- Behavior's Common Denominator -
The Theory of Behavior

by
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Justification:

Hawking, S. W. in *A Brief History of Time.*
> "We already know the laws that govern the behavior of matter under all but the most extreme conditions. … Yet we certainly have not reduced these subjects to the status of solved problems; we have, as yet, had little success in predicting human behavior from mathematical equations! "[1]

William H. Brock, in *History of Chemistry.*
> "Historians of science are the first to stress that any theory, however erroneous in later view, is better than none."[2]

D.C. Dennett - per Hofstadter, D. R. and Dennett, D. C. in *The Mind's I.*
> "In the end we must return to the rigorous methods of hard science - the experiments, deductions, and mathematical analyses - to keep the speculations honest. These methods provide raw materials for suggesting and testing hypotheses, and even serve often as powerful engines of discovery in their own right."[3]

Google – 2024 *Gemini AI.*
> "The justification for a theory of behavior is that it provides a structured framework to understand, explain, and predict human actions by identifying key factors influencing behavior, allowing researchers to develop interventions and strategies to modify behavior in specific situations, ultimately contributing to better decision-making and addressing complex societal issues; it essentially acts as a lens to analyze the "why" behind people's choices and actions."

Definitions:

Behavior -
> Our actions - what we do:
>> Why do we do what we do.
>> What it takes for us to do something different.

Theory -
> A conjecture put forth as a possible explanation for known phenomena or relationships.

Common Denominator –
> A feature shared by all members of a group.

White Paper **-**
> Informs readers about a complex issue and presents the author's position on it.

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"The world is so full of a number of things,
I'm sure we should all be as happy as kings."

Robert Louis Stevenson, in _A Child's Garden of Verses_:

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Author's Forward

This document deals with a challenging, though important subject - the factors that go into determining our behaviors: Why people do the things we do (or have done) and what it takes (or would take) to affect change - for us to do something different. We believe there will be benefits to gain from this document's use and seek to encourage its consideration.

The essence of what we present can be captured by four terms:
A Treatise deals formally and systematically with a subject.
A Synthesis employs the combination of ideas to explain a system.
A Theory proposes an explanation for known phenomena or relationships.
A White Paper informs readers about a complex issue and presents the author's position on it.

This, then, is a white paper presenting a treatise that proposes a theory that is a synthesis of the behavioral sciences. While somewhat technical, its essence should be generally accessible.

As this treatise is about us, all of us, everyone is qualified to give a peer review. Comments are encouraged and appreciated: thetheoryofbehavior@gmail.com. Further information at *thetheoryofbehavior.com*.

PART ONE: THE SYSTEM

Chapter I.
Problem

Problem: A question proposed for solution or discussion.

Why do people do what they do? When faced with a choice, what determines which course we follow? When we get up in the morning why go to work? Or look for work? Or not even try? What causes some to dedicate themselves to a task while others reject that very same task? Why are actions taken that sometimes seem so irrational? And what determines one's definition of rationality? Why do we make the purchases we do? Or drive the car we do? Why do people pick the cell phone they carry? Or choose whichever social media link to follow? And spend time following it? And then grow out of it? Why do we vote for a particular candidate? Or not vote at all? What is it that makes some TV shows popular (many choose to watch)? Or songs (many listen)? Or artists? And why are there flops? Or occasional comebacks? Why do some people choose to help? While others seem to take? To hurt? Why do some feel life's worth living? While others do not? Why are people often characteristic of their groups? And why are some of these groups prone to characterizations? Why do we hate, or for that matter love? What determines if your spouse/partner likes you? Or you like them? Or not like them? Or change your mind after a time? At what point are we willing to fight? To surrender? Why do some children cling to the nest while others move out to live joyfully independently? Why do some persist when others give up? Why take the initiative? Why make the effort?

And to all the above, can there be a single answer? One design that accommodates it all? A theory of behavior.

