NEVER SMILE AT A CROCODILE

Peter G. Ossorio
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In recent years there have been a number of symposia involving participation by psychologists and philosophers. Whatever the particular theme of a given meeting may be, there is the background notion that there ought to be substantial and continuing communication between psychologists and philosophers in their professional capacities. As one of the earliest current proponents of this idea I should like to endorse it once again now. However, there is an important place here for some warnings and reminders, hence the title of this paper.

There is a longstanding and strong tendency to think of such interdisciplinary communication along the lines of taking in each other's washing or buying each other's products--in short, to think in terms of a simple exchange, whether of problems, ideas, solutions, or what not.

Let me offer the suggestion that this kind of interaction could be generally successful only if there were no difference, as of course there is, between psychology and philosophy and that the present state of psychology is the result of having proceeded in that way in the past.

The appropriate model is not that of a simple taking or exchange, but rather that of assimilation. Philosophical ideas, arguments, or conclusions have to be transformed, transmuted, or beaten into psychological form if they are ever to be part of psychology. And vice versa.

Now, I don't imagine that anyone would really disagree with this sort of reminder. However, as with New Year's resolutions, it's not the swearing off, but the follow-through that presents the problems. Part of the problem is that philosophical arguments tend to have the ring of simple truth and tend to be so presented. It's difficult for anyone who isn't

well acquainted with professional philosophy to recognize the degree to which philosophical arguments and philosophical conclusions are limited in their form and outlook by the history and social structure and the customs, standards, and distinctive concerns of philosophers. It's as easy to overestimate as to underestimate these limitations. So psychologists have tended both to accept some philosophy as simple truth and to reject the rest as nit-picking, kibitzing, and generally pernicious. Conversely, philosophers have tended to seize upon whatever psychologists do that is non-empirical and call that philosophizing.

Since, as I say, it's not the good intention but the follow-through that presents problems I will not pursue the warning line, but instead will illustrate concretely what I take to be an appropriately assimilative interaction between two disciplines. Doing this will involve a partial spelling out of a way of doing psychology which is unfamiliar to most psychologists and philosophers.

What I will present is a conceptualization, or formulation, of behavior, together with some elaborations and heuristic distinctions designed to provide some idea of how that formulation works. The formulation of behavior is only one of four primary components of a more extensive conceptual system.

When I say "conceptualization" or "formulation," I want to imply a contrast to either "theory" or "model." The formulation of behavior is a way of talking about behavior <u>as</u> behavior and saying what we take it to be either in general or in particular cases. This contrasts with having a model which enable us to talk about something, <u>possibly</u> behavior, <u>as if</u> it were the sort of thing incorporated into the model. And it contrasts

with having a theory which enables us to talk about the behavior as being really something else of the sort mentioned in the theory.

As background for later calling attention to some psychological-philosophical points of similarity or relevance, let me introduce an historical context.

The past decade has seen a four-way interaction involving two philosophical camps and two parallel psychological camps. The issue that involve them have to do with the concepts of behavior, action, and cause-effect accounts.

Position 1 is occupied by philosophers who claim that action explanations of human behavior are either (a) fundamental or (b) in some sense indispensible or (c) exclusively approriate in explaining human behavior. Further, they claim that action explanations, which involve reference to intentions, reasons, desires, rules, and so forth, are incompatible with cause-effect accounts of behavior. Because of this, they have seemed to be saying "you're doing it all wrong" to psychologists, who routinely and traditionally use a cause-effect idiom.

Position 2 is held by a small minority of psychologists who more or less agree with those philosophers and who then make affirmative efforts to employ action explanations in their psychological accounts of human behavior. They tend to run into difficulties with such things as the effects of brain tumors, broken legs, and learning histories on behavior.

Position 3 is held by a majority of psychologists who practice in university settings. They react violently against any apparent criticism of cause-effect accounts and dismiss any reference to intentions, desires,

reasons, or rules as philosophical nonsense, "folk psychology," or other superstition which has no place in the brave new world of behavioral technology.

