LINGUISTIC RESEARCH INSTITUTE

Report No. 4D

OUTLINE OF DESCRIPTIVE PSYCHOLOGY

FOR PERSONALITY THEORY AND CLINICAL APPLICATIONS

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1. "Personality" refers to a range of facts, <u>not</u>, e.g., to a peculiar sort or <u>thing</u> or <u>process</u>. The facts in question are facts about persons, their behavior, their knowledge of one another, and their relations to one another.

2. The familiar, molar, descriptive facts of this sort are represented in the NBQ diagram. In the diagram, <u>each</u> of N, B, and Q are persons behaving with respect to one another. Each observes, describes (or understands), and responds accordingly.

$$B$$
$$.N \qquad .Q$$

3. <u>Each</u> behaving person can be analyzed conceptually into three behavioral roles (three methodologically distinct kinds of personality facts). The three roles are represented in the AOC diagram: A (Actor) is the behaver in general, who is, in principle, subject to observation; O is the observer-describer of A; C is the critic, or observer-appraiser, of O's description of A. In effect, the AOC diagram is a conceptual-methodological "close-up" of an individual in the NBQ diagram.

$$A$$
$$.O \qquad .C$$

4. The role of A, the general case of a behaving person, can be analyzed conceptually into the two logically related concepts of (a) behavior

as intentional ~tion (IA), and (b) personal characteristics, or individual ~ference (ID) concepts. In effect, the concepts of IA and ID provide a conceptual-methodological "close-up" of the concept of a behaving person in general.

4a. The concept of intentional action is articulated by means of a parametric analysis:

$$IA = <I, W, K, KH, P, A, ID, S>$$

(See Appendix 1 for interpretation of symbols).

4b. A structural type of personal characteristic is specified by (1) a type of behavior, or a principle (e.g., "achievement description"-- see below) for specifying a type of behavior; (2) a pattern of occurrence in a life history. For each structural type there are a large number of particular personal characteristics of that type. For example, "generous," "hostile," "public-spirited," "suspicious," "ambitious" are particular Traits.

4b1. The structural ID concepts can be classified as follows:

Dispositions	Powers	Comparatives
Trait	Ability	State
Attitude	Values	Status
Interest	Knowledge	
Style		
	(Capacity)	
	(Capability)	

4c. The concepts of IA and ID cover the range of all possible behaviors. Ordinary descriptions of persons and their behavior is accomplished

by _restricting_ he values of the parameters of IA, including the

ID paramet   Saying, e.g., "He's telephoning a friend" or "He's

angry at me" is not in principle a _label_ _for_ a completely determinate

something, but rather a way of _distinguishing_ one range of facts

(those compatible with the description) from another. However, the

matter is more complicated: See Section 5.

5. The role of O is analyzed conceptually as a special case of the role

of A. O is not merely a behaver in general, but specifically one

whose behavior consists of observing and describing the behavior of A.

(Note again that A, O, and C are distinct roles, not necessarily dis-

tinct persons.) In this behavior (IA), O _uses_ the concept of behavior

(IA). Now the role of O is articulated by specifying that his _use_

of the concept of IA consists of using it not as a simple description

(which was the most that could be suggested in 4c, above), but as a

calculational system (compare a grammar or algebra).

5a. In general, a calculational system is specified as follows:

| Elements   Operations   Products |
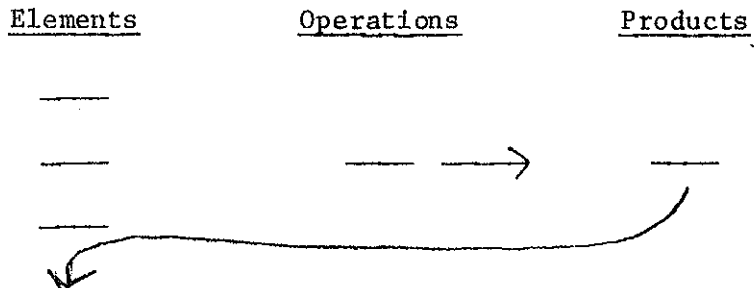
Given: an initial finite set of explicit elements and operations

Then: an operation is always performed _on_ an element and the result is

a product. Any such product is a new element on which the given

operation(s) can be performed to generate new products. (For

example, think of starting with a single element, the number "1", and a single operation, "add 1". The total range of elements will be the infinite set of positive integers.)

5b. The use of IA as a calculational system is summarized in Appendix 2. It shows a single element, namely IA, four operations, and twelve products. Each product is a form of behavior description. Each product becomes a new element on which further operations might be performed. Further, each operation is a form of behavior, given by an "achievement description."

5c. The major sorts of utility of the various forms of behavior description shown in Appendix 2 are as follows:

(1) Cognizant action descriptions may be used to represent behavior (a) which consists of describing behavior (i.e., the role of O in the AOC diagram), or (b) of a person who knows what he is doing.

(2) Deliberate action descriptions are used to represent behavior in which a person not merely distingushes among behaviors but also chooses among them. That is, he acts on grounds for doing one thing rather than another. (See reference to four standards or perspectives, below). Deliberate action is the paradigm case of human behavior. Note that in References 2 and 3, both cognizant actions and deliberate actions (which are a special case of the former) are called "deliberate action."

(3) Social practice descriptions are used to represent unitary sequences of behaviors by a single individual or patterns of behav-

ior involving multiple participants. (See reference below to
proces descriptions, "social practice" and "intentional action"
are special cases of the SA system (see below) category of "pro-
cess.")

