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OBJECTIVITY AND THE TRANSACTIONAL THEORY OF PERCEPTION*  

by 
Eugene Freeman

I

The crucial test of the adequacy of a philosophy of experience is that it must account for not only veridical perceptions, but for hallucinations, dreams, illusions, and errors as well. The remarkable "visual demonstrations" devised by Professor Adelbert Ames of the Institute for Associated Research have redirected attention to the critical role played by nonveridical perceptions in disclosing the innermost essence of the perceptual process.

Everyone who has worked with the Ames demonstrations agrees that no verbal description of the demonstrations can take the place of actually experiencing them. I have accordingly brought with me to this meeting a simple piece of apparatus with the aid of which you will shortly be able to see for yourselves one of the most original and fascinating of the Ames demonstrations—the "rotating trapezoidal window."

Leaders in widely differing disciplines have become interested in the implications of the Ames demonstrations for their own fields of endeavor. For any discipline which is concerned with human affairs, the disclosures have a far-reaching significance. Among the fields in which applications have been discovered are philosophy, education, psychiatry and mental hygiene, social psychology, business administration, mathematics, and art.

The principle significance which Ames and others in related fields have found in the disclosures is virtually identical with the basic teachings of pragmatism. The disclosures teach us that we never perceive things as they are. What we see is determined as much by our past experience, our habits, our expectations and purposes (particularly for action), as by the nature of the perceived object itself.

This is, of course, not an original discovery. What is noteworthy about it is that it has been reached by an empirical scientist working in a laboratory, rather than a theoretical philosopher sitting in his study, which may account to some degree for the marked halo effect which makes his philosophy so plausible to scientists, especially psychologists.

Ames himself, and as far as I can gather, practically all of his disciples as well, seem to feel that the acknowledgment of the truth of the general pragmatic principle which is disclosed by the demonstrations leads inevitably to the particular variety of pragmatism taught by John Dewey under the name of Transactionalism. Dewey himself has been one of those who have pointed out the importance of Ames' work in throwing light upon and giving an empirical confirmation to his own transactional philosophy. In the foreword which Dewey wrote to Cantril's The How and Why of Human Experience, Dewey goes so far as to say...

*An admirable summary of the transactional position, and a brief bibliography of recent research is given in Errol Harris' The Foundations of Metaphysics in Science (New York: Humanities Press, 1965).

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OBJECTIVITY AND THE TRANSACTIONAL THEORY OF PERCEPTION

that had the work of Ames been available to him 30 years earlier, his whole philosophy could well have been affected.

Ames himself has pointed out that the theories of William James and Alfred North Whitehead also develop the significance of the demonstrations in, of course, an independent manner. And as far back as 1923, C. D. Broad, who was one of the great British philosophers, makes the following observation in which he anticipates the central claim of the transactional position:

It does seem to me undeniable that in certain cases, and to a certain extent, our past experiences and our present expectations affect the actual properties of the sensa that we sense, and do not merely affect the judgments about physical objects which we base upon sensa.¹

The doctrine of transactionalism holds that perception is essentially triadic. It brings together three inseparable ingredients which make up a perception: an 'organism' which cannot be separated from its environment, an 'environment' which cannot be separated from the organism, and a 'process' of mutual change and impact of one upon the other, involving the meanings of environmental stimuli as determined by the past experience, the present assumptions, and the future purposes of the percipient organism. A definitive statement of the transactional position can be found in Knowing and the Known by Dewey and Bentley. Bentley has also written a most important statement of the position in a brief article entitled "Kennetic Inquiry."²

The principal claim made by Bentley and Dewey is that the transactional approach affords an escape from the "schizophrenia" which is the inevitable outcome of any philosophy which divides the world into two realms that can never be brought together, subjective sensations and perceptions which exist only in the mind of the knower, and external objects which exist only in a world which is completely nonmental or purely real. Bentley asserts that no one has ever observed any "pure knowers" or "pure reals." He asserts that

It is easier literally to observe—to see—a man-in-process with environs, and to see this full process as one transaction, than it can possibly be literally to observe a "soul," a "Spirit," or a psychic "mind" ... or to see a "thing" as a "real" substratum apart from all our knowing and from conditioning thereby (p. 776).