Position 4 is held primarily by philosophers who are neo-positivistic in orientation and practice their art in the United States or Australia. They assert that if and when intentions, reasons, desires, etc. are involved in behavior at all, they are causes of behavior. Some of them would add that this is because they really are brain processes and it is brain processes that are the causes of behavior.

Thus, the philosophical issue might be summarized as "Can actions be caused?" whereas the psychological issue might be summarized as "Do cause-effect accounts explain human behavior?" or conversely "Can a rule-following model of behavior carry the weight of a science of behavior?" The nature of the four-way interaction is probably best summarized "a free-for-all".

As one examines this free-for-all it begins to come across that there's something extremely slippery about the concept of "behavior". Otherwise why all the controversy. But also, in spite of the slipperiness, both psychologists and philosophers seem, in their discussions, to presuppose that behavior is a particular sort of thing. What that is is perhaps best brought out by the Wittgensteinian question, "What is left over in the fact that I raise my arm if you subtract out the fact that my arm goes up?" The concept of behavior which psychologists and philosophers have seemed to share is something on the order of my arm going up. The controversies arise in connection with causal or rule-following explanations of that. (Recall the quotation from Schwayder given by Professor Secord.)

Now, against this background, let me introduce a formulation of behavior which was not intended to be a part of all that controversy, but instead, was designed to deal with the conceptual and empirical problems of a science of behavior. This is shown in Formula (I) in Figure 1. Figure 1 contains a parametric formula for behavior and a brief characterization of the terms of the formula. The parameters of behavior are designated as Identity, Motivation, Cognition, Competence, Performance, Achievement, Personal Characteristics, and Significance.

Notice that Formula (I) is a parametric analysis and not a definition. The parameters of behavior are the ways in which one particular behavior can be the same as or different from another particular behavior as such. Parametric analyses are, of course, familiar to us from their use in mathematics and physics. To begin in this way is to take behavior as a fundamental and intelligible phenomenon. This is quite different from beginning with a definition of behavior, for a definition could only be a way of saying, in one way or another, that behavior is not fundamental because it's really something else. For example, that it is really the product of a conditioning history, an expression of biological drives, or a process of self-actualization. It also contrasts with an informal beginning in which "behavior" is referred to in this way and that way, as needed, but without any way of putting it all together, so that behavior remains in principle mysterious rather than intelligible. Discussions of causal and rule-following explanations of behavior have tended to be of this sort. Approaching behavior as both fundamental and intelligible is therefore something of a departure from both psychological and philosophical custom.

Notice, too, that Formula (1) is much more complex than anything on the order of my arm going up. Specifying such a fact as my arm going up would be accomplished by a partial specification of the value of just one of the eight parameters, i.e., the Performance parameter.

Finally, you will recognize in Figure 1 that the concept of behavior is presented by means of a formula in set theoretical notation. It's not a coincidence. This concept of behavior is one whose primary use is calculational rather than simply descriptive. And calculation, of course, is rule-following. So the formulation of behavior as intentional Action is a rule-following formulation. However, the kind of calculation involved at this point is not of any kind envisaged by philosophers who have talked about action explanations and rule-following. The slipperiness I mentioned earlier in connection with the concept of behavior may be understood as the consequence of trying to deal with a calculational notion as though it were merely theoretical or simply descriptive.

By way of background for showing how this calculation works, let me introduce a heuristic distinction. Given Formula (1) as a general concept of behavior which serves to organize a subject matter as a range of possible facts, we may then ask, what <u>is</u> the range of possible behavioral facts and what cogent ways are there to stratify or categorize these possibilities. One such way is the three-way division shown in Figure 2. That is, there is no behavioral fact which is not subsumable under the heading of either (a) the occurrence of behavior or (b) the occurrence of observation and description or (c) the occurrence of appraisal and criticism. For our purposes we will deal with a special case, involving the observation-descrip-

tion of behavior and the appraisal-criticism of a description of behavior. This stratification is codified as the three methodological roles of behaver, observer-describer, and critic, and this is shown in Figure 2.