(4) Deletion operations make it possible to refer to, to represent
systematically, and to act in terms of any aspect or combination
of aspects of behavior short of the full representation given by
IA descriptions. Commonest motivations here is (a) the describer,
O, is not in a position to give a full description of the behav-
ior; (b) some regularities, e.g., in social patterns do not in-
volve all aspects of behavior (compare the pressure-temperature-
volume laws in physics, which do not involve all physical aspects
of objects); (c) as a special case of (1) and/or (2), a behavior
describer, e.g., a therapist, may give motivationally non-committal
descriptions because the motivational implications of a full IA
description would generate unproductive resistance.

(5) Reduction operations permit a formal simplification of the repre-
sentation of behavior into a form which is in principle inadequate
but frequently useful to a person. Cause-effect descriptions are
the preferred form for most technology. They are useful because
they are an egocentric form of description: To have a description
of a causal sequence terminating in "G" is to have a description
of what it is I (any "I") have to accomplish in order to accomplish
"G" or prevent in order to prevent "G", and it is to have a des-
cription of what will happen unless I (or anything) intervene.

Note that these uses do not <u>require</u> reduction operations nor do they require a deterministic theory of causality. (See References 2, 3, and 6.)

5d. Since (1) the giving of a behavior description is a special form of IA, namely a "cognizant action," and (2) the <u>use</u> of IA as a calculational system requires only (a) IA as the single explicit "element" and (b) four special cases of IA (given by "achievement descriptions") for explicit operations, <u>nothing beyond the concept of IA is required</u> for the elaboration of the role of O and the range of structural forms of description available to O.

6. The role of C, the critic, is analyzed as a special case of the role of O, the observer-describer. C does not merely distinguish among behaviors, he <u>distinguishes among deliberate actions</u> in his own behavior of appraising O's description of A. His appraisal of O's description is given by an achievement description of O's deliberate action of <u>choosing</u> the description of A which was given by O. The achievement is expressed as the success or failure of O to meet the esthetic standard of correctness (or truth or objectivity) in choosing his description of A.

6a. The role of C reflects a more detailed analysis of deliberate action than was given above. Specifically, the grounds for choosing among behaviors in deliberate action can be categorized under four general standards or perspectives: Hedonic, Prudential, Ethical, Esthetic. The latter category, which corresponds to an undifferentiated concept
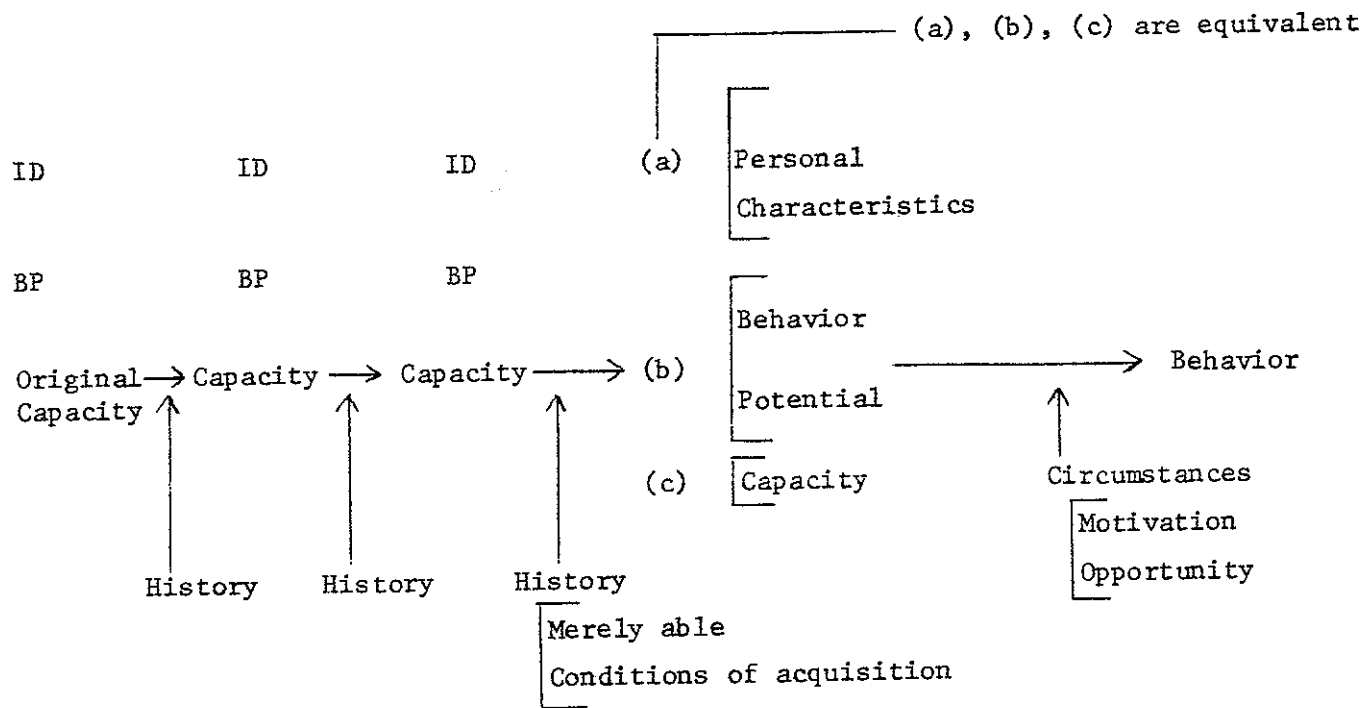
of "fittingness, includes three more familiar categories, i.e.,
(a) the usu notion of "esthetic" or "artistic," (b) the social con-
cept of "appropriateness," and (c) the "intellectual" notions of
truth, rigor, correctness, objectivity, etc. It is the latter perspec-
tive which is used by the critic, C, in making his appraisal of the
extent to which O's behavior (his choice of description of A) can be
correctly described as (a) responsive to that standard, or (b) exhibit-
ing competence in the use of that perspective. ((a) is equivalent to
(b)).

