Outline of "Behavior Description"

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Section I. Outline of "Behavior Description"

Part I. The primary contribution here is the delineation of "object," "process," "event," and "state of affairs" as purely formal and systematically interrelated concepts (analogous, for example, to "addition," "subtraction," "multiplication," and "division"). The formal character is shown by presenting in content-free form the interrelationships among the four in the form of "transition rules" for moving from one of the four forms of description, e.g., an "object" description, to another description of a different form, e.g., a "process" description. Recognizing these four (object, process, etc.) as parameters of our observations and descriptions rather than as the external realities which are the objects of our observations and the referents of our descriptions leads to the following developments:

1. No application of these concepts is identifiable as having any methodological priority -- no more than any application of arithmetic to particular content or in particular kinds of measurement could possibly qualify as being its basic application. In particular, physical objects (process, etc.) are no more basic than psychological objects (processes, etc.). Perhaps when the millenium comes, everything will be actually expressible in physical (physiological, etc.) terms. But then, on the basis of "Persons," everything can be expressed in psychological terms, with no trouble, and today -- and so what? That is not a basis for asserting priority.

2. A priori assumptions that physical references are basic has led to various theses about parsimony in psychological theory and to
various linguistic practices associated with these theses. Example: "But we don't need to talk about intentional action in order to carry on a scientific study of behavior, and so it's unparsimonious to say that intentional action is an essential or useful psychological construct." Answer: We might arrange it so that we would not need to talk at all in doing science -- and so what? What one needs to say in the course of carrying out an activity (e.g., baseball, "scientific" psychology, or psychotherapy) must be sharply distinguished from (a) what one needs to say in order to give an adequate account of that activity, and (b) what someone needs to be able to say in order that there should be any such activity at all. For psychological explanation it is these latter that are crucial, whereas discussions and theses regarding parsimony have focused on the former.

3. The notion of a "referent" has no present net value anywhere outside of technical semantic theory. When a "referent" is said to be a portion of the real world to which some of our expressions refer, that is simply unintelligible if it is taken simply and literally. The specification of the referent, B, for the locution, "A," is simply the exercise of linguistic competence with respect to the locution "B" and does not represent a prelinguistic access to reality. There is symmetry here such that we can also say that A is the referent of locution "B." The competence involved is the competence to say that this object (process, etc.), A, is the same object (process, etc.) as this object, B. That is quite different from saying that A is merely B or that A is really B. This formulation lays the basis
for a non-reductive "Unity of Science" position foreshadowed by Part II of Felknor's paper on activity description. The argument that infants and animals demonstrate the phenomenon of "prelinguistic access to reality" is dealt with via a paradigm case formulation (cf. the discussion of "aware of x" and "aware that X is the case" in "Persons," Part I).

4. We could not possibly observe every object, process, event, or state of affairs which we can identify or talk about, not even those which we say are actually observable. Consequently, (a) reality (which consists of objects, processes, events, and states of affairs) has an intrinsically hypothetical, linguistic aspect, (b) we are necessarily limited in our ability even to try to confirm statements about observed objects, etc. (including even statements to the effect that this is such and such an object, process, etc.), (c) for a piece of human behavior to qualify as a test of the truth of some statement, or even as an attempt to do so, it must conform to standards of rational (intelligible) performance, just as any skilled action must, including the condition that (d) a truth-testing performance, though it may be part of another truth-testing performance, is intelligible at all only as being ultimately part of a more inclusive activity which is not a truth-testing activity, so that (e) demands for empirical verification do not carry a constant methodological weight, (f) our present methodological double-standard in which a demand for verification always takes precedence over an assertion could not be consistently applied, and (g) the more general basis for evaluating or making investigations (verifying) is our standards of rational
behavior, which are neither as amorphous nor as much like computer logic as is frequently supposed.

5. Finally: our attempts to understand and explain what we observe consist largely (perhaps entirely) of making the transition from one description (object, process, etc. description) of what we observe to another description (object, process, etc.) in accordance with the transition rules. This helps only if the redescription is one which we already know how to use. That is, if the new object, process, etc. is one of those from which we already know what to expect. Thus, the popularity of "models" and the compellingness of underlying process theories in psychology, since we "know" that whatever behavior occurs, there is a physiological description of the same object, the same process, etc. When we talk computers and mediation, we talk "as if," but when we talk of physiology we are likely to say "that's what behavior really is."

Part II. The foregoing evolved as a necessary preliminary to an attempt to clarify the difference between "skill" and "ability." Part II begins with a set of summary statements regarding the following concepts and some of their interrelationships: skill, activity, social practice, performance, institution. This section is an attempt to map out the various forms of behavior description (as contrasted to "Persons," where the parameters of behavior description are presented), hence the title of the report, "Behavior Description." The summary statements are elaborated into a discussion of the following topics:

1. "Skill as tied to the individual's learning history and an achievement which identifies that history vs. "ability" as tied to
an achievement which demonstrates the ability and to an achievement
description which classifies the achievement and identifies what
ability it is. The difference is crucial in regard to what an in-
dividual may be said (a) to know how to do and (b) to have learned
to do, as against (c) merely to have succeeded (even, consistently
succeeded) in doing. Some of the implications of the distinction
between "knowing how" and "being able to" are developed in Appendix
C of "Persons."

2. The question of standard and non-standard performances. The
implication of a standard performance (i.e., of meeting performance
standards, not of giving a stereotyped performance) is built into
our normal ability or skill descriptions. It is misleading, rather
than flatly incorrect to say simply "he knows how to do X" (e.g.,
how to get from one place to another) when he can do X only in a
grossly non-standard way (e.g., by crawling, or again, by moving one
inch per hour). This is because (a) ordinary skill or ability des-
criptions serve the function of telling us what else to expect from
the person, (b) there is a limiting case (e.g., moving one's arm)
where there is no difference between performance and achievement, and
(c) skills and abilities are never absolute—unless our references
to them are otherwise qualified, they carry the qualifier "under
normal conditions." [Parenthetically: hence the possibility of "con-
trolling behavior" by setting up special conditions.]