In a privately published paper entitled Sensations, Their Nature and Origin, (Hanover, 1945) Ames states that the stimuli to which the human organism reacts

have in themselves no meaning. The significances that are related to them in consciousness—and are experienced by the organism as sensations—are derived entirely from the organism's prior experience, personal and inherited. (p. 2) ( Italics mine)
“Meaning” is significance which has been disclosed through prior purposeful action... The function of sensations is not to disclose the innate character of a thing as such or its spatial position as such. It is to establish between the evolving organism and the ever-changing environment a relationship on the basis of which the organism may effectively carry out its purpose. This means that sensations are prognostic directives for the purposeful action. (All italics mine)

The function of sensations is to disclose alternate possible courses of action. It is the purpose of the organism in the “now” that determines which course will be followed.

Our field of visual sensations discloses multiple possibilities for action, but only certain of these possibilities will further the organism’s purpose. Therefore, it is in accordance with purpose, conscious or unconscious that the choice is made. Within the chosen course, sensations are again important in determining the effectiveness of the action. For example, if the visual sensation is “illusory” then the action, while guided by sensation, will be ineffective in carrying out the purpose. (pp. 3 & 4)

In another privately published statement on the nature and significance of research of the Hanover Institute (August 1948) Ames summarizes the significance of his visual demonstrations as follows:

1. Our perceptions are only prognoses of the significance to us of the world about us, not disclosures as is commonly believed.

2. The reliability of their prognosis is disclosed only by our action, i.e., the significance to us of the world about us is only disclosed through our action.

3. Our actions are determined by our purposes.

The above would seem to necessitate defining a perception as follows: “In a concrete situation a perception is a potential prognostic directive for furthering purpose by action.” (See Understanding Man’s Social Behavior, by Hadley Cantril, p. 19)

Before exploring any further theoretical considerations, let us turn to one of the Ames visual demonstrations in order to establish a concrete set of facts which, as Professor Ames has pointed out, will serve as a disclosure of the inside of the perceptual process. This is the demonstration which Professor Ames has called the “Rotating Trapezoidal Window” which will now be presented to you.

(The demonstration is then made.)
Most of you will be able to agree that under the special conditions of the demonstration, you experienced a number of perceptions, some of which may have been veridical, and others of which must have been nonveridical. The term ‘veridical perception’ is a very useful bit of conceptual shorthand. Perceptions are subjective events, which are signs of external or objective events. Perception, however, is not an infallible process. On occasion, the external event which the perception reports as having happened, either did not happen at all, or happened in some fashion different from the way in which the percept reported it. Such a discrepancy between subjective report and objective fact is designated by calling the perception a nonveridical perception. Where no discrepancy between the percept, and the objective event of which it is a sign, can be discovered to exist, that is, when the report is not contradicted either by the testimony of other senses or of other observers, the perception can be designated as a veridical one.

Among the nonveridical perceptions which you have just experienced are the following:

1. You saw the trapezoid window oscillate through an arc of about 100°. But it does not oscillate, it really rotates through a full circle, just like the rectangular window alongside of it does.

2. You saw the trapezoid window oscillate at a variable speed, coming to a dead stop just before each reversal of direction. But, it neither reverses its direction nor stops its motion while the axle shaft is turning—instead it rotates with the same uniform circular motion and at the same speed as the rectangular window.

3. You saw the cylinder cutting back and forth through the solid mullions of the window frame in some strange fashion—whatever happened seemed to occur just a little too quickly for you to actually see how one solid bar passed through another solid bar without leaving any trace of its passage—yet while you may not have been quick enough to pick up just how the bar got through the frame, you did see the bar cut through the mullions on every oscillation of the window. But, the bar was attached firmly to the window, intersecting the frame at an angle of 45°, and rotated with the window in the same uniform circular path that was “really” described by the window. It never cut through any of the mullions; as a matter of fact, it never even changed its angle of intersection with the window frame by any significant amount.