6b. The social practice of "negotiation" (see reference 3) is the paradigm
for the resolution of disagreement among critics of a given descrip-
tion. There is a guaranteed resolution for each participant, though
not necessarily agreement among them. Resolution of this kind leaves
no challenges to be raised or met by the participants, though there
may be other and further questions to be pursued (and disagreements
thereon subject to negotiation). Thus, the AOC analyses does not
create intractable justification problems with respect to behavior
description.

6c. The role of C is articulated by reference to the maxims shown in
Table 2. Formally, the maxims are logical constraints which O's
description of A's behavior must conform to if it is correct. The
constraints are logical because they are merely paraphrases of the
logical aspects of intentional action and of the person as an indivi-
dual who exhibits ID characteristics and whose history is a history of
intentional action. In effect, the maxims are the concepts of IA and

ID _from_ the _active_ point of view of C as a critic.

6d. Because behavior (IA) is logically complex, the fact of the occurrence of a given behavior will imply some number of distinct other facts, all of which are consistent with one another _in this way_, i.e., they correspond jointly to the occurrence of that behavior. Each observation-and-description corresponds to a given fact. Thus, the maxims serve as principles for relating one behavioral observation to another from the point of view (esthetic) of consistency. Since by virtue of this, one observation-and-description can be used as a check on another one, _the maxims serve as principles for giving empirically warranted behavior descriptions._

6e. The maxims may be categorized as follows: Maxims 1-6 deal with behavior; 7-9 deal with ID characteristics. Maxims 1-5 deal with behavior occurring; maxims 6-8 deal with the acquisition of behavior potential; 9 deals with the manifestation of behavior potential. Of particular interest for the study of personality is the "Developmental Schema," an articulation of maxim 8 into a general format for causal-historical (but _not_ deterministic) explanation:

—————————— (a), (b), (c) are equivalent

ID   ID   ID   (a)   Personal
                                           Characteristics

BP   BP   BP   Behavior

Original→ Capacity → Capacity ——→ (b)   Potential   ——————————→ Behavior
Capacity ↑   ↑   ↑
                                     (c)   Capacity   Circumstances
         │   │   │   Motivation
      History   History   History   Opportunity

                           Merely able
                           Conditions of acquisition

6f. There are really two units combined in this schema. The first is
used for the explanation of behavior:

Formula 1a. "In these circumstances, it would take that kind of person
to engage in this kind of behavior." (the psychodiagnostic formula)

Formula 1b. "Given this kind of person in those circumstances, and,
yes, that's what he would do." (the literary formula)

The second is used for the explanation of ID characteristics:

Formula 2. "An individual with capacity X will acquire ID character-
istic Y if he has history Z, or Z_2, or ... or Z_n."

NB If he didn't acquire Y, then either (a) he didn't have capacity
X, or (b) he didn't have one of the histories Z, or (c) we were
just wrong about those histories being the way one acquires Y.

6g. See Reference 2 for discussion of maxims and forms of description.

7. The giving of a behavior description is a form of behavior, hence,
it is the participation in a social practice. Moreover, it is the
participation in a social practice in which there is a place for that
description and its alternatives. In general, the particular way the
practice is carried out on a given occasion hinges on which of the
relevant descriptions is given. (Note the potential for conflict
here between the esthetic (truth) and other standards in choosing the
description. See below, the "contingency" in process descriptions.)

7a. The description of A by O, therefore, involves facts primarily about O.
We may therefore think of A as a boundary condition, as the reality
constraint on descriptions given by various O's. This contrasts with
arbitrarily (methodologically) selecting some description of A as

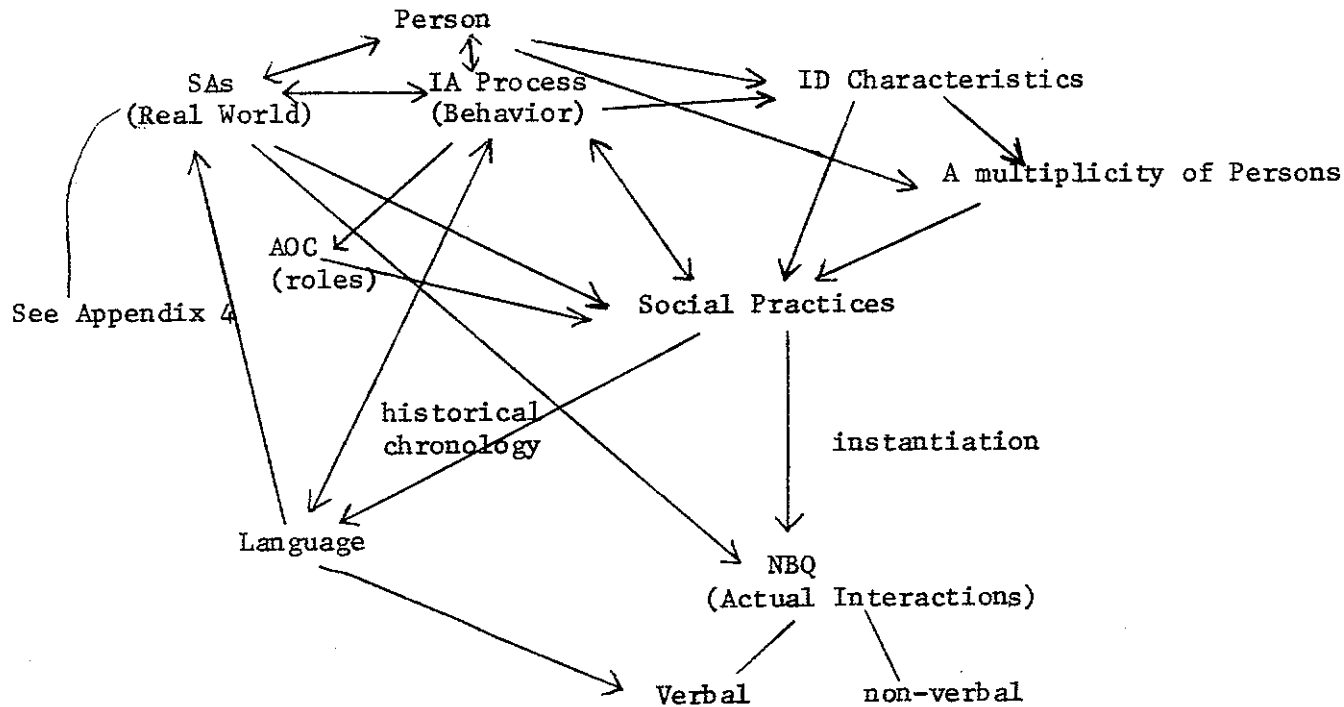somehow having guaranteed validity (see Reference 3).

