ation; but eventually it was compensated by another descendant of the same common primary seed, or ectoderm, namely the extremely powerful nervous system which was capable of dealing with danger. (The human brain was born as a result of or at least after, this impairment.) In other words, in talking of damage the context has to be considered. Whether the degenerating central European brain *can* be damaged is in any case an open question.

One will not reach any insights in this area who does not meditate at length on the nature of the brain. The brain is the perfect example for the pigmy-character of causal theories, it has travelled a most acausal path, all biological hypotheses fail to explain it. It seems clear, since the work of Vershuys, Poetzl and Lorenz, that the brain developed through doubling the number of neurones and simultaneously rearranging the outer (cortical) layers. "There are no intermediary forms." There is no trace of adaptation, summation of minute stimuli, gradual growth and decay until some purposive reorganization takes place — *there were always creative crises.* The brain is the mutative, revolutionary organ par excellence. Its nature was always form, not content, its means expansion, its needs—stimuli. This store-house of rudiments and catacombs brought everything with it from the beginning, it was not dependent on impressions, it produced itself when called for. It was by no means favorably predisposed towards "life," but was equally available for lethal activities, hunger, fasting, walking on nails, charming snakes, magic, bionegatives, death.

"Mens sana in corpore sano" was a proverb of the Roman warrior caste, which has had a modern resurrection in the gymnastics of Jahn and in the Bavarian health cults. Using inner criteria the extravagant body has accomplished more than the normal body; its bionegative characteristics created and carry the human world. By these criteria there is no reality, no history, just some brains which realize at certain time-intervals their dreams, images of the ancient original dreams, made in retrospective insight. This realization may take place in "stone, verse or flute-song" — then we have art; sometimes it takes place only in thoughts or ecstasies. A marvelous sentence from a novel by Thornton Wilder describes the situation: "We come from a world in which we have known unbelievable standards of perfection and we remember faintly the beauty, which we were unable to retain, and we return to this world." Clearly Plato is at hand; endogenous images are the last remaining vestigial forms of our happiness.

(Translated by Ralph Metzner)

The Individual As Man/World

ALAN W. WATTS

(*Prefatory Note*: The following was originally delivered as an impromptu lecture for the Social Relations Colloquium at Harvard University on April 12th, 1963. Although the subject was not discussed in the lecture itself, its theme is closely related to the expansion of consciousness achieved through psychedelic substances. With proper "set and setting," the psychedelics are very frequently successful in giving the individual a vivid sensation of the mutual interdependence of his own behavior and the behavior of his environment, so that the two seem to become one — the behavior of a unified field. Those who uphold the impoverished sense of reality sanctioned by official psychiatry describe this type of awareness as "depersonalization," "loss of ego-boundary," or "regression to the oceanic feeling," all of which, in their usual contexts, are derogatory terms suggesting that the state is hallucinatory. Yet it accords astonishingly well with the description of the individual which is given in the behavioral sciences, in biology and in ecology.

Theoretically, many scientists know that the individual is not a skin-encapsulated ego but an organism-environment field. The organism itself is a point at which the field is "focused," so that each individual is a unique expression of the behavior of the whole field, which is ultimately the universe itself. But to know this theoretically is not to *feel* it to be so. It was possible to calculate that the world was round before making the voyage that proved it to be so. The psychedelics are, perhaps, the ship, the experimental instrument by which the theory can be verified in common experience.)

There is a colossal disparity between the way in which most individuals experience their own existence, and the way in which the individual is described in such sciences as biology, ecology, and physiology. The nub of the difference is this: the way the individual is described in these sciences is not as a freely moving entity within an environment, but as a process of behavior which *is* the environment also. If you will accurately describe what any individual organism is doing, you will take but a few steps before you are also describing what the environment is doing. To put it more simply, we can do without such expressions as "what the individual is doing" or "what the environment is doing," as if the individual was one thing and the doing another, the environment one thing and its doing another. If we reduce the whole business simply to the process of doing, then the doing, which was called the behavior of the individual,

is found to be *at the same time* the doing which was called the behavior of the environment. In other words, it is quite impossible to describe the movement of my arm except in relation to the rest of my body and to the background against which you perceive it. The relations in which you perceive this movement are the absolutely necessary condition for your perceiving at all. More and more, a "field theory" of man's behavior becomes necessary for the sciences.

Yet this is at complete variance with the way in which we are trained *by our culture* to experience our own existence. We do not, generally speaking, experience ourselves as the behavior of the field, but rather as a center of energy and consciousness which sometimes manages to control its environment, but at other times feels completely dominated by the environment. Thus there is a somewhat hostile relationship between the human organism and its social and natural environment, which is expressed in such phrases as "man's conquest of nature," or "man's conquest of space," and other such antagonistic figures of speech.