4. You saw the red cube in free flight as though it were a satellite of the window, sailing in an orbit that closely encircled the window frame, and you saw the red cube slowly rotating on its own axis, making one complete revolution during each circumnavigation of the window.

This was the most incredible report of all. But, the red cube never really became separated from the window to which it was firmly attached. Nor did it ever really rotate independently on its own axis. Instead, as the window rotated in a uniform circular motion around its own axis, the red cube rotated with it.
OBJECTIVITY AND THE TRANSACTIONAL THEORY OF PERCEPTION

Professor Ames has studied the stimulus patterns which are presented to the retina in the Trapezoidal Window demonstration by means of a large artificial eye “consisting of a lens corresponding to the dioptric system of the eye, and a ground glass which is marked off in rectilinear squares corresponding to the retina.” The observer who watches the revolving trapezoidal window through this device can observe:

1. that the image on the ground glass goes through a series of varying trapezoidal forms;
2. that the pattern on the ground glass is never rectilinear;
3. that there is no change in speed or oscillation of the trapezoidal pattern corresponding to the apparent change in speed or oscillation of the trapezoidal window;
4. that there is no change in form or size of the trapezoidal pattern corresponding to the apparent change in form and size of the trapezoidal window. (p. 10)

From these observations Ames concludes that

It is apparent that a knowledge of the characteristics of these stimulus patterns in themselves does not help us in understanding why the observer sees what he does when he looks at the rotating trapezoidal window. (p. 10)

When the revolving rectilinear window is studied through the same device, the images seen on the ground glass “have the same general characteristics as the images of the trapezoidal window.” (p. 10)

Thus Ames has demonstrated empirically that we cannot account for the perceptions induced by the revolving windows either in terms of the stimulus pattern alone or the object form alone. The rectilinear window and the trapezoidal window are objects which are different in form, yet both are perceived as rectilinear. The stimulus patterns on the retina or its equivalent are both trapezoidal, while the perceptions which they produce are both rectilinear. Ames concludes that since the perceived rectilinear form “does not come from either the stimulus pattern or the object” (p. 10) it must have been caused in the following way:

In his past experience the observer, in carrying out his purposes, has on numerous occasions had to take into account and act in respect to rectilinear forms, e.g., going through doors, locating windows, etc., etc. In almost all of such occasions, except in the rare case when his line of sight was normal to the door or window, the image of the rectilinear configuration formed on his retina was trapezoidal. He learned to interpret the particularly characterized retinal images that exist when he looks at doors, windows, etc. into rectilinear forms. Moreover, he learned to interpret the particular degree of trapezoidal distortion of these retinal images into
terms of the positioning of the rectilinear form to his particular viewing point. These interpretations do not occur at the conscious level, rather, they are unconscious and may be characterized as assumptions (italics mine) as to the probable significance of indications received from the environment. . . . His perception thus provides him with an awareness not only of the nature of the form of the "thing" he is looking at, i.e., "what it is," but also "where it is" relative to his viewing point. . . . (pp. 10 & 11)

The transactional theory can be traced back to its origins in the philosophy of Charles Peirce, the founder of American pragmatism. Pragmatism is essentially a theory of meaning. In its original form, the doctrine of pragmatism was first stated by Peirce in 1867 as a rule for attaining the maximum grade of clearness in expressing our ideas.