7b. Specifically, the observer contributes (a) the observation of what was done, (b) the knowledge of what wasn't done, but might have been, i.e., what the behavior chosen was chosen from; and (c) the description is given for the sake of the observer, since his own choice of behaviors hinges on which description he gives.

7c. In the NBQ diagram, the concept of N's description of B is crucial even when no verbal behavior on N's part occurs. In this case, Q's identification of N's description of B amounts to Q's specification of the concepts under which N distinguishes B and reacts to him. (See formula (5) and section on verbal behavior in Reference 3).

8. For our purpose, a theory is a personality theory (a general behavior theory) to the extent that it provides general (universal) and systematic (logically articulated) answers to these three questions:

   (a) Why do people do what they do?

   (b) What are the differences among people?

   (c) How come people are the way they are?

8a. The relation of these three questions to one another and the scope of their joint coverage is given by the "developmental schema" above.

8b. The theorizing by a theorist (e.g., Freud, Jung, Allport, Binswanger, Skinner) may be represented as a particular instance of a person acting in the role of O, with the proviso that he is giving general and systematic descriptions. This being the case, we (members of the class) may now operate in the role of C, the critic of O's general
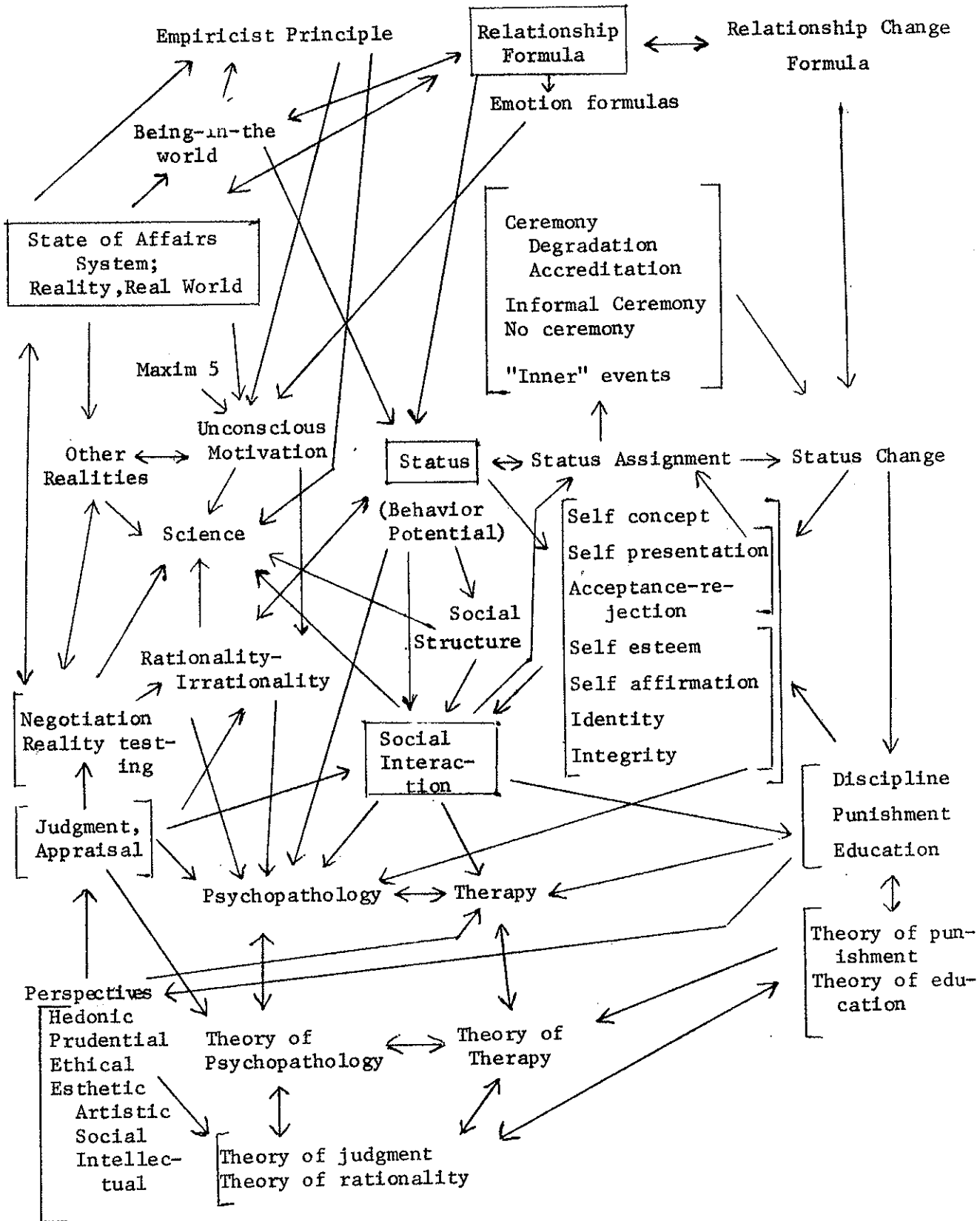
descriptions of A.

