) is false.

However, this is only part of the story. Camus was one of the leading figures among writers of his generation -- he was awarded the Nobel Prize for Literature in 1957 -- whether considered as a novelist, dramatist, essayist, or even as a journalist. What he was not was a scientist. When he expressed an opinion about the sciences, he somehow expressed an ideology prevalent at the time among the general public. Interestingly enough, in 1986, at an international colloquium, entitled *Les*

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[11] MacCormac, p.154.

[12] MacCormac, p. 154.

[13] MacCormac, p.158.

Pouvoirs de la Science: un siècle de prise de conscience, held in Nice France, a paper was presented discussing the way ideologies in the sciences were understood or misunderstood by the general public.[14] The main point made by the author, Jacques Ellul, is that "there has always existed a certain way, in the public and principally the "cultivated" public of receiving Science, of imagining it, of attributing qualities to it, of giving it a global representation" (p. 251). Most of the time, the ideology which is thus formed "is hardly shared by scientists themselves."

Ellul distinguished five periods from 1850 to the present, (1850-1900; 1900-1920; 1920-1945; 1945-1975 and finally 1975 to the present). The first period was "characterized by what is called scientism" (p.252), a kind of leftover from the European Enlightenment and, presumably, of the Incomparable Mr. Newton, with a belief in the laws of nature which were firmly understood by scientists and led only to Progress.[15] At that time, says Ellul

> "one lived amidst a sort of enthusiasm which was not bereft of a certain intransigence: in the name of Science, it was necessary to destroy false ideas, religions, cultural traditions, myths, etc. It was imperative that all those products of the imagination of dark ages be replaced by the Light of Science." (p. 252)

According to the author, by 1900, a "certain weakening" of the common scientism had occurred. Science, he says, was less spoken about and less celebrated, partly because of the first World War and "the major preoccupation of the population was no longer the progress of science, but obviously the war itself"(p. 253). The ideology changed with the end of the war and gave way to a third period.

During the early twenties, in particular, and until the beginning of World War II, people were looking for Happiness and "Science was going to assure the Happiness of humanity" (p.253). There seem to have been a desire to proclaim as "scientific certain disciplines which until then had been partaking of the fuzziness of the human sciences" (Ellul. p. 254). This applied, not only to the general public but to Camus as well.

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[14] Jacques Ellul. Delineating the Ideologies of Science. *Graduate Faculty Philosophy Journal* 12, 1 & 2 (1986): 251-267.

[15] For an inquiry into the origin, growth, and implications of this notion, one of the best study is that of J.B. Bury. *The Idea of Progress*, originally published in 1932, reprinted by Dover Publications in 1955.

And, "the collective conviction persisted that rationality was the way of progress and that it must ineluctably express itself in the happiness of humanity" (p. 254). Yet it was the times of the Great Gatsby, in the U.S., of Braque and Picasso in the school of cubism in France, of André Breton and the school of surrealism which aimed at super-realism through the juxtaposition and combination of verbal images and physical objects ordinarily considered incongruous.--incongruity having its origin in the Freudian concept of the unconscious. The interesting point is that Camus was at that time making a clear separation between disciplines.

In the fifties, when Camus wrote *The Rebel* he stressed rebellion against all types of oppression which implied a kind of brotherhood for all men. He also stressed that art, all art, was essentially a revolt against reality that ended in delirium. However, for Ellul, the fourth stage, the period between 1945 and 1975, was be characterized by a lack of enthusiasm for the numerous scientific discoveries and by a total change in attitude on the part of the scientists themselves. Perhaps to the general public, science was synonymous with Hiroshima, the target of the first atomic bomb ever dropped on a populated area, a bomb responsible for killing more than 100,000 people!

Perhaps this is exactly what Camus had in mind when, in 1952, he wrote, in *The Rebel*:

> Science today betrays its origins and denies its own acquisition in allowing itself to be put to the service of State terrorism and the desire for power. Its punishment and its degradation lie in only being able to produce, in an abstract world, the means of destruction and enslavement. But when the limit is reached, science will perhaps serve the individual rebellion. This terrible necessity will mark the decisive turning-point.[16]

Albert Camus died in 1960. In all his work, he seems to have been anxious to posit a kind of ethical behavior that links mankind with a positive attitude toward life in spite of the general absurdity that prevails. Had he survived past the 1975's he may have approved "the complete reversal of ideology with respect to science" (p.259) painted quite correctly by Ellul in "Delineating the Ideologies of Science."

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[16] Albert Camus. *The Rebel: An Essay on Man in Revolt.* Trans. by Anthony Bower. New YorK: Vintage Books, 1956, This passage was incerted as a footnote on p. 295.

Nowadays we no longer speak of science without linking it to technology which has acquired a new reputation not linked, as it was in some periods of the past, with destruction. According to Ellul this new ideology

> is also firmly rooted in public opinion by the mass media. One is utterly persuaded of it when watching television programs, where, on practically every news program, there is a piece on the combined glory of Science and Technology (p.261).

Yet, it is doubtful that Camus would agree with Ellul's last conclusion, namely that "Science is the sole bearer of the future of our society" although most of us, in academia, would back Ellul's stand:

> One must educate the young early on not only to manipulate technological machinery (the computer), but also to instill in them a kind of love for scientific research (p. 263).

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