It would obviously be to the advantage of mankind if the way in which we feel our existence could correspond to the way in which existence is scientifically described. For what we feel has far more influence upon our actions than what we think. Scientists of all kinds are warning us most urgently that we are using our technology disastrously, eating up all the natural resources of the earth, creating incredibly beautiful but wholly non-nutritious vegetables by altering the biochemical balances of the soil, spawning unbelievable amounts of detergent froth which will eventually engulf cities, overpopulating ourselves because of the success of medicine, and thus winning our war against nature in such a way as to defeat ourselves completely. All this advice falls on deaf ears, because it falls on the ears of organisms convinced that war against nature is their proper way of life. They have to be unconvinced, and can be, to some extent, by intellectual propaganda, scientific description, and clear thought. But this moves relatively few people to action. Most are moved only if their feelings are profoundly affected. We need to *feel* this view of our individual identity as including its environment, and this must obviously concern scientists who are trying to find ways of controlling human feelings.

This problem has an important historical background. It is curious how the ancient philosophical debates of the Western world keep coming up again and again in new forms. Any question of the definition of the individual always becomes involved with the old

argument between nominalism and realism. I do not wish to insult the intelligence of this learned audience, but, just to refresh your memories, the realistic philosophy of the Middle Ages and of the Greeks was not what today we call realism. It was the belief that behind all specific manifestations of life such as men, trees, dogs, there lies an archetypal, or ideal, form of Man, of Tree, of Dog, so that every particular man is an instance of that archetypal form, and that behind all men is something which can be called Man with a capital M, or the "substance" of man, of "human nature."

The nominalists argued that this was a mere abstraction, and that to regard Man (capital M) as possessing any effective existence was to be deluded by concepts. There are only specific, individual men. This idea is carried on in one of the most remarkable forms of modern nominalism, General Semantics, which argues that such abstractions as "The United States," "Britain," or "Russia," are so much journalistic gobbledygook.

Most people working in the sciences tend to be nominalists. But if you carry nominalism to its logical conclusion, you are involved in awkward problems. Not only would there be no such thing as Man, Mankind, or Human Nature, but it would also follow that there are no individual men, because the individual man is an abstraction, and what really exists is only an enormous amalgamation of particular molecules. If you pursue this further and inquire about the individual entities composing the molecules, there is an interminable array of nuclear and sub-nuclear realities, and if *these* in turn are to be regarded as the only realities, then the reality which we call a man is simply the association of discontinuous particles. This is the *reductio ad absurdum* of nominalism carried too far. The nominalist and realist viewpoints are actually *limits* — to borrow a term from mathematics. I have often thought that all philosophical debates are ultimately between the partisans of structure and the partisans of "goo." The academic world puts a heavy emphasis on structure: "Let's be definite, let's have rigor and precision, even though we are studying poetry." But the poets will reply: "We are for goo, and you people are all dry bones, rattling in the wind. What you need is essential juices, and therefore more goo is necessary to liven you up." But when we want to know what goo is, and examine it carefully, we eventually turn up with a structure, the molecular or atomic composition of goo! On the other hand, when we try to examine the structure itself to study the substance of its bones, we inevitably come up with something gooey. When the microscope

focus is clear, you have structure. But when you reach beyond the focus and what confronts you is vague and amorphous, you have goo because you cannot attain clarity. Structure and goo are essential limits of human thought; similarly, the nominalist-structural and the realist-gooey will always be essential limits in our thinking. We must be aware that today, the particular academic and scientific fashion leans heavily in the direction of structure and nominalism.

To take a specific example, we all know that in modern medicine nominalism and structuralism hold the field. When you go to a hospital, you are liable to go through a process of examination by specialists working upon you from different points of view. They will treat you as a non-person, from the very moment you enter. You are immediately put in a wheelchair — a symbol of the fact that you are now an object. You will be looked at piecemeal, X-rays will be taken of various organs, and special tests will be made of their functioning. If anything is wrong, you will be taken to a medical mechanic, i.e., a surgeon, who will use his equivalents of wrenches, screwdrivers and blowtorches to make certain mechanical alterations in your organism, and it is hoped you will get along fairly well with these repairs!