3. The "generative" character of all skills, not merely (as one
might suppose from reading Miller, Chomsky, Fodor, et al.) verbal
skills, and the question of whether "belief" (and the associative
concept of "truth") can be replaced by the concepts of action, attitude, and rule-following.

4. The problem of the acquisition of skills and abilities (and knowledge and motivation). Here we have a "Developmental Paradigm" which is a purely formal transition schema arrived at deductively from the paradigm of intentional action presented in "Persons." The limiting case is the infant who could be said to be completely lacking in both skills and knowledge, hence in motivation also. If he is able to succeed enough (and parents ordinarily see to that), he acquires both knowledge and skills even though he hadn't any to begin with. If he has some, he acquires more either by succeeding, as in the original case, or (primarily) by making use of what he already has. Since to distinguish X from Y is to create the possibility of wanting X rather than Y, motivation develops apace.

It turns out that this schema applies not only to child development, but to behavior change generally, including psychotherapeutically induced change. Parenthetically, the schema exhibits "self-actualization," "functional autonomy," curiosity," and "competence motivation" as system principles rather than as peculiar sorts of motives or mechanisms. Thus, we have an account of why an individual consistently and persistently acts in these ways (and why these are said to characterize the "normal, healthy personality") without the very implausible supposition that he somehow distinguishes this way of behaving and wants to do it or that he somehow knows how to behave that way. Some of this is already worked out in the discussion of Allport in "Persons."
5. A comparison and delineation of five major forms of behavior description (performance, activity, action, social practice, institution). Apart from carrying through the distinctions and characterizations systematically, the major point here is that these forms of description are just that and not references to different phenomena (not names of different "referents"). Two parameters for distinguishing among descriptions are (a) scope of the context or phenomenon (e.g., "social practice" descriptions refer to patterns of behavior which generally are more extensive [in space, time, complexity] than intentional actions) and (b) degree of commitment (e.g., a performance description is noncommittal relative to the corresponding action description, and an activity description is noncommittal relative to the corresponding action description or social practice description).

A good part of this discussion follows closely the content of Part II of Felknor's paper. His aim is to give event-sequence descriptions of two or more activities in sufficient detail to show some identical constituents and patterns, i.e., to show that two activities are going on at the same time and in virtue of the same set of events. This is a strategy for elucidating some of the non-obvious (including pathogenic) things that go on in families at the same time as some other, obvious things are going on. But clearly, it is a strategy which is "in principle" applicable to behavior generally, including psychotherapy in its "know how" aspect, and is applicable where one of the activities in question is a physical (physiological, etc.) activity. Hence the possibility of "Unity" in science without the metaphysics of reductionism. This position goes beyond the familiar
"double language" position in setting the requirement (and showing a way) of saying specifically what it is that is "the same" in particular cases.

6. One line of development extends the analysis of behavior description to the problem of "covert behavior," including, importantly, "thinking." The line developed here is that to say that someone is thinking is not to give a straight-forward description of something hidden, covert, or very subtle, but rather, it is to give a very noncommittal activity description of what that person is doing. To illustrate this, I've taken the closing section of Lyle Bourne's paper on thinking, with which I am in general agreement, and revised it "as I would have written it." Given this kind of conclusion, it becomes a practically important but methodologically trivial task to establish whether specific other activities (e.g., physiological) regularly accompany thinking, and if so, the degree to which manipulation of one contributes to our ability to control the other.
Section II. Expansion of $I_1$, $I_2$, and $I_3$ of Outline

Introduction

The present report is intended as a systematic elaboration of the material presented in LRI Report No. 3 ("Persons"). In the first section ("What is Observed") the discussion of description (Introduction and Part I of "Persons") is taken as a starting point and the descriptive system which forms the basis for observation is summarized. This descriptive system consists of the concepts of object, process, event, and state of affairs and their interrelationships, which exhibit a degree of completeness and coherence reminiscent of classical set theoretical systems. An examination of this system provides some further clarification of the significance of the Person concept in respect to such perennial topics as observation, explanation, reductionism, "language and reality," and parsimony.

In the second section ("Behavior Descriptions") a systematic account is given of the variety of structural forms of behavior descriptions and additional associated concepts. Here the concepts of action, social practice, activity, performance, achievement, skill, and ability are examined and presented. The frequently bewildering spectrum of interrelationships among such concepts is found to exhibit a degree of orderliness which reflects their articulation within the Person concept and the "observation" concepts. (Indeed, the identification of the observation concepts came about as a result of insights and problems associated with earlier attempts to systematize behavior descriptions.) In turn, the conceptualization of behavior description is extended to encompass
the formal aspects of thinking and personality development.

Misgivings in regard to the "authoritative" tone of the report are referred to "Persons" (Introduction, and Appendix A).

I. What is Observed

We have noticed that making an observation is no such simple thing as "reading off the features of what is actually there." We have noted, too, that neither infallibility nor universal agreement is characteristic of observation. Some further complexity is revealed when we ask what, most generally described, do we observe? The paradigm case of observing an X is to know that it is an X, to be able to say that it is an X, and to be able to treat it as an X rather than a Y or Z. Our abilities in this respect are codified by a particular set of concept-types. What we know how to recognize a thing as and treat a thing as is (a) an object, (b) an event, (c) a process, and (d) a state of affairs. To say that we observe such things is to say that there are exemplars of each sort which we come to know about on occasion without on that occasion having to find out something else first. For example: (a) I see a table, a person, an automobile, a body of water. (b) I see an automobile stop, a person smile, a window shatter. (c) I feel the water become hot, see the sugar dissolve, hear the fly come in this window and out that one. (d) I see that there is a chair in the room, that the motor is lacking a carburetor, that he has finished third in a five-man race.