Chapter II.
Premise

Premise: A proposition from which a conclusion is drawn.

People have a vested interest in the behavior of others that manifests itself everywhere - the home, in business, the community, and in national as well as international arenas. To recognize our interdependence, we need only reflect on the roles of spouses, bosses, customers, constituents and investors. Additionally, a wide range of others' actions have inherent impact - from the timely arrival of a plumber to the judgment of a commander in chief; for activities such as managing, coaching, counseling, persuading, directing, instructing, criticizing and reprimanding; in processes such as negotiating, bargaining and trading; and even simple activities like a walk in the park, watching television, or the morning ride to work require the consideration of others to make them practicable. The actions of others pervade our activities and affect every aspect of the course in our lives.

As so much hinges on human action people have sought to understand behavior, leading to inquiries ranging from sophisticated controlled studies from the finest institutions to clichéd approaches derived from unrepresentative observations. The result is an unending list of published material.[4] And emanating from this material are a host of conjectures purporting to define behavioral phenomena, or aspects of its elements.

But, say we select propositions with only the absolute highest credentials, or those with the greatest notoriety. Are we then left with a design that is sufficiently reliable to conform to specifications of the sciences - requiring that a body of information be systematically arranged to deduce generally applicable laws? Laws that would define relationships and state the outcome of those relationships with certainty, or with defined probabilities?

While no such law currently graces the behavioral sciences, indications are that a design is possible.

This treatise seeks that design - a fundamental explanation of behavior. It proposes that such a proposition can be devised and implies that sufficient information currently exists to conduct a competent inquiry. Additionally, it asserts that a concept's validity may be tentatively evaluated by its ability to explain observable experience. This, then, spells out our plan: To synthesize available information into a theory of behavior and to test that as it permits.

We reject as hubris any admonition that suggests "...the boundary condition for difficulty ... [involves] human behavior."[5]

Chapter III.
<u>**Postulates and Axioms**</u>

Postulate: Something assumed as either self-evident or proven that is a basis for reasoning.
Axiom: A proposition which is assumed without proof for the sake of studying the consequences that follow from it.

Propositions exist that appear to have elements of validity and that seem to interconnect, lending themselves to a unified theory. The items which follow shall be elevated to the status of axiom:

<u>A definable logic accounts for behavior</u>-
People are physical beings that occupy space and time and are comprised of materials whose properties and functions are essentially known. It must be assumed that we conform to the laws of science. Failure to do so would render any proper examination fruitless. For this reason, we reject notions that non-scientific entities manipulate behavior. Because no current system explains phenomena, does not relegate those phenomena to a mystical realm.[6] We hypothesize that there is a logical design that both governs and defines human behavior.

<u>The process and the variables must be dichotomized</u>-
We are projecting that there is a process people use for assessing variables that function irrespective of the variables which are being assessed. And that this applies to the entirety of the behavioral arena. It applies irrespective of size, scope, nature and origin of any variable. We assert axiomatically that the process and the variables can be separated and distinguished.
This paper seeks the process.

<u>People behave rationally</u>-
People behave in ways that appear logical and rational to them at the time their action is performed. This does not mean that a jury of peers would necessarily agree with any one person's definition of "logical" or "rational." Nor does it mean that individuals are free from errors in judgment. But rather, at the moment that they act, people believe their behavior to be the best alternative available. This says that criminals are behaving "reasonably" in their terms, workers assessed as "lazy" are similarly behaving "rationally," and no child truly "misbehaves" by their own definition. This applies generally - to the activists protesting their rights, the investment banker considering a proposal, the minister negotiating prices, the politician taking a stand, etc. At the moment a person is prepared to act, the action he chooses will always be the one which appears most logical to him at that time.