Notice that in organizing a subject matter as a range of possible facts, we are dealing with facts as primary. This contrasts with the hypothetico-deductive tradition of theories and models in psychology, where mechanisms, structures, and processes are conceptually and methodologically primary. Even our cognitive, existential, and transcendental theories and models have this general character. There is, of course, a Grade A precedent in the philosophical literature for the emphasis on facts as primary. The opening lines of Wittgenstein's "Tractatus" were "The world is everything that is the case. The world divides into facts, not things." On the other hand, of course, what I'm doing here is psychology, not logic or epistemology, and it doesn't visibly resemble what Wittgenstein did in the Tractatus. There is no simple taking over of anything here.

The three-way division is interesting and heuristic in at least two ways. The first of these is that there could be no science of behavior if there were not behavioral facts of <u>each</u> of those three sorts. First, without the occurrence of behaviors there would be nothing for a behavioral science to study. Second, to observe and describe behavior is ipso facto what a behavioral scientist does; without that there would be no behavioral scientists and therefore no such science. Finally, it is essential that descriptions of behavior be able to pass certain kinds of critical appraisal in order to qualify, e.g., as scientific descriptions, as explanatory descriptions, as experimentally confirmed descriptions, as possibly true

descriptions, et cetera. Were there no such behavior as the making of these appraisals there would be no difference between science and non-science, and so there would be no science.

The other interesting feature is that there are logical relations among the three behavioral categories. To observe and describe behavior is a special case of engaging in behavior. And to criticize a behavior description is a special case of observing and describing behavior. These logical relations provide an internal consistency check and a representational adequacy check for any conceptualization of behavior. It would be possible, for example, to formulate a general concept of behavior which was of such a sort that observation-description could not be shown as a special case of behavior or else appraisal-criticism of descriptions could not be shown as a special case of observation-description. In that case we would have a prima facie basis for saying that that formulation of behavior was substantively, or representationally, inadequate, i.e., that it was in principle incapable of getting at all the facts of behavior. It would also be possible to introduce a concept of behavior such that observation-description or appraisal-criticism would be demonstrably impossible as special cases. In that case we would say that the formulation was methodologically paradoxical or self-contradictory. On inspection it appears that all of our existing and traditional theories of behavior are either self contradictory or substantively inadequate in this way. Of course, nobody has been trying to meet this kind of standard in his theorizing, but there is some reason to believe that this inadequacy is built into the notion of theorizing per se.

Now, let us look more closely at the observer-describer role in order to see what is involved. If observation-description is a special case of behavior and if Formula (1) gives the general case of behavior, then we ought to be able to show in an explicit and non-trivial way what conditions in addition to those given by Formula (1) have to be met in order that a given behavior be a case of observation-description of behavior. In fact, two constraints will do the hard part of the job. They are, first, that the behavior is verbal behavior, and second, that the behavior in question involves the use of the concept of behavior. Our major interest will be with the second condition, but first a word about the first.

Formula (2) in Figure 3 provides the conceptual specification of the general case of verbal behavior. For heuristic convenience, it is placed next to Formula (1) in order to make clear why Formula (2) shows the general case of verbal behavior to be a special case of Intentional Action. To say that a given behavior is verbal behavior is to say something about, first, the values of the Performance and cognitive parameters of that behavior, second, a relation between these parametric values, and third, a relation between this behavior and a class of other behaviors. I will say just three things about all this. First, this behavioral approach to language is a far cry from the traditional notion that the task of psycholinguistics is to provide an account of the (presumably physiological) mechanisms whereby linguistic competence is realized in overt performance. Second, in spite of being different in this way, it does connect to existing and potential linguistic theory, and, so far as I know, it's the only psycholinguistic formulation that does this. Any transformational grammar or other syntatic

theory may be assimilated directly as a theory of L, the Locution, in Formula (2), i.e. as a detailed and systematic specification, from the critic's viewpoint, of what a performance has to be like in order to be a paradigmatic linguistic performance. Third, you'll notice that there is specified a one to one connection between locution and concept. It would take a much longer time than we have to explain why this is necessary when absolutely everyone with any kind of sophistication regarding language knows absolutely that it just isn't so and couldn't possibly be. I will say only that Formula (2) is not a general description of verbal behavior, but rather, a conceptualization of verbal behavior, and that is something that has no truth values but instead, has to be used. But using the concept of verbal behavior is just a special case of using the concept of behavior, and that is what our second constraint deals with.