8c. We are able to operate in the role of C because the descriptive
system (the NBQ diagram and associated analyses) enables us to
represent (a) what it is that O says about A, (b) how O uses what
he says about A, and (c) A; and to do this in the same framework for
all O's, so as to compare what they say. Our representation of A
enables us to make judgments about whether what O says about A is
an adequate representation of A.

8d. The descriptive system is "neutral" in a way not hitherto achieved.
Since it is the logical articulation of a single concept, i.e.,
"behavior," it does not consist of statements about behavior, not
even general, systematic ones. (Note that concepts have no truth
value and cannot be asserted.) The descriptive system is therefore
not a more or less disguised pre-emptive bid for saying what behav-
ior really is (recall paragraph 7a, above). The proper model for
the function of the descriptive system is the familiar one of a co-
ordinate system. The IA system may be thought of as a logically com-
plex, verbal coordinate system in which any behavioral facts, in-
cluding 'facts' couched in theoretical terms, may be mapped. Our
descriptive paraphrases of theoretical statements are not (a) state-
ments of what the phenomenon really is, or (b) depictions of what
Freud (et. al.) really said. Rather, they are statements which Freud's,
Allport's, etc., are the same as.

8e. Formally, existing personality theories are not descriptions of A, but

in some sense, A itself. A picture of a house shows only a likeness of a house - it does not show the fact that it itself is a picture of a house. Likewise, Freud's (et. al.) portrayal of behavior does not portray the fact that it is Freud's portrayal. We are already operating as critics in giving Freud's words the status of "what Freud said about behavior" rather than the status of "what behavior is." And as critics, we need commentary and not merely paraphrase. For example, it would be logical nonsense to say that the Freudian concept of "impetus" is the same as Maxim 3. But we can say "using the concept of 'impetus' in the way that Freud does in describing behavior makes the same difference as our use of Maxim 3 in describing behavior."

9. The following is a heuristic representation of the major logical elements and primary logical links in the descriptive system:

9a.

Person

SAs
(Real World)

IA Process
(Behavior)

ID Characteristics

A multiplicity of Persons

AOC
(roles)

See Appendix 4

Social Practices

historical
chronology

instantiation

Language

NBQ
(Actual Interactions)

Verbal   non-verbal

Empiricist Principle

Relationship Formula

Relationship Change Formula

Emotion formulas

Being-in-the world

State of Affairs System; Reality, Real World

Ceremony
 Degradation
 Accreditation

Informal Ceremony
No ceremony

"Inner" events

Maxim 5

Other Realities

Unconscious Motivation

Status

Status Assignment

Status Change

Science

(Behavior Potential)

Self concept

Self presentation

Acceptance-rejection

Self esteem

Self affirmation

Identity

Integrity

Social Structure

Rationality-Irrationality

Negotiation
Reality testing

Social Interaction

Discipline

Punishment

Education

Judgment, Appraisal

Psychopathology

Therapy

Theory of punishment
Theory of education

Perspectives
Hedonic
Prudential
Ethical
Esthetic
 Artistic
Social
Intellectual

Theory of Psychopathology

Theory of Therapy

Theory of judgment
Theory of rationality

10. In general, behavior descriptions are given for the sake of the observer-describer (O), since his choice among behaviors open to him hinges on which descriptions he gives.

10a. If O is a theorist, the distinctive use to which he puts his description is his participation in the social practice of (making a living as a practitioner of) psychotherapy, experimentation, or academic theorizing.

10b. If O is, e.g., a student who wants to understand himself and others better and interact with others more effectively, he is already responding to others in terms of his descriptions (NB 7c, above). His aims would in general be furthered by mastery of the descriptive system and _practice_ in its use. More specifically, the expected value includes:

(1) He would become more accurate in describing himself or others;

(2) He would become better able to discover his own errors or to avoid being victimized by other persons' defective descriptions or misleading self-presentations (since he practices being a critic as well as an observer-describer);

(3) He would become able to achieve more elaborate and detailed behavior descriptions, hence

    (a) his understanding and appreciation of his own social practices would be increased,

    (b) his descriptions would provide clearer, more differentiated guidelines for his behavior, hence

(c) overall, his interactions with others would become more
meaningful.

(4) Since the result of practice is skill and sensitivity, none of
the foregoing is at the price of spontaneity (NB, Maxims 1 and 9).

10c. Not merely behavior descriptions but person descriptions are given
for the sake of the observer-describer. When O describes A as, e.g.,
"suspicious", "verbally facile", or "confused", the description
carries with it implications or suggestions of the following sorts.

(1) What is to be expected of A

(2) How A can be dealt with effectively

(3) What is the appropriate way to treat A

(4) What allowances to make for A

Thus, personality descriptions are not in principle references to
internal processes or internal causes of behavior, but rather are
ways of "calibrating" a particular person against a social norm or
against the observer-describer. In this way a person is able to
understand and deal effectively with other persons who are different
from him.