Consider what effects, which 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.4

In another statement, made in 1905, Peirce wrote—

the rational purport of a word or other expression, lies exclusively in its conceivable bearing upon the conduct of life; so that, since obviously nothing that might not result from experiment can have any direct bearing on conduct, if one can define accurately all the conceivable experimental phenomena which the affirmation or denial of a concept would imply, one will have therein a complete definition of the concept, and there is absolutely nothing more in it.5

Thus it is apparent that according to Peirce, the rational meaning of a proposition is the form in which it becomes applicable to human conduct. Since experimental results are the only ones that can affect human conduct, the meaning of a proposition is the general description of all the experimental phenomena which it virtually predicts. Experimental phenomena are events in the future which will occur whenever certain conditions are fulfilled. Pragmatism limits itself to experiment. It does not intend to define the phenomenal equivalents of words and general ideas, but to eliminate their sensuous element and find their rational purport, which it finds in their purposive bearing. The ultimate nature of meaning consists in a conceived conditional proposition, which makes a prediction as to a line of conduct which would be successful in the future, rather than in the results of a past act of verification. A chair, for example, does not merely mean something that has been sat upon successfully in the past. Instead, it is a prediction of the kind of conduct with respect to the object named which would be or could be successful in the future if a trial were to be made. Our conduct with respect to chairs, of course, consists of sitting upon them, and if our conduct is successful, the meaning of the word chair, and the correctness of our designation of the object named as a chair, have been confirmed.
OBJECTIVITY AND THE TRANSACTIONAL THEORY OF PERCEPTION

At this point the difference between the pragmatism of Peirce and that of the transactional school begins to emerge. In perception, the transactionalist is concerned with the naming process and the rational meaning of the names assigned to percepts. For the transactionalist, perception is treated not as a disclosure of the nature of the environment, but of the meaning of the environmental stimulus, as interpreted by the observer, in terms of his own life history and his potential purposes for action. A percept, for the transactionalist, is thus a meaningful symbol, and thus a rational idea. It is true, that, as Dewey and Bentley have most emphatically and successfully pointed out, the percept is not merely an idea. Nevertheless, for the transactionalists, as they never tire of pointing out, the perception is not the same as the environmental object which is perceived. They echo the phenomenalism of Immanuel Kant, who taught that we can never know the "thing in itself," but only its phenomenal character, its appearance as limited by our perceptual and intellectual powers.

This phenomenalism does not deny the reality of the external world, but it does deny that we can ever know its nature as an independent "real." In marked contrast to this view, Peirce's original pragmatism involves a strain of bold realism. It would be a great loss to abandon this realism. To the realist, perception essentially is a disclosure of the nature of the real.

The position of the transactionalists is more attractive epistemologically than metaphysically. The unhedging realism of Peirce's philosophy does not have this metaphysical disadvantage, and it can be defended on epistemological grounds as well.

The metaphysics of Peirce was based on the presuppositions of modern experimental science, in which our beliefs are accounted for as being caused by an external permanency upon which our thinking has no effect and in which the ultimate conclusion of every man is the same. The fundamental hypothesis of this method, according to Peirce, is:

There are real things, whose characters are entirely independent of our opinions about them; whose realities affect our senses according to regular laws, and [and this is the reply to transactionalism, written before the school was born] though our sensations are as different as our relations to the objects, yet, by taking advantage of the law of perception, we can ascertain by reasoning how things really are, and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion. (Italics mine.)

It is in these terms that I am impelled to conclude that in its very laudable efforts to point out the vital significance of perceptions as meaningful symbols, the transactionalist confuses significance with essence and tends to treat one as though it were the other. A realist, however, would judge that it is a transparent and fatal mistake to do so. The significance of a blue poker chip may be 25 cents when we use it in one poker game, or it may be 50 cents, or a dollar, or a dime, when we use it in another. Nevertheless, no matter how the significance which is bestowed upon it by the players may vary from game to game, its real physical
being, at least on the macroscopic level disclosed by perception, does not vary. The object named ‘blue-poker-chip’ does not change its color or form or any other of its physical properties as its meaning changes. Nor do the players who need to make a formal explicit decision concerning what its meaning shall be for them need to do anything more than to look at it and feel it to know what it is in its own right as an object or external thing.

It is in this sense that the poker chip is what Peirce would have termed a ‘halceity’ or ‘thisness’—a real objective thing, a public fact not dependent on the knower for its being, notwithstanding that it does depend on the knower for its meaning. Its being is identified through denotation, that is, by pointing to it by means of a gesture accompanied by a demonstrative pronoun.