The four concept-types are by no means unrelated, for we have ways of redescribing exemplars of each kind as exemplars of the other kinds. The transitions are made in accordance with the following rules, which do not necessarily represent a minimum set. Because the rules may be applied
successively, and some are recursive, considerably more than ten sorts of transition are possible.

A. Basic transitions.

1. A state of affairs is a totality of objects and/or processes and/or states of affairs.
2. An event is a change in a state of affairs.
3. An object is a state of affairs having smaller objects as constituents.
4. A process is a continuous change in a state of affairs.
5. An object does not change. [To represent a change in an object, we first transform the object into a state of affairs (see 3) and within that context introduce an event (see 2) or a process (see 4).]
6. The immediate constituents of a process are processes. (A process divides into smaller processes.)
7. The occurrence of an event is a state of affairs.
8. The initiating or terminating of a process is an event.
9. That a state of affairs is similar or different in particular respects from another state of affairs is a state of affairs.
10. Every object, process, and event is a constituent of some state of affairs.

B. Limiting cases.

1. The state of affairs which includes all other states of affairs (i.e., the world).
2. A set of objects which have no constituents (ultimate constituents; basic building blocks).

3. A process in which nothing changes (an object or state of affairs which persists unchanged).

4. A process which has no parts, i.e., is an event or something like an event (e.g., a unit class of events).

C. (Informal) Characteristic features.

1. Objects have histories and are embedded in states of affairs, along with other objects.

2. States of affairs have histories consisting of a succession of preceding states of affairs.

3. A process has an outcome, which represents the difference the process makes in a state of affairs which includes the process.

4. Any two object constituents of a state of affairs are related in one or more ways which go beyond co-constituency and its formal consequences. These relationships may be, e.g., geometrical, economic, emotional, kinetic, or any others appropriate to the types of object involved. Similar considerations hold for events, processes, or states of affairs which are part of a given state of affairs.

Certain aspects of this set of transitions and its use may be worth noting explicitly:
1. Content-free concepts.

The reference to objects, processes, events, and states of affairs is entirely content-free. The significance of "object," "process," "event," and "state of affairs" is purely formal, not substantive. One might say, these are to be thought of as bookkeeping concepts, along the lines of "profit," "entry," "balance," or "asset," rather than production-line concepts as exemplified by "steel ingot," "worm gear," or "switching assembly." For example, it is not that "an event" is a descriptive term which we use to characterize the occurrence of something, where that occurrence is already known or observed. Rather, to see something as having occurred is to have seen something as (and treated something as) an event rather than as, e.g., an object.

In particular, an event, object, process, or state of affairs is not ipso facto a physical event, object, etc. Physical events, objects, etc. can be designated only by introducing an additional condition, i.e., that the domain of discourse is that of physical objects (the use of a distinctive descriptive system by Persons is constitutive of a domain of discourse) rather than, e.g., that of numbers, prices, or psychological objects. And, of course, nonverbal practices go with significant verbal practices. Some ways of treating something as an object qualify as cases of treating something as a physical object; other ways of treating something as an object qualify as cases of treating something as a psychological object (a Person) or as a biological object, etc. Because these differences are systematic, we speak of, e.g.,
person descriptions and physical object descriptions as representing the use of distinctive descriptive systems.

The substantive neutrality of the four "bookkeeping" concepts has a historical significance as well as a methodological significance. One of the most pronounced cleavages of thought in the domain of "philosophy of mind," hence also in "philosophy of science," at the present time involves the semantically oriented positivists and post-positivists on the one hand and the pragmatically oriented "ordinary language" philosophers on the other hand. One factor which has made a very apparent contribution to this cleavage has been that the positivists have assimilated everything that can be observed to the expression "physical," "material," or some equivalent (cf. "physicalistic language"). Thus, from the postulate that science is empirical (i.e. observationally based) they have moved to the conclusion that scientific discourse has an indispensable "physicalistic" component and thence to the further conclusion that all scientific statements can be expressed in physical terms. To be sure the last conclusion is merely "in principle," for clearly, nothing of the sort can now be accomplished. Nevertheless, the transition from "observational" to "physicalistic" to "physical" has made it possible for positivists to attain considerable conviction in the "in principle" argument and in the disparagement of other views as irrational (cf. Brodbeck, 1963). Naturally enough these positivistic tactics and conclusions have defined the standards for "rigor," "hardheadedness," and general respectability in psychological methodology.
"In principle, everything can be expressed in physical terms."

"The human body is merely a complex physical object." "Reports of sensations refer to brain processes." These are familiar expressions of the assimilation of "observational" to "physical."

It is only recently that this assimilation has begun to be subjected to an explicit frontal attack. For example, Long (1964) has argued that the "question" of whether a human body is a physical object cannot even be formulated and so is not a question at all (no more, for example, than the 'question' "What's trumps?" can be formulated as a question about a chess game). Perhaps it is time to go further and introduce the symmetric counter-argument:

In principle everything can be expressed in psychological terms.

It should be quite clear from the prior formulation of the Person concept, with special reference to the technique of paradigm case formulation (Ossorio, 1966) that there is nothing whatever to prevent us from reformulating physical theories as statements about persons of a particular kind (i.e., physical particles) whose difference from the persons we are familiar with is codified primarily as a status difference (i.e., a PII, or "individual difference" description). And although, like its counterpart, this is an "in principle" argument, it is quite different in that it could be done today and with no difficulty whatever.

We may regard it as a historical accident, including the fact of residual emotional and polemic liabilities associated with "anthropomorphism," that many psychologists are trying to contribute to our understanding of Persons by trying to treat them as
non-persons, whereas few physicists are trying to contribute to our understanding of physical objects by trying to treat them as Persons. Ordinarily, psychologists who take this tack do so on the grounds of "parsimony."