Because social norms (i.e., our knowledge of social practices) al-
ready codify what sort of actions are to be expected from persons
generally, the additional value of personality characterizations lies
in codifying the important ways in which a particular person's be-
havior can be expected to differ from the norm. The difference may
be of either of the following two sorts:

(1) his behavior lies outside the normal range

(2) his behav.. r exemplifies only a limited portion of the normal range. Thus, the fact that personality characterizations refer, if only implicitly, to social norms does not imply that ID concepts such as "generous", "suspicious", "confused", etc. are arbitrary "pigeonholes" into which we categorize persons at the cost of doing violence to their uniqueness and individuality. (It sometimes helps to remember that "unique" and "individual" are no less observers' categories than "generous" or "confused" or "trait".)

10d. The "calibration" aspect of person descriptions leads to the following principle which holds for observer-describers: If a person has a given personal characteristic and his behavior is an expression of that personal characteristic, that fact calls for no explanation; in contrast, if his behavior is not an expression of that personal characteristic, that fact does call for an explanation.

For example, if a generous person acts in a generous way, that calls for no explanation (recall 10c (1), above); however, if he acts in a mean or stingy way, that does call for an explanation.

10e. Clinical appraisals, whether couched in "psychodiagnostic", "existential" or "behavioral" terminology consists of some combination of ID and relational characterizations of the person. (See Section 11 for the relational formulation.)

11. As we have seen, the maxims are, collectively, a reformulation of the concepts of behavior (IA) and Person from the viewpoint of C, the critic. Because no new content is involved, the maxims are logical

constraints to which a behavior description must conform if it
is to be a ＿e description. Similarly, there is a reformulation
from the viewpoint of O, the observer-describer. In this case, we
speak of <u>behavior formulas</u> which automatically and implicitly in-
corporate maxims 1-5 and, in some respects and to some extent, the
remaining maxims as well. Hence, <u>the behavior formulas are pre-
empirical</u>.

11a. There is a single, universal, content-free formula, namely, the
<u>Relationship Formula</u>, of which other behavior formulas are special
cases generated by introducing specific conceptual content, i.e., by
specifying a particular relationship. Relationship Formula:
If X has a given relationship, R, to Y, the behavior of X vis-a-vis
Y will be an expression of that relationship <u>unless</u>

(a) X is acting on another relationship (with Y or with someone else)
which takes precedence, <u>or</u>

(b) X doesn't recognize the relationship for what it is, <u>or</u>

(c) X is unable at that time to act in accordance with the relation-
ship, <u>or</u>

(d) X mistakenly believes that what he did <u>was</u> an expression of that
relationship

11b. The concept of "relationship" in the general formula corresponds to
the concept of behavior potential and to the ID concepts of state and
status. A person's status is (without reference to his other ID
characteristics) the same as his behavior potential, and that is (again,
without reference to his other ID characteristics) the same as the

totality of his relationships with other individual elements of the
real world, and most importantly, with other persons. Thus, to
specify that X has a given relationship, R, with Y is to specify a
portion of his behavior potential.

11c. The relationship formula may be derived from the maxims, using Maxim
2 as the entree. If X has a given relationship, R, to Y, that _gives_
X a reason to treat Y accordingly, and he will do so, unless ... .
Note that the "unless" clauses are systematically related to the
parametric analysis of behavior. If "the behavior which is an ex-
pression of R" is thought of as an IA description with the parametric
values given, then the "unless" clauses (a), (b), and (c), are ways
of specifying that the required values of the W, K, and KH parameters,
respectively, do not obtain, hence, it follows that the behavior which
occurs is _not_ "an expression of R" -- a logical point, not an empiri-
cal one. The final "unless" clause does the same thing for the K
parameter when it is cognizant action and not merely intentional action
that is involved.

11d. Just as the Relationship Formula deals with the expression of relation-
ships in behavior, the _Relationship_ _Change_ _Formula_ deals with the ac-
quisition of relationships. Just as the former corresponds primarily
to the behavioral maxims (1-5), the latter corresponds primarily to
the causal-historical personal change maxims, especially Maxim 8.

Change Formula

Suppose that

R (X,Y)   X has the relationship R to Y

R' $\neq$ R   R' is a relationship other than R

B is an expression of R and not of R'

B' is an expression of R' and not of R

B' is the behavior of X vis-a-vis Y

Then R $\longrightarrow$ R'

That is, if the behavior of X vis-a-vis Y is <u>not</u> an expression of
the relationship which holds between them (namely, R), then that re-
lationship changes in the direction of one for which the behavior
that <u>did</u> occur <u>would</u> have been an expression. This is one of the ways
(the interactional way) in which new relationships may be acquired.

11e. Emotionally motivated behavior provides an important class of
special cases of the two relationship formulas. One example is the
<u>Hostility Formula</u>:

Provocation by Y elicits a corresponding hostility by X <u>unless</u>

(a) X is acting on other reasons for showing or not showing hostility
     (note that it follows that <u>no</u> hostility will be shown if the
     reasons not to are decisive), <u>or</u>

(b) X doesn't recognize the provocation for what it is, <u>or</u>

(c) X is not then able to show hostility, <u>or</u>

(d) X mistakenly believes that what he did <u>was</u> a show of correspond-
     ing hostility.