But perception is more than a mere identification of the denoted object. It is the basic postulate of any thorough-going realism that ‘the nature and properties of a perceived object are actually disclosed to the observer through perception’.

Realism is the instinctive outlook of the plain man. His common sense and his intuition persuade him that perception must be a disclosure of the nature of the external world, and not merely a mirrored reflection of a world created inside of his own skull.

However, the realist who is sufficiently unsophisticated in logic may be baffled and confused by a classical objection which his intellect can not refute but which his heart can not accept. This is the objection that on occasion, we are deceived by errors or illusions of perception, which prove that some things cannot be what they are perceived to be.

Instead of retreating in defeat before this objection which silences the naive realist, let us examine the logic of the argument.

What we are being told is that since perceptions sometimes deceive us, it therefore follows that it is not true that perceptions always disclose the nature of external reality. Granted. From this we are expected to conclude that therefore we have no right to the belief that perception ever discloses things as they are, because we know that sometimes it does not do so. This is obviously invalid.

The fact remains that it is logically possible for perception to be sometimes true even though it is sometimes false, just as it is possible for a person to make some true statements even if he occasionally makes some false ones.

The fundamental postulate of critical realism holds that perception, unless it is proven to be nonveridical, is a genuine disclosure of the nature of external reality—in short, that perception is tentatively accepted as being veridical as long as it is not contradicted by any other testimony, either the testimony of other senses, or the whole conceptual net of established science. When conflicting testimony is presented, the critical realist is able to take stock and reason out the nature and source of the error.

The Ames trapezoidal window demonstration is one of the most spectacular examples of objective nonveridical perception ever devised, and I can understand how it could create, at least initially, some rather disconcerting doubts about the reliability of perception. But as Peirce himself might have said, by combining what we are given in perception with what we can learn from experience, and science, and from our reasoning abilities, we can understand and explain all of
OBJECTIVITY AND THE TRANSACTIONAL THEORY OF PERCEPTION

The perceptions produced in the demonstration. We can recognize which of the perceptions produced by the window are nonveridical, without denying that perceptions, unless proven to be nonveridical, disclose the external world as it really is.

The critical realist is also a phenomenalist. When he speaks of the world as it really is, he means the world as it is perceived to be—or to turn this proposition around, what he affirms is that ‘the world as it is perceived to be is the world as it is, unless the perceptions involved are nonveridical, and that a perception is nonveridical can be established unerringly without exception’.

II

The present paper deals with one of the boundless problems of philosophy which begins when we first discover that our senses sometimes deceive us and we wonder, perhaps only half-seriously, whether they ever disclose things to us as they (really) are. The untutored lay person of good common sense may rub his eyes in disbelief, or he may pinch himself to try to find out whether he is awake or asleep, when he perceives something that is incredible. But if the incredible sight does not go away when he reopens his eyes after closing and rubbing them, or if he doesn’t wake up from a dream when he pinches himself, then he either accepts the incredible as an unexplained fact and goes about his business, or he takes his first step into the labyrinth of epistemology, looking for an explanation that he can reconcile with his experience. If he wanders through this labyrinth without a guide, he is likely to make a series of wrong turns that lead him into a cul-de-sac where he will meet some people who are afflicted with a strange form of madness. They have gone far beyond the original discovery that our senses sometimes deceive us, and they now believe that the senses always deceive us. They talk only to themselves, and what they say is “I am alone in an empty universe—all I know is my own thoughts and bits of my experience—when I think I am perceiving an external object all I am perceiving is my own thought, which I project into a nonexistent outer world.” While we still have our sanity, we must quickly escape from this cul-de-sac of “solipsism” and find our way back to the place where we made our first wrong turn.