"But we don't need to talk about 'wants' in order to describe or control behavior," is a paradigm locution for the advocate of 'parsimony.' But we do. To be sure, he (or they) need not talk about wants or wanting in order to control someone's behavior. But then, neither does he have to talk at all in order for what he does to be a case of controlling some behavior. (See the discussion, below, of "the knight took the pawn"; see also the discussion of "they are playing Bridge, only they don't know that that is what they are doing" in Part III of Persons.) And for the description of behavior, he might say merely "behavior," rather than make relatively unparsimonious references to variables," "responses," "operants," "cues," "habit family hierarchies," etc. But he would have to say that, too, not merely utter certain sounds. And if his merely uttering those sounds were itself merely a case of controlled behavior, then all the more evidently, nothing which qualified as giving a description would have taken place.

The issue of parsimony is in part the issue of when we have adequately described what we are doing. A psychological investigator whose major form of activity was conducting learning experiments or "shaping behavior" might respond to the question, "What are you doing?" by replying, "I'm doing science." For another investigator of his own genre, that would be enough, for the latter
would already know what "doing science" amounted to when it was that person who was doing it. And if the reply was "training two groups on a double-alternation problem," the second investigator would not need to be told that this was a case of "doing science." (Similarly, participants in the game do not need to be told that announcing trumps is a case of "playing bridge.")

Clearly, what is missing for the "parsimonious" investigator is the distinction between (a) what he has to say to another, similar, investigator in order to be understood, and (b) what has to be said by him or anyone else in order to give an adequate account of what he is doing. Professional locutions (theories, theoretical terminology, technical terminology) are what is required for a given set of professional social practices to be carried off. In the case of baseball, the requirements would include such locutions as "play ball," "strike one," "safe," and "ball three." In the case of investigating learning, the requirements might include such locutions as "operant," "rate of responding," "the controlling variable was X," and "under a fixed-ratio schedule."

Since the use of professional locutions is part of the social practices which constitute a given genre of scientific or other professional activity, such locutions carry no presumption whatever as to their suitability for describing those practices or activities. In general, other locutions are required. For example, in baseball, some reference to "inning," "team," "win," "umpire," "pitcher," etc. is required in order to say what is taking place,
whereas none of these locutions is required in the course of playing the game. In general, professional locutions omit reference to what can be taken for granted by the participants (hence they have the character of partial-descriptions--see Persons, Part I), and what is universally taken for granted is that it is persons who are engaged in the activities in question. But it has been pointed out (Persons, Introduction) that for a person to be engaged in a professional activity, e.g., the activity of providing accounts of human behavior, is for him to be engaged in a form of human behavior, hence any set of professional locutions which necessarily makes no reference to this form of human behavior is ipso facto inadequate for a general account of human behavior. This is a consideration that is peculiarly relevant for psychology, since with respect to other professional groups there is no reason why their professional locutions should provide an adequate account of human behavior. But if, as is here taken to be unquestioned, it is the central task of psychology to give an adequate account of human behavior, then this consideration, which is elsewhere merely a general methodological point, is for scientific psychology a crucial substantive point which provides a criterion for the adequacy of our scientific conceptualizations.

Evidently, the evolution of a scientific discipline is generally associated with a "streamlining" of the body of professional locutions which are required of the participants (this trend may be obscured by the extension of the discipline to new content areas, which generates additional terminology). The body of professional
locutions is likely to become more and more abbreviated and elliptical (i.e. 'parsimonious') to the extent that specialized training and standardized procedures facilitate cooperative activities among the participants. (Consider that many games may be played without anyone saying anything.) We might imagine, for example, that the actual operation of a psychological research center was carried out with no more communicative activity than an occasional nod or grunt. Participants in such a setting would not need to refer to anything whatever. However, that would not render any simpler the task of providing an adequate description of what they were doing, and so it would not render any simpler the task of providing an adequate account of human behavior, and so it would not simplify the task of scientific psychology.

2. Neatness.

The point of formulating the transition rules explicitly is that they codify behavior (these are transitions that persons make), not that they put us into contact with states of affairs which are antecedent to human behavior and independent of it. The transition rules codify our ability to move from one kind of description to another, but in this there is no implication that the reason we can do this is that there are phenomenon of the sort we describe. (Neither is there any basis for denying that there is anything of the sort - there is no basis for saying anything about what is "out there." But then, we do not need to, either.)

If we give up the notion that the reason we are able to treat things as objects, processes, events, and states of affairs is
simply that there are such things, we will be less inclined to
suppose that every transition that might be made in accordance
with those rules in particular cases would be successful or
intelligible or have a point. That is, we would not suppose a
priori that every such move to a new kind of locution would be
a case of describing something or referring to something or
saying something. (No more than there is always a point to
uttering the words, "I now pronounce you man and wife.") Indeed,
as the limiting cases show, what we sometimes do is to refuse to
make any further moves of a given kind, or conversely, to talk as
though all the moves of a certain kind had already been made.

Thus, our ability to observe some objects, processes, events,
and states of affairs and to move from a particular description
of one kind to a corresponding description of the other kinds
should provide no encouragement to adopt that familiar metaphysical
proposition that all the states of affairs which we can describe
are analyzable into statements about a single set of ultimate con-
stituents, i.e., spatio-temporal statements about physical parti-
cles.

3. Referent and "Referent."

The notion of a "referent" as that item in the world to which
a locution refers is a way of bringing some pragmatic constraints
to bear on the elaboration of semantic apparatus. For example,
it reminds us that to have six names or descriptions of a single
piece of wood is different from having six descriptions, one each,
for six pieces of wood. It reminds us, too, that when we invent
or apply six different descriptions to the same piece of wood we
do not thereby create six pieces of wood.