But the opposite, minority school of medicine will say: "This is all very well, and the services of the surgeon are sometimes greatly welcomed, but man must be considered as a whole. He has complicated metabolic and endocrine balances, and if you interfere with him seriously at one point, you will affect him unpredictably at many others, for man is an organic whole." Such are accused of being woolly-minded, old-fashioned doctors, mostly from Europe, with a kind of nature-cure background, who will use diet, complicated fasts, and massage. The poor layman doesn't know whether to deliver himself over to these old-fashioned naturalistic doctors or to Mr. Sawbones with his very up-to-date qualifications.

Fortunately, precise science is coming to the rescue of our man-as-a-whole. More recent studies are showing just how diseases formerly regarded as specific entities, or afflictions of a particular organ or area, are actually brought about by responses of the central nervous system, acting as an integrated whole. We are beginning to see how man, as a complex of organs, is not an *addition* of parts, like an automobile. His various organs are not to be treated as if they were assembled together, but by seeing the physical body as a unified or integrated pattern of behavior — which is just what we mean when

we talk about an entity or thing. What happens when we have the feeling that we understand something, when we say, "Oh, I see"? If a child asks, "Why are the leaves green?" and you answer, "Because of the chlorophyll," and the child says, "Oh!," that is *pseudo*-understanding. But when the child has a jigsaw puzzle and sees how it all fits together, then the "Oh!" has a different meaning from the "Oh!" following the chlorophyll explanation. To understand anything is to be able to fit various parts into a system which is an integrated whole, so that they "make sense."

As organic diseases are fitted into a whole, and problems of crime or phychosis in individual behavior are fitted in with a pattern of social behavior that makes sense, that is consistent with those kinds of behaviors, we say "Aha! — *now* I see!"

Fascinating work is being done in studying the ways in which the individual as a system of behavior is related to his biological and social environments, showing how his behavior may be explained in terms of those environments. One of the people who has done very important work in this sphere is our distinguished colleague, B. F. Skinner. I cite his work because it brings out these ideas in a marvellously clear, crucial, and provocative way, and because it is evidence for conclusions which he himself does not seem to have realized. One of his most important statements is in his book,
Science and Human Behavior:[1]

> The hypothesis that man is not free is essential to the application of scientific method to the study of human behavior. The free inner man who is held responsible for the behavior of the external biological organism is only a prescientific substitute for the kinds of causes which are discovered in the course of a scientific analysis.

He is talking, of course, about the chauffeur inside the body, or what Wittgenstein called the little man inside the head: this is for him a prescientific substitute for the kinds of causes for behavior which are discovered in the course of scientific analysis. He continues:

> All these alternative causes lie *outside* the individual. The biological substratum itself is determined by prior events in a genetic process. Other important events are found in the nonsocial environment and in the culture of the individual in the broadest possible sense. These are the things which *make** the individual behave as he does. For them he is not responsible and for them it is useless to praise or blame him. It does not matter that the individual may take it upon himself to control the variables of which his own behavior is a function or, in a broader sense, to engage in the design of his own culture. He

[1] New York: Macmillan, 1953, pp. 447-448.

> does this only because he is the product of a culture which *generates** self-control or cultural design as a mode of behavior. The environment determines the individual even when he alters the environment.[1]
> [*Emphasis mine—A.W.W.]

I am not going to quarrel with this finding. I am not a clinical or experimental psychologist and am therefore unqualified to criticize Skinner's evidence. Let's take it for Gospel, simply for the sake of argument.

But there is a rather heavy emphasis upon the individual being the puppet. "All these alternative causes," i.e., the kinds of causes discovered in the course of scientific behavior, "lie outside the individual," i.e., outside this wall of flesh and bag of skin. The individual is therefore passive. This is psychology in terms of Newtonian physics. The individual is a billiard ball upon which other balls impinge, and his seemingly active behavior is only a passive response. Skinner admits the individual does and can alter the environment, but when he does so, he is *being made* to do so. This is put forth in such a way as to make the individual appear passive and the things *really* controlling his behavior outside him.

But the reciprocal relationship between the knower and the known, common to all the sciences, is set aside here although he mentions it elsewhere.

> A laboratory for the study of behavior contains many devices for controlling the environment and for recording and analyzing the behavior of organisms. With the help of these devices and their associated techniques, we change the behavior of an organism in various ways, with considerable precision. But note that the organism changes our behavior in quite as precise a fashion. Our apparatus was designed by the organism we study, for it was the organism which led us to choose a particular manipulandum, particular categories of stimulation, particular modes of reinforcement, and so on, and to record particular aspects of its behavior. Measures which were successful were for that reason reinforcing and have been retained, while others have been, as we say, extinguished. The verbal behavior with which we analyze our data has been shaped in a similar way: order and consistency emerged to reinforce certain practices which were adopted, while other practices suffered extinction and were abandoned. (All scientific techniques, as well as scientific knowledge itself, are generated in this way. A cyclotron is "designed" by the particles it is to control, and a theory is written by the particles it is to explain, as the behavior of these particles shapes the nonverbal and verbal behavior of the scientist.)[2]

[2] "The Design of Cultures," *Daedalus*, Summer 1961, p. 543.