If we turn for guidance to some of the great epistemological philosophers, it is not until we read Kant that we discover that the first wrong turn is made by those who follow the lead of John Locke in accepting his great principle, that “knowledge to be reliable must either come in originally through the senses, or it must be merely analytic”—thus, in the language of Kant, that a priori synthetic knowledge is impossible. Berkeley’s paradoxical idealism took the next step, leading those who misinterpreted him to solipsism, and Hume went even further astray with his all-embracing scepticism which led him to deny that we can know causality, and to conclude that since we cannot know causality, we cannot affirm that it exists. But if we cannot affirm that causality exists, then we cannot affirm that science exists—we cannot even affirm that it is possible. This is flatly contradicted by the plain fact that science is a highly successful ongoing enterprise—and it was Kant’s genius which led him to recognize that this plain fact re-
duced Locke's principle to an absurdity, since no theory which is contradicted by facts can be salvaged.

Kant's bold alternative to Locke's principle was that the mind indeed could have knowledge that was both a priori and synthetic. This kind of knowledge was created by the nature and structure of the mind itself. It was knowledge that the human knower had in advance of any perceptions he might make, and it was by means of this a priori knowledge that his perceptions were transformed from the chaotic kaleidoscopic jumble they would otherwise have been, into the ordered and unified perceptions we do have. At the risk of oversimplifying an enormously difficult and technical epistemological masterpiece, I will mention only three of the ways in which, according to Kant, we can have some advance knowledge that does not come to us from our perceptions but which becomes an important part of whatever perceptions we may have.

We know beforehand that whatever we perceive must be perceived at some time, and in some place, and as an effect produced by a cause. But Time, Space, and Causality are not perceived. "Space" and "time" are what Kant calls "forms of sensibility"—they are part of the structure of the mind itself, that part of the mind which dates its impressions, and puts them into a place; and "causality" is one of twelve categories in terms of which the mind is able to understand its impressions. The unity of sense perceptions is accounted for, by Kant, as resulting from the organization of the raw jumble of sense data into a spatial-temporal-causal organization, furnished by the mind itself, which enables the mind to transform the data of sense into a unified and intelligible perception. To use an admittedly oversimplified analogy, the cards in a library card catalog are like the raw data of sensation, and the order in which they are arranged is imposed upon the cards by the librarian, who puts them into an alphabetic order which is furnished before any of the cards are printed. The illustration (which does not come from Kant) is not to be taken as a model of the way the mind operates, since we need a librarian to put the cards into their proper order, and we have never found a corresponding little man (homonculus, or ghost-in-the-machine) who puts the jumbled cards of sense-data into their spatial-temporal-causal order. But the illustration does suggest that it is possible for an order to exist beforehand (the alphabetic order of the card file, or the forms and categories of the mind), and that with the aid of such a preexisting order, it is possible to put otherwise jumbled data into that same order, even though at the present stage of our knowledge of the mind, we are unable to answer such difficult questions as where do these ordering patterns come from, and how are they applied? It is admittedly much easier to understand how the librarian can put cards into a preexisting order than to understand how the mind can do so, nor does space permit us to explore further the perplexities we encounter when we try to formulate a general theory of mind. Instead, for the purposes of this paper, we will take the term 'mind' as an undefined term, whose meaning is intelligible though indefinable, and limit ourselves to a description of some of the things the mind apparently does—one of which, as Kant pointed out, is to furnish forms and categories beforehand, by means of which the mind in some unexplained fashion, is able to unify and understand its perceptions.
OBJECTIVITY AND THE TRANSACTIONAL THEORY OF PERCEPTION

The uncritical or ‘naive’ realism of the plain man who assumes that sense experience always discloses things to us as they (really) are is just as untenable as solipsism. The position of naive realism collapses at the first confrontation with nonveridical perceptions, that is, perceptions which can be falsified by demonstrating that they conflict with both (a) the laws of nature and (b) with other perceptions which do not conflict with the laws of nature.