In a semantic context, the "referent" has, in this way, a
kind of absolute character -- referents are a limiting feature
of a language, not a part of it -- referents are what our language
is about, and they provide the "reality constraints" for our
language.

In a pragmatic context (i.e., one in which nothing is excluded)
there is no place for an absolute of quite this kind. Unfortunatel­
ly, it is easy to carry over into pragmatic contexts those ways
of talking which have found some use in semantic contexts, and
which suggest such an absolute. Consider, for example, the
following classic semantic formulations:

(a) "The map is not the territory."
(b) "The sentence 'snow is white' is true if and only
    if snow is white."

Both formulations, because they appear to imply that the
distinction between language and reality is itself a pre-
linguistic distinction (i.e., that the distinction can be known
and has a basis completely independently of language) could be
taken literally only if we were in a position to make those
distinctions without language that we in fact make with language
and only if we could without language take the world to exhibit
(or consist of) just those states of affairs which we do take it
to exhibit and which we in fact require our language in order to
distinguish from those states of affairs which we take it not to
exhibit.
With respect to the less complex version, (a) we should have to ask, "What territory is it that the map is not?" The answer to such a question cannot be given by pointing (NB the discussion in "Persons," Introduction, of the problem of identifying a subject matter) but only by saying (or an equivalent -- e.g., pointing will succeed only if there is an equivalent saying). But that is no less a "map" than the original "map" against which we were warned.

With respect to the second form, (b) since the locution "snow is white" is used as well as mentioned in that "metalinguistic" sentence, it seems clear that (b) presupposes that a certain state of affairs can be distinguished from others and can be taken to be the case. Which state of affairs is this? The state of affairs identified by the locution "snow is white," Without language we could not distinguish any state of affairs as being this state of affairs nor could we intelligibly take some other state of affairs to be "the same" as this one or "different" from this one. Thus, the determination that that state of affairs (snow being white) is the case is no less essentially the exercise of a linguistic competence than it is of a non-linguistic (e.g., visual observational) competence.

In a pragmatic context this is the general case with respect to referents. The determination of the referent of locution A is the exercise of linguistic competence with respect to some other locution, B. It is this feature of the situation which drops out of sight in the corresponding semantic context and
thereby gives the latter the appearance of coordinating something verbal with something non-verbal, for here the linguistic competence with respect to B is simply taken for granted as a feature of the "metalanguage" in which the "referent" is identified, but does not appear in the "object language" which contains the locution, "A," for which a referent is required. But in the paradigm case it is the same person who must exercise both the linguistic competence involving "A" and that involving "B." For this reason the separation of the two linguistic competences as belonging to two "languages" is likely to be more misleading than otherwise except possibly in certain technical semantic contexts. This is particularly evident when the same expression has to be regarded as two expressions (which suggests two competences) because they occur in different languages, i.e., the object language and the metalanguage.

(Compare: "The referent of 'snow' is snow.")

The methodological error in much of our current and recent talk about "referents" or "denotation" is to suppose that being an object (or process, etc.) is a case of being a referent in the way that being a cat is a case of being an animal. The supposition is that objects, processes, etc. are what referents are. A less misleading formulation is to say that to refer to a particular object (or process, etc.) is also to identify a particular referent. (More briefly, an instance of "an object" is also an instance of "a referent.") And it is no more possible for a locution to refer merely to "an object" than it is for it
to refer merely to "a referent" or to "an instance." In all such cases we should have to know which object or which referent or instance. If we have not been told which, we have been told nothing. Without such knowledge, which in the paradigm case requires linguistic competence, we could at most identify a form of discourse or a domain of discourse but we could not have said anything substantive within that form or domain of discourse.

For example: Because we do (and can only) treat this "chair" in certain ways (and not others) with the ease and difficulty that we do and in the kind of circumstances we do, this chair is an instance of "an object"; because we talk about it in the ways that we do (which is indispensible to those being the ways we treat it and to their being the ways we treat it) this chair is an instance of "a referent"; and on both counts it is an instance of "an instance."

But to what do we refer by the "this," and what is the "it" that is an instance of "chair"? We have no way to answer such a 'question,' and so it is not a question. What we do have is the competence to say, on some occasions and not others, that what we have spoken of as some object in this way and as some object in that way are "the same" in the sense of being the same object (or that they are "different" in the sense of being different objects). If we can distinguish one "piece of wood" from another and one "chair" from another, than I can say that this piece of wood is what I am talking about when I say "my
chair." Here, one might be inclined to say that this piece of wood was the referent of "my chair," that it was the "territory" of which "my chair" was merely a 'map.' But I might also say that this chair is the one I am talking about when I say "my chair," and now there will be no tendency to see a 'referent' here or to distinguish 'map' and 'territory.' And neither case requires an "it" which is known prior to an independently of any description (e.g., "piece of wood," "chair") and of which it is known that "it" instantiates just those descriptions (e.g., "piece of wood," "chair," "physical object") which it in fact does instantiate.

(Classically, this point is put in the form: "We have no knowledge of bare particulars.")

Enlarging the scope of discussion from semantic to pragmatic provides significant new opportunities for recognizing two apparently different things as "the same." For it becomes clear that the notion of a prelinguistic access to reality (commonly formulated as the perception of physical objects) is "the same" as the apparently very different notion of a unique, real description of states of affairs (ordinarily conceived of as a physical-object description) by means of which we specify the referents of other forms of locution. Both represent the same attempt, i.e., the attempt to assert a privileged access to Reality, hence an attempt to deny the reality constraints codified by (not caused by) our use of language. In both cases the attempt is carried out by initiating a new way of talking, as though the reality constraints lay in the talking we engaged in rather than in the limitations on what we
can do at a given point in history, including the limitation of the mutual dependence of what we can say and what else we can do.