Our second condition which distinguishes observation-description as a special form of behavior is that such behavior involves using the concept of behavior. This raises the question of how the concept is used. And the answer is that the observer uses the concept of behavior, not as a simple description, but as a calculational system. The details of the calculational system are given in Table I.

What is shown there is a fairly conventional sort of representation which I call the Element--Operation--Product model of a formal system. In the present case, we introduce a single initial Element and four Operations. The initial Element is simply the formula for behavior. Products are generated by performing on Operation on this initial Element. Each Product is eligible to serve as a new Element upon which some further Operation

could be performed, and so on. And each Product is a form of description of behavior.

The important thing here is that an unlimited number and variety of behavioral concepts are immediately available for either description or enactment to any individual who has acquired the concept of behavior and can use it in this way as a calculational system. So Intentional Action works like a generative grammar. Technically speaking, one of the things it does for us is to provide an alternative to the traditional appeals to "generalization," "creativity," "spontaneity," and so on in accounting for the variety of particular human behaviors relative to their learning basis.

If, in Table I, we survey the Products that are generated most simply by performing Operations on the formula for behavior we find some interesting results.

Let us look first at the results of simple Substitution. These results are given on lines 1,2,3, and 4 of Table I. Formally speaking, these four formulas show us that Formula (1), the general concept of behavior, is both recursive and reflexive. Substantively, we can distinguish four general forms of behavior description corresponding to four generic varieties of behavior, namely, "cognizant action," "deliberate action," "social practice," and "symbolic behavior".

The representational capacity of these four forms of description is roughly as follows: (1) A Cognizant Action Description is a description of behavior in which the concept of behavior is used. It therefore is capable of representing the case of an individual who either (a) is describing behavior or (b) knows what he is doing. So the second condition which distinguishes observation-description as a special case of behavior is in this way

derivable from the general concept of behavior. Correspondingly, we can now state that second condition more precisely and systematically: observation-description is behavior which is correctly described as "cognizant action."

(2) Next, a Deliberate Action Description is capable of representing the case of a behaver who distinguishes among behaviors not merely cognitively but motivationally as well. That is, he identifies a set of behavioral options and chooses his own behavior from among them on the basis of his acquired mastery of certain critical perspectives which give him reasons for and against certain choices. (In saying this, you will recognize, I am skipping some steps, since talking about those critical perspectives is something that would have to be explicated by developing our third methodological stratum, i.e., the appraiser-critic.)

Two comments here. First, I would suggest, that it's this concept of deliberate action which philosophical references to intentions, reasons, desires, and so on have been efforts to delineate. Second, the argument that the three kinds of behavior shown in Figure 2 are essential to the existence of a behavioral science can be transformed into the argument that the occurrence of deliberate action is essential in that way and that, therefore, any purportedly general theory of behavior which could not show this or which would leave no room for deliberate action is not worth taking seriously as a general behavior theory. Any deterministic theory would be of that sort. That is, no deterministic theory could be taken seriously as a general theory of behavior. Now, this may seem harsh and dogmatic, but it is just as clear and just as simple as saying that no statement to the effect that nobody ever said anything could be taken seriously as a general theory of

language.

(3) Next, a Social Practice Description is capable of representing extended patterns of behavior, whether involving one person or more than one, since it represents the occurrence of one behavior as the Achievement of another behavior and so it provides a representation of joint, or collective, behavior. (To accomplish this generally would, of course, involve repeated substitution operations to generate more and more elaborate patterns.) Social Practice Descriptions, therefore, give us formal access to all kinds of social behavior and social phenomena.

One comment here. There is a connection between social practices and deliberate action. For any social practice there are some alternative ways in which it could be carried off. Because of this, the participation in social practices is what provides the behavioral options the choice among which constitutes deliberate action. I would suggest that this is (a) why philosophers like Winch have proposed that social science <u>is</u> just the specification of the social practices and their organization in any given society, and (b) why the rule-following model is proposed for psychology as a social science rather than as a biological science.