11f. Now consider a corresponding formula for fear ("Danger from Y elicits a corresponding attempt by X to escape the danger, unless...") and an actual description of fear-motivated behavior, i.e., "He jumped out the window when the lion walked into the room because he was afraid of the lion." A parametric formulation of this description would be:

Danger vs. non-danger

lion   vs. other sorts

room   vs. outside

get away,
avoid,
escape

```
                    K
                    /\
        W          /  \          P _____ A
                   \  /          jump out        get away
                    \/           window          avoid
                    KH                            escape
          (how to get through
           various openings)
```

Note that it is this entire package plus the learned tendency to act on the discrimination (danger vs. non-danger) without deliberation which is the fear behavior. "Because he was afraid of the lion" is not (a) the motivation (the value of the W parameter), nor is it (b) a hidden motivation which underlies the observable behavior. "Fear" is an observer's classification, not a mysterious part of the process.

11g. A general formula for emotionally motivated behavior may be stated as follows. Emotionally motivated behavior is deliberate action (in the sense of Appendix 2) in which

(1) the actor makes a discrimination

(2) the discrimination logically carries a motivational significance

(3) the actor possesses a learning history (know how) relevant to acting on that discrimination

(4) the actor has a learned tendency to act on that discrimination without deliberation

11h. Thus, the critical difference between emotional behaviors involving differing emotions is the cognitive aspect, i.e., the "discrimination" mentioned in the general emotion formula above.

12. The behavior-descriptive system outlined above has a number of significant relationships to existing ways of dealing with behavior. The following are summary impressions, which vary substantially in the degree of detailed backing which could be offered on request.

12a. No existing theory, discipline, or approach to behavior comes anywhere near providing access to the range of facts which are systematized in the descriptive approach.

12b. In terms of the AOC diagram, we may identify the following gross coverage:

A: Scientific theories are systems of propositions about A

O: Existing philosophies of science are anecdotal or apriori systems of propositions about a special case of O, i.e., scientific observer-describers (see reference 5 for an alternative).

C: There could hardly be said to be any discipline dealing with C. We have customs, rather than standards; we have appeals to authority (e.g., to the philosophers of science); and we have vague references

to "the court of reason", etc. (In a limited way, Toulmin's "The Uses of Argument" might be a candidate here for a systematic approach to the role of critic.)

12c. Particularly if we note that the "social practice" description can be elaborated into descriptions of social institutions, societies, cultures, and systems of social processes, the range of forms of behavior description (Appendix 2) provides a good first approximation for distinguishing and relating the various social sciences and the various "fields" of psychology. From this standpoint, the different behavioral subject "fields" are distinguished by the kinds of facts they systematize, hence, by the type of behavioral formula which serves as a paradigm for their "explanations" and descriptions.

12d. Aside from honorific references to hypothetical physiological determinants, all existing personality theories and other general behavior theories may be analyzed without remainder into more or less incomplete versions of some of the following descriptive elements:

(a) The C-E formula

(b) The parametric analysis of behavior

(c) The parametric analysis of ID concepts

(d) The maxims

For example:

The Skinnerian notion of "operant" is the notion of intentional action under a Performance Description (see Table 1, Appendix 2). Some of the parameters of IA which were deleted by the performance description (namely, the W, K, KH parameters) reappear as types of controlling

variables. "Controlling Variables" and "operant" occupy the positions of C and E, respectively in the C-E formula (see the second type of reduction in Table 1). "Operant Conditioning" is Maxim 2 and Maxim 3 stated from the viewpoint of an observer-describer-manipulator of behavior; similarly, "behavior shaping" is Maxim 8 stated from that viewpoint, i.e., in C-E form. "Discrimination training" is sometimes Maxim 6, sometimes Maxim 7, etc.

12e. Since all of Descriptive Psychology is non-empirical, so are our general theories of behavior. In that case, the traditional (a priori) notion that the point of experimentally 'confirming' these theories is to support the claim that they are 'true' is subject to fundamental criticism. (See Reference 4).

12f. On the face of it (see Maxim 1) the concept of intentional action is the concept of "behavior" or "doing" which is more or less implicit in every-day life, in the humanistic disciplines, and in the "borderline" social sciences such as economics, political science, etc. For example,

(1) The formulation of verbal behavior as a special case of IA is the only (apparently; to date) existing psychological formulation which is compatible with (a) experimental data, (b) currently dominant linguistic theory (transformational grammars), (c) philosophical formulations of the notion of "speech acts", and (d) non-experimental but generally accepted facts about language pointed out by linguists in criticizing psychological theories of verbal behavior. (See Reference 3 and Appendix 4).

(2) The parametric analysis of intentional action may be regarded as

a development of Aristotle's concept of practical reason, or the "practical syllogism."

(3) The concept of IA may be found in fairly explicit form in both Marx and Von Mises (and Rothbard), whose economic theories are diametrically opposed.

12g. The concept of "behavior formulas" as non-empirical schemata for giving particular behavior descriptions provides a link to moral philosophy and the philosophy of mind. Detailed analyses of mental and moral concepts which appear in this literature can almost always be construed as efforts to articulate behavioral formulas or the relationships among them. For example, all but one of the major elements of the "fear" example above may be found in a paper by Gosling (Mind, 1962). The formulas for love or envy are more complex, and the questions of whether one can be both pleased and embarrassed at the same time is even more complex. Part of the point here is that the philosophical analyses are explicitly non-empirical, and this has brought them into apparent conflict and competition with psychological theories which purport to be empirical, or at least empirically justified. In the descriptive framework, data and formulas do not compete or conflict (see below).

12h. There are several logical links between descriptive psychology and the "natural sciences."

(1) Any science and all of them jointly are a set of social practices distinguished by particular ranges of verbal and non-verbal actions. What is fundamental here is the fact of persons and their behavior and not the theoretical 'entities' alluded to in these practices.