Much more powerful is the position of critical realism, the position which I myself find the most convincing. The fundamental postulate of critical realism holds that perception, unless it is proven to be nonveridical, is a genuine disclosure of the nature of external reality—in short, that veridical perception discloses things as they (really) are. The testimony of any sense is accepted at face value by the critical realist, as long as it is not contradicted by the testimony of any other sense. When there is a conflict in the testimony of two or more senses, the resulting perception is self-contradictory, and immediately recognized to be nonveridical. Confronted with a specific instance of a nonveridical perception, the critical realist does not repudiate the authenticity of all perception. Instead, he takes stock, and reasons out which perception is veridical and which is nonveridical by taking into account how the perceptions originate and how their reports fit or do not fit into the established conceptual net of empirical science. He can thus unerringly identify and explain any instance of nonveridical perception.

On my view, the basic contention of the critical realist who holds that “we perceive things as they are” is not damaged in the least by confronting him with a case of nonveridical perception, since he can not only distinguish the nonveridical perception as nonveridical from the veridical perception with which it conflicts, but he can also explain the occurrence of the nonveridical event as being an objective event which is caused necessarily in accordance with the same mechanisms and laws which produce veridical perceptions. It is a truism of scientific methodology today that when a hypothesis successfully withstands the probing test of a crucial experiment (which is so designed as to falsify the hypothesis if the hypothesis were indeed false), the failure of the crucial experiment to falsify the hypothesis does not establish the truth of the hypothesis. It only confirms its status as tentatively probable (not yet disproven). A case of nonveridical perception does falsify the unguarded naive version of the realistic principle which would propose the easily falsifiable hypothesis that “every individual report of each sense organ is veridical”; but a case of nonveridical perception is irrelevant as evidence designed to falsify the qualified version of the realistic hypothesis which holds that perception is either a disclosure of things as they are, when there is no evidence to the contrary, or it is identifiable as nonveridical when sensory reports conflict either with each other or with the conceptual net of science, or both.

What the critical realist seems to be saying when he affirms that

(1) “perception is a disclosure of things as they are, except in the cases of illusions, dreams, hallucinations, etc.,” is that

(2) “perception is a disclosure of things as they are when and only when it
EUGENE FREEMAN

is veridical', which is equivalent to
(3) 'veridical perception is a disclosure of things as they are', thus
(4) 'veridical perception is veridical', thus
(5) 'veridical perception is veridical perception'.

However, the position of critical realism can not be reduced to this empty tautology, because the critical realist does not affirm that veridical perception, and only veridical perception, is veridical. Instead he proposes the nontautological (albeit nonfalsifiable) postulate that "perception is in most cases veridical, and in those cases where it is not, this can be proven."

If the principle of critical realism is not a falsifiable scientific hypothesis, on what basis can it be affirmed? Only as a metaphysical postulate, accepted as self-evident truth, not on empirical grounds, but as an article of metaphysical faith—a faith that comes not from the eyes, but from the head and the heart. Small wonder that men cling so tenaciously to this faith, and hold the hypothesis of critical realism as being essentially true even though no one can ever prove it.

The discovery that other men also share our faith gives us tremendous support in our convictions. One of the ways in which we make a simple practical distinction between those of our perceptions which we think are disclosures of the truth, and those which are not, is by finding out what other people think about them. If other people agree with us, we feel secure—if they do not, we look again, and try to understand the nature of the conflict so that we can resolve it.

Since when people do agree with us, there is no conflict, it is easy to see how someone who believed in the basic hypothesis of critical realism would tend to interpret lack of disagreement as confirmation rather than as non-falsification—that is, confirmation in the illegitimate sense of 'proving the truth of' rather than its proper sense of 'establishing the tentative probability of'.