(4) Finally, for the last of our four substitutions, a Symbolic Behavior Description is capable of representing the case where engaging in a given behavior is accomplished by engaging in a second behavior. For example, the case where I warn you by pointing backward and saying "There's a police car following us." Or the case where I illustrate some assimilative possibilities between psychology and philosophy by reading a paper to a learned group. This form of description, therefore, gives us formal access

to the aspects of depth, meaningfulness, and significance in behavior. This aspect of behavior is codified as the Significance parameter of Formula (1).

If we now move on to the results of using the Deletion operation, we find a set of incomplete descriptions of behavior. These are shown on lines 5-9 in Table I. They are incomplete in the sense that in each case there is one or more of the parameters of intentional action about which the description says nothing. This is comparable to talking about material objects but saying something only about their weights and locations, or talking about visible colors but only about their intensities. The differences among the forms of incomplete description have to do with which and how many parameters of behavior they are noncommittal with respect to. In Table I the deleted parameters are indicated by D's on lines 5-9.

There are two major reasons that an observer-describer might normally have for giving deficient, or incomplete, descriptions of behavior. The first is that as an observer he doesn't have the informational basis for giving a complete description. The second is that he is formulating behavioral regularities which don't involve all the parameters of the behavior. For example, if we consider such ordinary activities as playing chess, telephoning a friend, driving a car, or putting someone in a double bind, different people will do them for different reasons, so if we want to represent these activities as behavior patterns which are common and repeatable we have to leave out any reference to those various motivations.

Among the incomplete forms of description there are two which may be of some special interest here. The first of these is the Performance

Description shown on Line 6. I mentioned earlier that in their discussions psychologists and philosophers have generally shared an implicit notion of what "behavior" is and that it corresponds to only one of the parameters of intentional action. Actually, it corresponds to two of them, i.e., Performance and Achievement. Psychologists and philosophers have been giving Performance Descriptions of behavior as though these were simply descriptions of behavior. This is overtly the case, for example, in the Skinnerian definition of an operant as "a response that has an effect on the environment." It also holds for Schwayder's formula.

There's an interesting feature of Performance Descriptions. They are neutral as between behavior on the one hand and posture and movement on the other. Under a Performance Description there is no difference between my eye blinking and my blinking my eye or between my arm going up and my raising my arm. Because Performance Descriptions are equivocal in this way, it is standard practice for psychologists to generate physiological or quasi-physiological causal accounts of certain movements and then reinterpret the movements as behavior so as to have accomplished an 'explanation' of that behavior.

It's also the case that the English lexicon is ambiguous with respect to all the forms of description shown in Table I. We don't have distinctive terminologies for these various forms of description. I could say "He's telephoning a friend" and be giving any one of the forms of description shown in Table I. If I wanted to make it clear that I was giving an Activity Description in ordinary English, which isn't always plain English, I would have to say something like "He's telephoning a friend--but I don't know why."

However, if one didn't recognize that the phrase "but I don't know why" was an explicit deletion operation, it would be easy to come to suppose that the "why" was something distinct from the 'behavior' and find it necessary to re-introduce the "why" as an 'explanation' of the so-called 'behavior'. It's not at all difficult to think of the philosophers of action in this regard.

Next, the Achievement Description is of interest because it rounds out our picture of intentional action as a calculational system. An Achievement Description, which is shown on Line 7, refers only to the results produced and not to any intention or process of producing that result. We noted that in Table I, the single initial Element is intentional action. There were also four Operations to be performed on this Element. Now, having generated the notion of an Achievement Description, we are in a position to be more precise and systematic again. The performing of an Operation on an Element is also an intentional action, but under an Achievement Description. We have the overall result, then, that (a) the Element is intentional action, (b) each Operation is intentional action, (c) each Product is a form of description of intentional action, and (d) the giving of such a description is intentional action. So there is no part of the calculational system which takes us beyond the concept of intentional action. This gives a strong sense to the statement that the concept of intentional action <u>is</u> a calculational system.

Next, on line 10, the Identity Operation is a formal device, comparable to adding zero or multiplying by one. Its effect is to change the status of Formula (1) from that of Element to that of Product. As a Product it can serve as a form of behavior description.