<u>People operate from their perceptions of reality</u>-
People base decisions on factors that they think are true, and operate from their perceptions of reality rather than reality *per se.* If a product is thought to be of inferior quality people will treat it as such, irrespective of any actual statistical reliability. The daily decisions that guide lives, economies and nations are founded on interpretive, oftentimes skewed

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observations. Empirical data is relevant in human decisions only in so far as people are aware of the data, understand it, believe in it and choose to act on it. In behavior assessments, there are no absolute variables.[7]

People manipulate variables-

The environments in which we live contain an infinite number of variables in a limitless range of shapes, sizes and dispositions. This is problematic since we are finite beings - finite beings cannot process infinite data. So to cope, people have evolved mechanisms which permit us to function under such circumstances. There are names for many of these mechanisms: generalization, pairing, projection, dissociation, rationalization, compartmentalization, intellectualization, regression, repression, etc. Many of these concepts have benefitted from substantial research, they are fundamental to our concept, and several will be focal at points in this treatise.

Behaviors are restricted to known options-

If one wants candy while at a movie, the candy must be selected from assortments on display behind the counter. The automobile one drives, the clothes one wears, and hobbies that one pursues are all confined to those which are known to exist and believed available.[8]

People have a choice of behaviors-

Most people have choices in their lives. During leisure hours the average person can choose to watch television or not, read a book or not, do yoga or take a walk in the park. Few of her personal choices are mandated: She can vote or not vote for a given political candidate, marry or not marry a particular suitor, purchase or not purchase any one brand of coffee. At any point in time people have options for things to do, places to go and ways to behave or act. (Figure 1.).
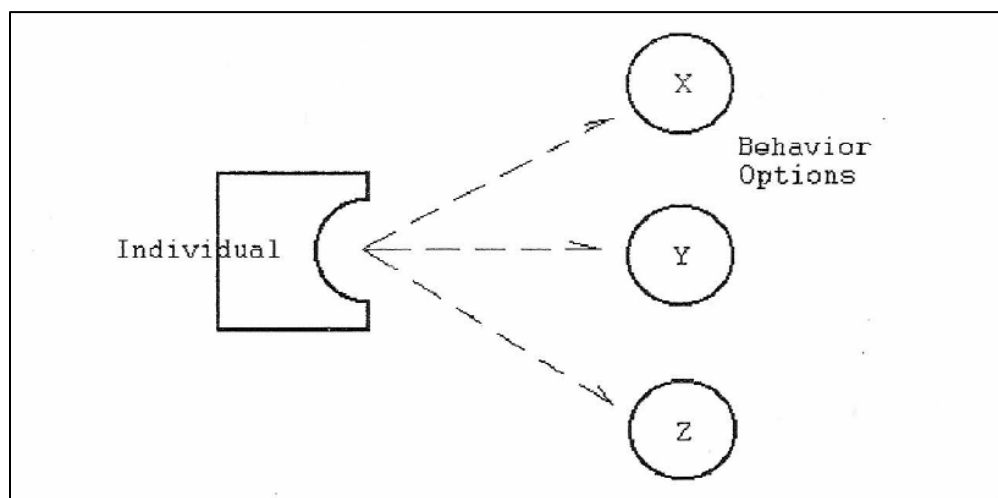
Figure 1: People have options for things to do, places to go and ways to behave or act.