In one of his essays, he has a cartoon of one mouse saying to another, "Boy, have I got that guy up there fixed! Every time I press this bar, he gives me some food!"

Although Skinner seems in general to be stressing heavily the point of view that the individual is the puppet in the field in which he is involved, he is nevertheless stating here the opposite point, that the individual organism, mouse, or guinea pig, in the experiment is nevertheless determining the environment even when, as in a laboratory, the environment is designed to control the specific organism. The environment of a rat running in a barn is not designed to control the rat, but the more it is so designed, the more the rat is involved in and shaping its environment. He writes elsewhere that what he has been saying

> does not mean that anyone in possession of the methods and results of science can step outside the stream of history and take the evolution of government into his own hands. Science is not free, either. It cannot interfere with the course of events; it is simply part of that course. It would be quite inconsistent if we were to exempt the scientist from the account which science gives of human behavior in general.[3]

Now we might well object: "Look, Professor Skinner, you say we are completely conditioned behavior-systems. We cannot change anything. At the same time, you are calling upon us to embark upon the most radical program of controlling human behavior. How can you write *Walden II*, a utopia? Are you not a monstrosity of inconsistency by calling for responsible human action and at the same time saying that we have no freedom?" But is this actually a contradiction? He is saying two things, both of which can be valid, but he does not provide a framework in which the opposed points of view can make sense. Similarly, the physicist says light can be considered as a wave or as a particle system. These sound mutually exclusive to the non-physicist. In the same way, the advocacy of a planned development of human resources and potentials, coupled with the idea that the individual is not a self-controlling, skin-encapsulated ego, needs some further concept to help it along. The following passage clinches the problem.

> Just as biographers and critics look for external influences to account for the traits and achievements of the men they study, so science ultimately explains behavior in terms of "causes" or conditions which lie beyond the individual himself. As more and more causal relations are demonstrated, a practical corollary becomes difficult to resist: it

[3] *Science and Human Behavior*, p. 446.

> should be possible to *produce* behavior according to plan simply by arranging the proper conditions.[4]

There is the contradiction which necessarily arises in a psychology with a language system which incorporates into present scientific knowledge an outmoded conception of the individual — the individual as something bounded by skin, and which is pushed around by an environment which is not the individual. Skinner is naturally aware that his emphasis on our passive relationship to conditioning causes is rather unpalatable.

> The conception of the individual which emerges from a scientific analysis is distasteful to most of those who have been strongly affeeted by democratic philosophies . . . it has always been the unfortunate task of science to dispossess cherished beliefs regarding the place of man in the universe. It is easy to understand why men so frequently flatter themselves — why they characterize the world in ways which reinforce them by providing escape from the consequences of criticism or other forms of punishment. But although flattery temporarily strengthens behavior, it is questionable whether it has any ultimate survival value. If science does not confirm the assumptions of freedom, initiative, and responsibility in the behavior of the individual, these assumptons will not ultimately be effectve either as motivating devices or as goals in the design of culture. We may not give them up easily, and we may, in fact, find it difficult to control ourselves or others until alternative principles have been developed.[5]

There the book ends, and there is no suggestion as to what those principles might be, even though they are implied in his conclusions.

> When an individual conspicuously manipulates the variables of which the behavior of *another** individual is a function, we say that the first individual controls the second, but we do not ask who or what controls the first. When a government conspicuously controls its citizens, we consider this fact without identifying the events which control the government. When the individual is strengthened as a measure of counter-control, we may, as in democratic philosophies, think of him as a starting point. [* My emphasis—A.W.W.]

Isn't this political nominalism?

> Actually, however, we are not justified in assigning *to anyone or anything* the role of prime mover. Although it is necessary that science confine itself to selected segments in a continuous series of events, it is *to the whole series* that any interpretation must eventually apply.[6] [My emphases—A.W.W.]

[4] "Freedom and the Control of Men," *The American Scholar*, Vol. 25, No. 1, Winter, 1955-56, p. 47.

[5] *Science and Human Behavior*, p. 449.

[6] *Ibid.*, pp. 448-449.