Our final operation is that of Reduction, and the result is a cause-effect description. The Reduction operation consists of eliminating the distinctions among two or more parameters of Intentional Action, as shown in lines 11 and 12. In those formulas the collapsed, or amalgamated, parameters are indicated by C's or E's. To understand how this works you have to remember the characterization of the several parameters of intentional action and also keep in mind that the values of K, W, and KH are given by specifying states of affairs, whereas values of P are given by specifying a process and values of A are given by specifying an event. Then, when you have the amalgamations shown in Table I, the English version becomes "Under certain conditions, something happens non-accidentally," which is a cause-effect form of description. Notice that this is possible because the concept of intentional action already contains the notion of the non-accidental production of an effect. The function of the Know How parameter is precisely to exclude accidental happenings from the range of instances of intentional action. Conversely, one of the functions of Achievement Descriptions is to enable an observer to specify a given result as <u>un</u>-intended. Further, the motivational parameter is what conceptually defines the unit of behavior. When the state of affairs that is wanted becomes a state of affairs that is achieved, the behavior of <u>trying</u> to accomplish that result is ended. When we engage in behavior with some end in view, if we accomplish that end, we do not regard that generally as accidental. So, indeed, under certain conditions, something happens non-accidentally. Notice that causality as a non-accidental production of a result has nothing to do with determinism unless one adds an extraneous theological interpretation. We need causality as part

of a science of behavior. As to the theology, I'd say we have no need in science for that kind of hypothesis.

Technically speaking, once you have a C-E form of description, you can do anything you want with it. You can substitute anything you want for C or for E and you can taxonomize any way you want for C or E. For example, you can substitute a Performative Description for C and an Achievement Description for E and the result will be Formula (I) again. Or substitute a Performative for C and an Intentional Action for E and you have a Social Practice Description, which is a kind of cause and effect description, as Gilbert Ryle pointed out some time ago. One interesting case results from substituting a Performance Description for E. In connection with that you would designate the "Cause" as consisting of historically derived "controlling variables" and you would have the old-fashioned psychological concept of the "conditioned operant response." But the "Cause" can also be divided into the same three kinds of fact as were originally given by the cognitive, motivational and competence parameters of Formula (I). The difference would then be that you could now speak of the operation of reasons, intentions, desires, etc. as <u>causes</u> of 'behavior'. That sounds familiar, too, from the philosophical literature.

This concludes our survey of Products in Table I, and we will not have time for any further development of the methodological roles of observer-describer and critic. Looking back on the material I've presented, I would characterize it in three ways.

First, briefly, a reminder that this was a fragment of a considerably more extensive formulation, and as such, any presentation of it would have

to leave some number of loose ends. I've tried to keep that to a minimum.

Second, although I can't claim to have shown this in detail, I think you will not find it entirely implausible to suppose that the intentional action formulation gives us access to the full range of possible behavioral facts and, moreover, does this in a systematic, rather than ad hoc, way. If so, it provides a conceptual framework which relates every part of psychology to every other part and relates psychology non-reductively to every other science and discipline. We saw with the Substitution operations that we had access to self-awareness, language, rationality, social behavior, and meaningfulness in behavior. We saw with the Identity and Deletion operations that we had access to those aspects of human behavior which are shared with other, non-human species. That is, the sentient, motivated, adaptive, mobile, and instrumental aspects, as well as individual and group variation. Via Performance and Achievement, we had access to physiological and, more generally, circumstantial, conditions relevent to behavior. And we saw with the Reduction operation that we could give descriptions in a cause and effect format which laid their technological cash value on the line. Give this much, it wouldn't be all that whimsical to say that Formula (1) is "the human equation".

Notice, however, that although the intentional action formulation is as rule-following as you can get, this way of unifying the subject matter of psychology and unifying the sciences is quite unlike anything suggested by philosophers of action or by philosophers of science, who don't seem to get much beyong theorizing, covering laws, and the problematic logic of experimental confirmation. The closest analogue is probably the concept of

"deep structure" in transformational linguistics, though you would have to interpret that with some charity. That is, instead of looking for simple empirical or methodological universals or playing childrens' games with ad hoc formulas such as stimulus-response, cause-effect, or input-output, we achieve conceptual and methodological unity by formulating the phenomenon of behavior as behavior, but doing so in some substantial logical depth. You could say that Formula (I) "homogenizes" the subject matter of psychology, but you could also say that it organizes the diversity and puts it all together. That isn't child's play, but it can be done.