Ordinarily the thesis of a prelinguistic access to reality is defended by reference to the ability of human infants (preverbal) and speechless animals to discriminate among objects and behave accordingly. Their behavior, we say, cannot depend on language, for they have none, hence it is simply perverse to talk as though language created the behavior described in the language. But it is important to note that it is not simply the case that infants and animals discriminate among objects and treat them accordingly. An essential feature of the situation is that they discriminate the same objects we do (we could not know it if they distinguished other objects which we do not) and treat them in ways that we recognize as "treating them accordingly."

The statement that the referent can exist in the absence of the referring terminology appears to be based on the reification of the verbal "it" into an underlying, real IT, in contrast to its genuine function of coordinating among a class of referents which are "the same" object (or process, etc.). For if we do not have the picture of a real IT which corresponds to our verbal "it" (why should there be and how could anyone know it) we will not suffer the usual pangs at the idea of creating something, for that will amount only to doing something different, and that does not bother us at all. The proper model for "this pawn and this piece of wood are the same object" is "six plus two and eight are the same number."
It does not bother us, for example, to say that we created pawns when we invented the game of chess and also to say that this pawn may be the referent of some present locution, e.g., "this piece of wood" or "this physical object." We see nothing contradictory between saying both of these and saying that that piece of wood, which is "the same" object as that pawn, might have been there even if there were no such things as pawns; but then, it will also be the case that the pawn might have been there even if there had been no such thing as "a piece of wood" or "a physical object." And nor does the latter tempt us to say that that pawn might have been there even if there were no such thing as a pawn.

Yet we forget this logic when we say that this nonverbal infant grasps that pawn or that piece of wood or that object and that this in no way depends on there being people who know, and therefore talk, about pawns or pieces of wood or objects. The infant's grasping the pawn in no way depends on his knowing of pawns or speaking about pawns because it is not for him that we speak of his grasping that pawn. It is for us that we say this, and it is in our lives that his grasping that pawn has a place - that he grasps that pawn is an achievement which we describe, not yet a performance which he engages in. It is a fact for us, not for him. His "grasping that pawn" is part of our activity, but not yet his. To speak of his grasping that pawn is like speaking of the knight capturing that pawn. To think of this as something the knight does, independently of
ourselves who alone speak of it and know of it, takes on the appearance of a naive realism with respect to language (this being the consequence of taking a certain kind of linguistic competence for granted).

But what do we say to one another about the infant (what is the "factual reference") when we say that he grasps this pawn and distinguishes it from other objects, even though he does not know what a pawn is? Well, what do we say about that knight when we say that it captures that pawn? There is nothing in question in the latter case. We do not even feel the need of adding that the knight does not know what a pawn is, for nobody would have supposed that to begin with. In contrast, there will come a time when "the same" human object will no longer be an infant and will know of and speak of pawns, and so there is a point in denying that he has yet acquired that ability. There is also equal point in noting that what is going on is importantly similar to what would be going on later when he might straightforwardly grasp a pawn. And so we say, "he grasps that pawn" but "he doesn't know that that is what he is doing." There is a point to our saying that.

The pragmatic formulation of language leads us to ask, not the semantic question, "What is the reality that would make that statement true?", but rather, the pragmatic question "What is he doing in saying that?" or, alternatively, "What is the point of his saying that?" And the point of this
transition is to bring us from the verbal fantasy of an ideal, unknowable realm of Truth to a knowable and often manageable reality. Whatever hinges on its being a pawn that the infant grasps (and not, e.g., merely a piece of wood or something else) can be a contingency only for individuals who know of pawns and speak of them, and distinguish them from pieces of wood and other things, i.e., us.

We want to say, "But the contingencies, the consequences, of his grasping the pawn are natural events. They don't depend on what we call them - what we say doesn't create facts or events out there." To be sure, what we say doesn't create the facts or events we talk about. But that fact is a linguistic fact.

It is as though we said, "The numbers we add or multiply do not create or cause sums or products." There is no question about this, either, nor do we have to establish this empirically. Neither, however, is there any question that we could have no sums or products if we had no numbers. The phenomena of sums and products would be non-existent except for the following conditions:

(a) We distinguish one number from another.
(b) We know how to multiply or add numbers.
(c) When we add the result is a sum, and when we multiply the result is a product.
(d) We distinguish one sum or product from another.
(e) Which sum results is determined by which numbers were added, and which product results is determined by which numbers were multiplied.

That this sum is the sum of these numbers is not a fact by virtue of my saying so. Rather, it is a consequence of our having a way of establishing it (we calculate). And our having this way of establishing it is wholly dependent on the numerical distinctions we make. That we make the distinctions we do (and no others) is as "hard" a fact as the hardest fact imaginable, and so the conclusion that some other facts depend on this fact, though they are not equivalent to the latter, is in no sense a falling away from objectivity.

Similarly, it is only because we distinguish the different events (and objects, processes, and states of affairs) that we do that there is any such thing as a cause, contingency, or consequence. For it is only because we make the particular distinctions that we do (and that requires language) that a particular event or state of affairs stands in a causal relation to another particular event or state of affairs. Were it not for particular events standing in causal relationships there would be no such phenomenon as "causal relationship" - there would be no such application of this locution as it now has, and so the question of a "referent" for it would not even arise (Not "would not arise for us," but simply "would not arise"). That a given antecedent is that antecedent rather than some other one, and that what its consequence is is this consequence rather than some other one, depends wholly on
the fact that we can and do make the distinctions we do (including the distinction between antecedent and consequent), that we can and do say what we do, and that we know how to treat something as an event and as a consequent or antecedent. ("Consequent" and "antecedent" identify a relationship between event constituents or state-of-affairs constituents of a state of affairs - see "d" under "Characteristic Features," above.)