Behaviors are mutually exclusive-

      While a variety of behavior options may be available at any one time, many of these cannot be exercised simultaneously and the individual must choose between them. For example, most of us cannot purchase everything we want; one spouse is all the law allows; it is difficult to effectively concentrate on a job while daydreaming about an upcoming vacation. At the moment people feel the need to act, they scan the options before them and select that which seems most advantageous. (Figure 2.).
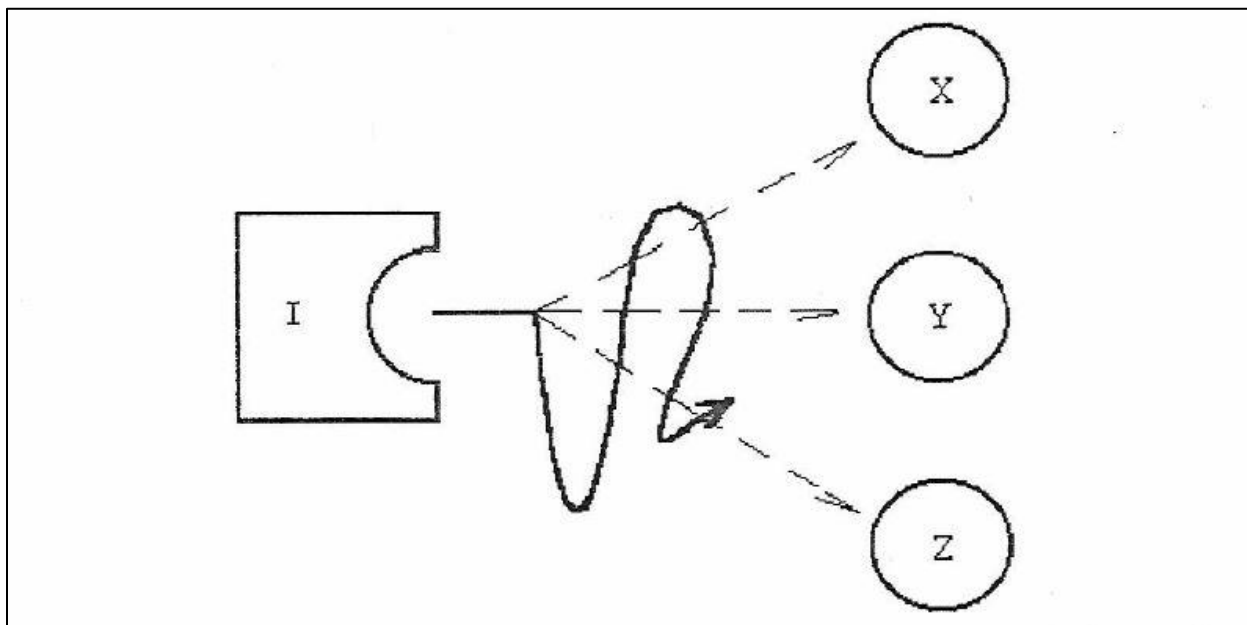

***Figure 2**: At any one point in time, people have a choice of behaviors. Most of these, however, cannot be exercised simultaneously and the person must choose between them.*

People make positive and negative pairings-

      As they scan their behavior options people perceive factors associated, or paired, with each option. Some of these factors appear desirable, others undesirable. Any one option can have both desirable and undesirable attributes simultaneously paired with it. For example, candy tastes good but is also fattening; a certain make car may be comfortable but also expensive; one suitor may be physically attractive but also untrustworthy. Certainly, working for a given employer, living with a chosen mate, or performing any complex behavior would call forth both positive as well as negative feelings. (See Figure 3.)

      Behaviors are, in large, defined by what is paired with them. Bubble gum is meaningless without associations of taste, texture and activity. An idea like friendship is associated with certain behaviors which, when ascribed to a particular individual, define him as a friend. This may include notions of loyalty, commonality of interests, etc. Things paired may become perceived as integral parts of one another.