We are now listening to a man who represents himself as a behavioristically oriented, non-mystical, on-the-whole materialistic, hard-headed scientist. Yet this passage is the purest mysticism, which might have come straight from Mahayana Buddhism: "We are not justified in assigning to anyone or anything the role of prime mover." No segment, no particular pattern of integrated behavior within whatever universe we are discussing can be called the prime mover. Now this is the *Dharmadhatu* doctrine of Mahayana Buddhism, that the universe is a harmonious system which has no governor, that it is an integrated organism but nobody is in charge of it. Its corollary is that everyone and everything is the prime mover.

In Skinner's language, the popular conception of the inner self, the little man inside the head who is controlling everything, must be replaced by the whole system of *external* causes operating upon the individual, the whole network of causal relationships. But this language obscures a very simple thing: when there is a certain cause in the external environment whose effect is always a particular individual behavior, you are using very cumbersome language for something you can describe more simply. For when you find these two things going together, you are actually talking about one thing. To say that Event A causes Event B is a laborious way of saying that it is one Event C. If I lift up this book by a corner, all the corners are lifted up at the same time. If I lift up an accordion, there is an interval between cause and effect. Similarly when we study the individual's behavior, we are studying a system of relationships, but we are looking at it too close up. All we see is the atomic events, and we don't see the integrated system which would make them make sense if we could see it. Our scientific methods of description suffer from a defective conception of the individual. The individual is not by any means what is contained inside a given envelope of skin. The individual organism is the particular and unique focal point of a network of relations which is ultimately a "whole series" — I suppose that means the whole cosmos. And the whole cosmos so focused is one's actual self. This is, whether you like it or not, pure mysticism. Skinner is saying that although science is a method of observation which, by reason of the blinkers of the head, is limited to our one-thing-at-a-time method of thought, science can only look at the world area by area. But science also becomes the method of understanding its own limitations. When you conduct any experiment, you must be careful to exclude variables you cannot measure. When you want to keep something at a constant tem-

perature, you must put it into some kind of heat-and-cold-proof or shock-proof, or cosmic-ray-proof system. So by excluding variables and by having to do it rigorously, you begin to understand how really impossible it is to do except in very special cases. In this way, the scientist, by attempting to isolate events and by looking as rigorously as he can at one segment of the world at a time, becomes aware of the fact that this looking at things simply in segments, although it is a form of very bright, clear, conscious knowledge, is also a form of ignorance. For it is a form of "ignore-ance," ignoring everything that is not in that segment. Therefore he becomes aware of the fact that just this is *ultimately* what you can't do. You *can* do it only to discover you *cannot* do it.

I commend these observations to you simply to show how a scientific thinker whose whole stance is in the direction of mechanism, of regarding the human being as a kind of biological puppet, must be forced by the logic of his own thinking to conclusions of a rather different kind. He states these questions in veiled language, so that neither he nor his colleagues will see their disastrously unrespectable implications!

Suppose, then, it becomes possible for us to have a new sense of the individual, that we all become conscious of ourselves as organism-environment fields, vividly aware of the fact that when we move, it is not simply my self moving inside my skin, exercising energy upon my limbs, but also that in some marvelous way the physical continuum in which I move is also moving me. The very fact that I am here in this room at all is because you are here. It was a common concurrence, a whole concatenation of circumstances which go together, each reciprocally related to all. Would such an awareness be significant? Would it add to our knowledge? Would it change anything, make any difference? Seriously, I think it would; because it makes an enormous difference whenever what had seemed to be partial and distintegrated fits into a larger integrated pattern. It will of course be impossible finally to answer the question, "Why does that satisfy us?,"because to answer this question exhaustively I would have to be able to chew my own teeth to pieces. In the pursuit of scientific knowledge, always watch out for that snag. You will never get to the irreducible explanation of anything because you will never be able to explain why you want to explain, and so on. The system will gobble itself up. The Gödel theory has roughly to do with the idea that you cannot have any system which will define its own axioms. An axiom in one system of logic must be

defined in terms of another system, etc., etc. You never get to something which is completely self-explanatory. That of course is the limit of control, and the reason why all systems of control have ultimately to be based on an act of faith.

The problem confronting all sciences of human behavior is that we have the evidence (we are *staring* at it) to give us an entirely different conception of the individual than that which we ordinarily feel and which influences our common sense: a conception of the individual not, on the one hand, as an ego locked in the skin, nor, on the other, as a mere passive part of the machine, but as a reciprocal interaction between everything inside the skin and everything outside it, neither one being prior to the other, but equals, like the front and back of a coin.