(2) The natural sciences deal with a limited range of SA system

formulas, i.e., non human (e.g., biological, chemical, physical)

objects, processes, events, and states of affairs. These formu-

las and their specific instances are inventions of persons (see

above), and may or may not have any further significance (see be-

low). Since non-human objects and processes may (via the ID

concept of 'status') be represented as defective cases of human

objects and behavior, the latter are the universal subject matter.

(3) The structure of a social practice (and process descriptions gen-

erally) is specified in part by specifying contingencies, i.e.,

the restriction of otherwise-open possibilities as a function of

prior or concurrent states of affairs. Since there is no restric-

tion on the concepts which may be used to specify contingencies,

any findings of any science which have a significance for behavior

are directly usable as such within the science of behavior.

(4) Hence, there is no science more fundamental than behavioral science.

13. What is empirical behaviorally is not our behavioral formulas (theories),

but the results of their use. That is to say, the empirical questions

regarding (e.g., the hostility formula) are primarily of this sort:

(a) When can it be used, by whom, in regard to whom, and to what

effect?

(b) Likewise, what is the range of applicability of the "main clause"

and each of the "unless" clauses?

(c) Likewise, how does it relate to other formulas, e.g., is there a

priority hierarchy, and if so what is the nature of the hierarchy

and for whom?

(d) How can the phenomena which fit the formula be affected by
     human efforts -- what behaviors, what skills, etc. are required?

(e) What do various persons know about the formula and the phenomena,
     and what difference does it make to them?

In this way, systematic behavioral data gathering (psycholgical re-
search) can be seen to have a point which has nothing to do with
'testing' our formulas, not, at least, in regard to their truth, and
not in regard to their immediate practical utility. Neither is there
any principle which certifies the laboratory experiment as the primary
or 'really rigorous' form of data gathering.

Appendix 1

Parameters 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)

Appendix 2

Table 1. Behaviour as Calculation

	Element	Operation	Product
1.	<1, W, K. KH, P, A, ID, S>	Substitution	<I,W, <B>, KH, P, A, ID, S> Cognizant Action Description
2.	"	Substitution	<1, <B>, <B>, KH, P, A, ID, S> Deliberate Action Description
3.	"	Substitution	<I, W, K, KH, P, <B>, ID, S> Social Practice Description
4.	"	Substitution	<I, W, K, KH, <B>, A, ID, S> Symbolic Behaviour Description
5.	"	Deletion	<Θ, Θ, K, KH, P, A, Θ, Θ> Activity Description
6.	"	Deletion	<Θ, Θ, Θ, Θ, P, A, Θ, Θ> Performance Description
7.	"	Deletion	<Θ, Θ, Θ, Θ, Θ, A, Θ, Θ> Achievement Description
8.	"	Deletion	<1, W, K, KH, P, Θ, ID, S> Performative Description
9.	"	Deletion	<Θ, Θ, K, Θ, P, A, Θ, Θ> Stimulus-Response Description
10.	"	Identity	<I, W, K, KH, P, A, ID, S> Intentional Action Description
11.	"	Reduction	<I, C, C, C, C, E, ID, S> Purposive Description
12.	"	Reduction	<I, C, C, C, E, E, ID, S> Cause-Effect Description

Appendix 3

Table 2. Maxims for Behavior Description

1. A person takes it that things are as they seem unless he has reason
    to think otherwise.

2. If a person recognizes an opportunity to get something he wants, he
    has a reason to try to get it.

3. If a person has a reason to do something, he will do it unless he has
    a stronger reason not to.

4. If a person has two reasons for doing X, he has a stronger reason for
    doing X than if he had only one of these reasons.

5. If a situation calls for a person to do something he can't do, he will
    do something he can do.

6. A person acquires facts by observation (and thought).

7. A person acquires concepts and skills by practice and experience in
    some of the social practices which involve the use of the concept
    or the exercise of the skill.

8. If a person has a given person characteristic, he acquired it in one
    of the ways it can be acquired, i.e., by having the prior capacity
    and an appropriate intervening history.

9. Given the relevant competence, behavior goes right if it doesn't go
    wrong in one of the ways that it can go wrong.

Appendix 4

Verbal Behavior

The general concept of verbal behavior, V, is given by formula (5).

(5) $\qquad V = <C, L, B>$

The relation of verbal behavior to behavior is shown by the justaposition of formulas (1) and (5):

(1) $\qquad B = <I, W, K, KH, P, A, ID>$

(5) $\qquad V = < \qquad C, \qquad L \qquad B>$

In formula (5), C is a concept, L is a locution which stands in a one to one relation to C, (L is specified by giving a Performance description of the behavior of uttering the locution), and B is the class of behaviors which consist of acting on the concept C. Uttering L is thus a special case of B.

Appendix 5

The State of Affairs Conceptual System

The basic transition rules of the system are as follows:

1. A state of affairs is a totality of related objects and/or processes and/or events and/or states of affairs.

2. An event is a change from one state of affairs to another.

3. An object is a state of affairs having other, related, objects as constituents. (An object divides into related smaller objects).

4. A process is a sequential change from one state of affairs to another.

5. A process is a state of affairs having other, related, processes as constituents. (A process divides into related smaller processes).

6. The occurrence of an event is a state of affairs having at least two states of affairs (i.e., "before" and "after") as constituents.

7. The initiating or terminating of a process or an object is an event.

8. The occurrence of an object or a process is a state of affairs which is a constituent of some other state of affairs.

9. That a given state of affairs has a given relation to a second state of affairs is a state of affairs. (The relation may be, e.g., succession, similarity, incompatibility, inclusion, etc.)

10. That a given object, process, event, or state of affairs has a given characteristic is a state of affairs.

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