The fundamental question of epistemological investigation is "How do we know that the things we perceive are as our perceptions proclaim to us that they are?" There is wry comfort in the assurance offered to us by the etymology of the word 'veridical' that the speaker is "speaking the truth," since we have only the speaker's word for it. When two of our sense organs speak to us, and both assure us that they are telling the truth, and we discover that one of them is lying, we can call that one nonveridical because we have proven that it is false. But if we then call the other report veridical, we must bear in mind the limited sense in which the word veridical is actually related to truth. It is either (a) a barefaced begging of the question of the status of sense reports "if I say I am true then I am true" ['like it says on the label,' ], or (b) it means the same as "confirmation" means in the context of empirical science, namely, 'not-yet-falsified, thus tentatively held as probable'. But it is quite natural to slip, perhaps unconsciously, from the fact that a veridical perception is a perception that has not (yet) been falsified to the (unproven) assumption that the veridical perception is actually telling the truth. This may well be why C. S. Peirce and Sir Karl Popper have both, on occasion, referred to objectivity as being "intersubjective agreement," which is their short-hand way of stating concisely that in science and in philosophy, "what is objectively the case" is established as such by "inter-
subjective testing,” that is, the testing, by a number of subjects, of the prediction
that under such and such conditions certain perceptions can be made to occur in
the subjects who participate in the testing—and that when the participating sub-
jects all agree that the predicted perceptions occurred as predicted and were in
each case as they were predicted to be, the agreement among the subjects is
taken as establishing (a) that the hypothesis being tested was not falsified, and
thus is to be considered as tentatively probable; and (b) that the perceptions re-
ported were not nonveridical or, less strictly, were veridical. In short, the agree-
ment found in intersubjective testing is taken at its face value as proof that what
the testers were concerned with was objective fact rather than subjective fancy.

Elsewhere in a paper entitled *Objectivity as Intersubjective Agreement*, I
have argued that while intersubjective agreement is a *sine qua non* of objectivity,
it does not by itself constitute the essence of objectivity—a collection of subject-
ive reports remains subjective—what is agreed to in “intersubjective agreement”
is not that the collection of individual subjective reports have been magically
transformed into a single objective report by their consensus, but something
quite different. The consensus transforms individual subjective reports from the
status of untested hypotheses to the status of hypotheses which have been put
to crucial testing by a group of other observers or “subjects”—and that what
is agreed to on the basis of intersubjective testing is that the hypothesis under
consideration has survived the testing—that it has not been falsified by the test-
ing, as it would have been had there been no objective truth in the hypothesis—
and the hypothesis is then tentatively granted the status of being ranked as ob-
jective, but only tentatively so—it remains on probation, free to mingle with
other so-called objective hypotheses of science, that is, those which have not yet
been falsified, but, just as is the case with all scientific or “objective” hypo-
theses, any one of them can be instantly falsified at any time by the negative
outcome of a crucial probing observational test of a testable prediction which it
implies. If the predicted observations do not occur as called for, then the status
as objective “facts” of the hypothesis is cancelled and the hypothesis is seen to be
falsified by its failure to agree with observed “facts” (i.e. “observables”).

Finally, it should be emphasized that, as noted in the second part of this
paper, the critical realist is not a noumenalist, but a phenomenalist. The distinc-
tion between veridical and nonveridical perception is in no way parallel to the
distinction between the noumenal world and the phenomenal world. For the
critical realist, just as was the case with Berkeley, the phenomenal world is the
world as it is perceived to be, and the noumenal world is beyond the limits of
human knowledge. Epistemologically considered, phenomena are ‘knowns’
which are perceptions as we make them to be. Ontologically, phenomena are
‘objective things’ which are as they are disclosed to us in our perceptual process.
Nonveridical perceptions, epistemologically considered, are errors made by the
mind in sensing and in interpreting and making perceptions out of sense data.
Nonveridical perceptions, ontologically considered, are nonexistent things which
are mistakenly presented to us as existing through an error in our perceptual
processes. Their ontological status is similar to the fictitious wealth we might
create for ourselves were we to misplace a decimal point (in our favor) as we add
EUGENE FREEMAN

up the deposits in our checking account, and instead of totalling say $1800.00 we arrive at the total of $18,000.00, of which $16,200.00 are nonexistent dollars, a fact which, just as is the case with nonveridical perceptions, is easily discovered when an independent audit is made. The apparatus for making such audits is equally reliable in both situations, and the results of the audits are equally certain in both cases.

FOOTNOTES
7 Read at the 4th International Congress of Logic, Methodology and Scientific Method, Bucharest, Romania, September, 1971.