We have heard it said, as a part of our semantic mythology, "An experiment is a question posed to Nature, and Nature provides the answer." But, of course, it is we who provide the answer. That is a consequence of our having a way of arriving at an answer (a different sort of "calculation"). That we have a way of arriving at an answer is not itself an empirical discovery.

That we can and do say and distinguish and do as we do is different from our being unable to do these things, and we can say this as a linguistic fact even though we cannot say what it would be like if we were unable to do the things we do. (It is like being able to say, and say sensibly, that our playing chess and bridge and no other games is different from our playing other, unknown games instead, even though we cannot say what it would be like to be playing some other, unknown game instead.) That we can and do distinguish and do as we do and not some other way or not at all is the state of affairs in which we find ourselves - it is "reality." Since our present ability to do this range of things and not some other is the same as our present inability to do some other range of things, we may say that our present range
reflects "reality constraints." Although our saying so may appear unexciting because it refers to a linguistic fact (for we sometimes forget that language is part of reality, too), it is a way of doing justice to the facts of our limitations in a nonparadoxical way. Unlike most attempts to give an account of human limitations, it does not require the self-contradictory supposition that we somehow have knowledge of something that could not be known (Reality, independently of human activities) or that we somehow have the ability to do something that could not be done (discover that Reality).
"I have a penny in my pocket." That tells us about a person, something about his resources and circumstances.

"I have a penny in the bank." That tells us something about a person's resources and circumstances, too, but now this is not accomplished by telling us about a round object and a place. I know how to look for the penny in his pocket, and I know what it would be like to find it. In the other case, I do not have to suppose that there is a similar object at the bank, and if I were there, I should not know what object to look for.

People have thoughts. But having a thought in my head is not like having a penny in my pocket. It is not that kind of having. Rather, it is much more like having a penny in the bank. The fact that we have thoughts reflects the fact that thinking is something we all do. (If there were no such social practice as the spending of money, there could be no such resource as money and no such circumstance as my having money, either.) To say this about people is to say something about their knowledge, skills, abilities, performances, and achievements, as well as the social practices in which they participate. It is not to say something about a hidden computing process that results in, precedes, or governs their behavior.

Saying this, of course, does not make the job of understanding thought and/or "implicit behavior" any easier except insofar as it may reduce the likelihood of pursuing dead ends in our investigations or in our conceptualizations. It is still the case that a person's having this thought rather
than that one (or, indeed, his having any thought at all at a given time) is frequently difficult to establish in any practical sense and is impossible to establish beyond any possible doubt, and so speculation is easy, dissimulation is feasible, and confusion is common.

One thing that can be said with confidence is that for an individual to have a thought is for an event to have occurred. Such events are datable and locatable. They occur at a particular time and to a particular individual.

An event is, per se, a change in something. Then what is it that undergoes a change when a thought occurs? The person to whom it occurs, of course. But can something more be said about the difference in his state that constitutes his having had the thought?

Several answers might be given. For example, the difference might be that he has a certain amount of mental (or verbal, if that be different) imagery; or it might be a change of a physiological sort, for one is at no time without such changes; or it might be a new disposition to behave in identifiable ways. But none of these changes is a logically necessary condition, and none have been shown to be empirically sufficient conditions for thinking a particular thought. That is, when any of these sorts of changes do occur, it is not their occurrence that makes the thought the thought it is or guarantees the occurrence of any thought at all. [The presence of a penny at the bank is not a guarantee of anything at all, either.]

There is only one answer that seems adequate, in principle, to cover all the cases that we know. That is, when an individual thinks of X or has the thought of X, what has changed is that he is now in a better
position to exercise particular skills in particular ways corresponding to particular achievements. In brief, having a particular thought represents a change in the individual's possibilities for behaving.

To illustrate: If I think of a solution, or a possible solution, to a problem, my relation to a part of the world has changed. I can now perform in certain ways, i.e., solve the problem, or at least, attempt to do so, which before I could not. To be more concrete, if it occurs to me (if I have the thought that) the combination to that safe is given by the numbers I saw written down on the paper lying on the table (i.e., the numbers 32-13-62), then I am in a position to open the safe straight away (if I am right), or at least, to make that attempt rather than some other, because it was that thought rather than some other.

Having a certain thought is an event which is a change of state. The resulting state is a position from which (a condition in which) the individual might better undertake certain actions rather than others. When one of the facilitated actions does occur (for example, if I do go ahead and open the safe, using the combination 32-13-62), it is natural to think of the thought as part of that behavior, even though we have to qualify it as an invisible, initial part. It is easy to do that because having had the thought explains, or helps to explain, the occurrence of that behavior. We say, "He did X because it occurred to him that P." If we take it for granted that an explanation must refer to a cause, we may use, "It occurred to him that P," as a way of identifying that hypothetical cause.

When the facilitated behavior fails to occur (e.g., when the thought leads, instead, to another thought) we do not need to suppose that anyway,
the invisible part (the thought) has occurred. When we report (of ourselves) or suspect (of others) the occurrence of a particular thought what we report or suspect is basically just the fact of having come to be in a better position to do such and such. Only sometimes is any inclination or preparation to do such and such involved. That I was in a better position to do such and such at a given time is part of the significance of what I did at that time. This is so whether I say that I did X because it occurred to me that P, or that I didn't do Y because it occurred to me that P, or that I did Q in spite of realizing that P, or that I didn't do R earlier because it hadn't yet occurred to me that P, etc., etc. Whether or not the thought was one that was acted on, reporting the thought clarifies what behavior it was that took place then or subsequently.

In telling a story, I do not describe the story--I tell it. And in telling what I thought, I am not describing my thought--I am telling it.