That already brings us back to the theme of this paper, but, thirdly, I want to return specifically to the four-way interaction that I referred to earlier. In the light of the parametric analysis of behavior and the calculation of forms of description, that four-way free-for-all doesn't seem at all perplexing. It certainly wasn't an historical necessity, but neither is it at all surprising that there would be those viewpoints, those committed ways of talking, those parochialisms, those misunderstandings, and those controversies. As I've tried to indicate at various relevant points, it seems that all the facts of the matter lie within the range of behavioral possibilities which Formula (I) gives us access to. More particularly, these facts have to do with the range of behavioral options open to observer-describers and critics in our current psychological and philosophical practices. For that very reason, however, that controversy isn't of much intellectual interest. Given the generative and representational power of Formula (I) I find it hard to imagine pursuing those 'controversial' issues or waiting upon their possible resolution in order to carry on my business as a psychol-

ogist dealing with both human action and causal explanation. Which is not to say that I wouldn't be keeping my eyes open to see how those issues develop. Indeed, I think we have a potential for a converse assimilation here. The conclusion that those issues are not inherent in the subject matter, but are only generated as historical accidents by the current customs and styles of philosophers and psychologists is not, of course, a conclusion that I would expect could simply be taken over by philosophers. However, I have no doubt that with some of the concepts and distinctions I've presented here one could construct a philosophical argument to that general effect, and that argument would be a philosophical one and it would merit serious attention by philosophers.

I guess I should say that with a smile.

FIGURE 1. A Parametric Formulation of Behavior

(1) <B> = <IA> = <I, W, K, KH, P, A, ID, S>

Where

B = Behavior (Instances of behavior are identified directly by locutions in ordinary language)

IA = Intentional Action (The technical designation for Behavior under the present parametric analysis)

I = The "Identity" parameter (Refers to the identity of the individual whose behavior it is; values of this parameter are given by names or individuating description)

W = "Want" = The motivational parameter (Values of this parameter are given by specifying states of affairs as being wanted)

K = "Know" = The cognitive parameter (Values of this parameter are given by specifying states of affairs as being distinguished or conceptualized)

KH = "Know How" = The competence parameter (Values are given by specifying prior states of affairs as a relevant learning history)

P = "Performance" = The process, or procedural parameter (Values are given by specifying a process)

A = "Achievement" = The result, or outcome, parameter (Values are given by specifying events and states of affairs)

ID = The "Individual Difference" parameter (Values are given by specifying personal characteristics of which the behavior is an expression)

S = The "Significance" parameter (Values are given by specifying behaviors or behavioral patterns engaged in by means of the behavior in question)

FIGURE 2. Methodological Roles

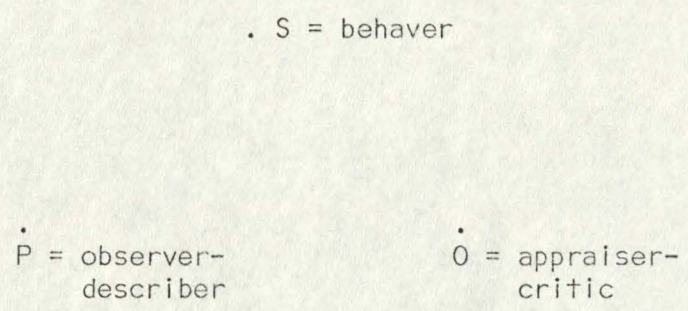

FIGURE 3. Verbal Behavior

(1) <B> = <I, W, K, KH, P, A, ID, S>

(2) <V> = < C, L, B>

Where

V = Verbal behavior

C = A concept

L = A locution which stands in 1-1 relation to the concept C

B = A class of behaviors which involve C in the value of the K parameter