"I went out to the terrace because it occurred to me that he might be there." In telling my thoughts I am telling something about my resources and circumstances. I am presenting myself in a certain light, not by describing what went on inside, but by identifying what I had to go on. I am thereby clarifying what behavior it was that I engaged in. Thus, although I am not giving a description of any sort, I am endorsing a certain description of what behavior it was that I engaged in (in the present example, the description is that I was searching for him).

It is one thing to explain what I did by reference to a certain thought that I had. It is another to say no more than that I had a certain thought. One point of distinguishing between the inclination to act in a
certain way and having such and such a thought is to take account of the fact that the report of having such and such a thought is noncommittal in just the way that the report of having a certain object is noncommittal (which may help to make clear why it makes sense to talk in such similar ways about having a penny and having a thought). That is, we can give no exhaustive list either of what might be done with that object or of what might be done on the basis of having that thought. (And if we had such a list, we could have no way of discovering that it was exhaustive.)

In the example given, I might have opened the safe, but equally, I might have asked someone whether that was the combination, or I might have wondered why it should be in plain sight, and so forth. Whatever it is that we identify when we speak of "the thought of X," it is not something from which the occurrence of a particular behavior follows, and so a thought does not have the characteristics of something which produces specific behaviors in the manner suggested by reference to hidden, underlying computing processes.

If having a thought is an event, why isn't thinking a process, a mental process buried away in deep structure of behavior. Isn't this what we are talking about when we speak of pondering, reflecting, calculating, deliberating, etc., in everyday discourse? Of course we are speaking of the deep structure of behavior here. And we ought to ask, how could the deep structure of a behavior consist of an intangible, non-behavioral something (or worse, a tangible something) which produced the behavior? Equally, how could it possibly consist of the invisible beginning of that behavior? No, the "deep structure" of a piece of behavior consists of its being precisely the particular behavior that it is, and as such, importantly
different from some other behavior. Its having a "deep structure" at all reflects the further fact that what behavior it is is frequently not obvious and that to identify what behavior it is may require reference to objects and events not then and there observable or to circumstances the recognition of which requires a high degree of skill.

We may see behavior as a simple thing, and then thinking will be a complex function of behavior. [That complex function might be formulated as a complex antecedent, if we insisted on talking in a causal idiom, but then it would have to be an invisible, intangible antecedent rather than an empirically ascertainable, observable antecedent.] In contrast, we may see behavior as complex, and then thinking will be a relatively simple aspect of it. The latter formulation perpetuates no mysteries.

What, then, about the "process" characteristics of pondering, reflecting, deliberating, calculating, etc.? These are what we might describe an individual as doing at a given time and for a certain period of time, and this is characteristic of processes rather than events. However, a little reflection will show that these are activity descriptions rather than process descriptions [or better, that the process in question is a behavioral process, i.e., an activity, not an internal process]. To say that a person is "pondering," "reflecting," and so forth is like saying that he is "drawing" when in fact he is drawing a picture of a horse [or like saying that something is "colored" when in fact it is blue]. That is, it is an incomplete, or non-committal description. A person cannot merely ponder, he must ponder about something. And he cannot ponder about something without having certain thoughts which are systemically related. It is the particular thoughts he has which determine what he is pondering.
about, and it is his having those thoughts during that period of time that constitutes his having pondered during that period of time. But having those thoughts was a series of events, not a process. The activity of pondering is what he was engaged in during the time he had those thoughts. Thus, "pondering" is not the name of a distinctive, inner process which brought about those thoughts. We know of nothing relevant that was going on in between his having those thoughts and that brought them to pass, even though the superficial structure of our references to "pondering" et cetera suggest that we do.

This is the case for underlying psychological processes generally -- for example, "making a decision," "adding two numbers," "selecting a hypothesis," "testing a hypothesis," or "forming an association." Even though we casually speak of the "process" of making a decision, forming an association, selecting a hypothesis, etc., the cash value of this kind of talk is brought out quickly by asking some simple test questions such as "What is it like to be part way through the process (of adding, selecting a hypothesis, forming an association, etc.), and what would be the result if the process stopped part way through?" When we do this, we discover that there is no difference between a process of this sort having failed to come to completion and its never having begun. In this important respect, psychological processes are quite different from the familiar paradigm cases of water flowing down a slope or an object moving from one place to another, and in the same way they are quite different from the invisible processes of the transfer of heat or electric charge from one body to another. To recognize these differences is to see that our apparent references to invisible processes of a psychological kind are
better described as disguised references to events of a psychological kind. What we do observe or discover is that a decision was made, a hypothesis was selected, an association was formed, etc., and these are events. It is not a matter of lacking information or being technically limited in our means of observing the processes which produce those events, but simply, of not knowing of anything to be looked for. Nothing that we know how to look for or recognize would qualify as such a process. Thus, to speak of such processes is not like spreading the rumor that, contrary to what we commonly believe, strange goings-on are constantly taking place in people's heads. Such a rumor might be shown to be well grounded, or else to be baseless, and it would make a difference which of these conclusions we arrived at. Whereas, underlying processes can as little be shown not to exist as they can be shown to exist. Because of this, there is no difference between there being such processes and there not being such processes. And so, also, there is no difference between our talking about those processes in the way that we do and our merely talking in a peculiar way.

So what is missing in an account of behavior or thinking which fails to mention any underlying processes? To be sure, there are observable physiological processes which occur and recur (and, hopefully, can be related empirically to behavior and thinking). And unquestionably there are observable psychological processes, i.e., overt behavior, the structure and course of which we frequently describe in terms of "thinking" or of having particular "thoughts." Is anything missing here? Are there any real questions about thinking or behavior the answer to which depends on the discovery of a hidden, inner process? Questions exist only when we
can recognize an answer as the right answer and when something hinges on what the answer is. References to underlying processes evidently fail on both counts. But we can, it seems, give answers to questions about thinking and behavior by reference to learning, experience, abilities, performances, and achievements.