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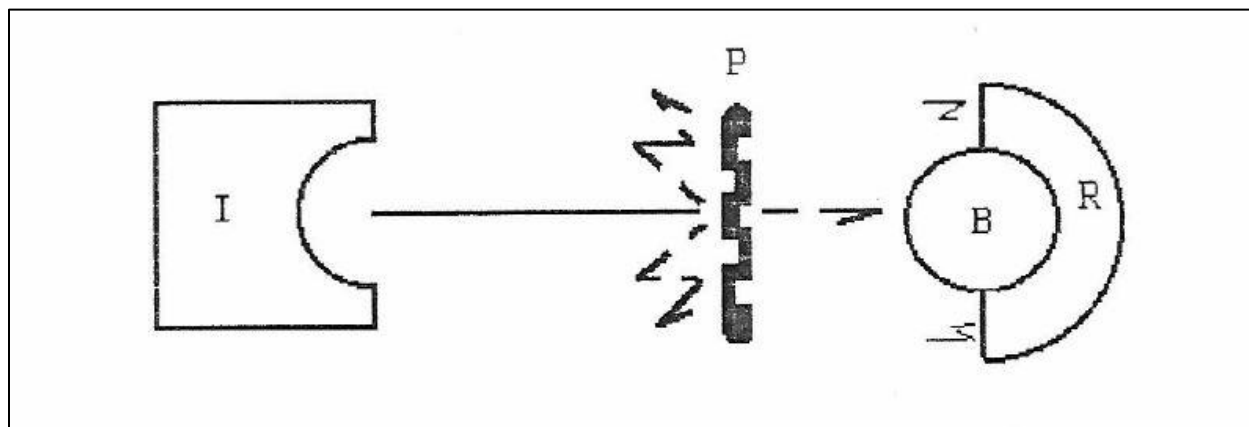
Figure 3: Where "I" is an individual, "B" is any behavior, "P" is punishment and "R" is reward - Any one behavior may have both rewards and punishments simultaneously associated with it.

"Rewards" and "punishments" are core elements in behavior determination -

      Our positive and negative experiences have been given different names over time. Once behaviorism entered the picture the terms "reward" and "punishment" (as most notably presented by B.F. Skinner) have endured credibly, and we thus use those terms here.[9] But the ideas of pleasure and pain or reward and punishment as influential in determining behavior are far from new. Plato reported Socrates said -

> "What a strange thing, my friends that seems to be which men call pleasure! How wonderfully it is related to that which seems to be its opposite, pain, in that they will not both come to a man at the same time, and yet if he pursues the one and captures it he is generally obliged to take the other also, as if the two were joined together in one head."
> [10]

      Positive elements paired with behavior options are termed "rewards." Rewards act like magnets, pulling an individual toward a behavior by making that behavior seem attractive. Similarly, the liabilities or negatives paired with a behavior option have been called "punishments." These act to repel a person from the behavior. Any single event can be rewarding to one person, punishing to a second, or of no consequence to a third. For example, high corporate profits are normally rewarding to stockholders but not to consumer advocates; cumbersome legal procedures may be punishing to litigants but rewarding to attorneys whose fees are determined by billable hours; praise and recognition may be rewarding to many people, but punishing to the bashful, shy or insecure individual.

      Many people assume that others hold values that are the same as their own; that everyone finds the same things rewarding or punishing; that rewards and punishments are absolutes. This is not correct. Nothing is inherently a reward or a punishment. Whether something is rewarding or punishing to an individual is solely defined by the reaction it elicits. If the outcome creates a repulsion (including things like anxiety, escape, and/or retaliation as reactions) then it is punishing. If it elicits no specific response then it is without reward or punishment, generally

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called extinction, indicating the topic is of relatively little consequence. To illustrate the above points, consider the following dialogue variations:

> *Executive to spouse:* "Honey, we had our big meeting with the bankers today and it looks like we'll get the loan to expand overseas."
>> *Spouse #1. (Reward)*: "That's fantastic! Tell me all about it. Who was at the meeting? I'm so proud of you..."
>> *Spouse #2. (Punishment)*: "So what! All you ever talk about is work. I'm sick of it. Frankly, I wish you'd develop other interests, "cause if you don't..."
>> *Spouse #3. (Extinction)*: "Uh huh! Did you take out the garbage?"

Rewards evoke responses of a different type than punishments. Because of this, we will consider rewards and punishments as separate conditions, not simply extremities of the same continuum. [11] The zero end of each continuum is extinction.

Valence depicts reward/punishment power[12] -
       All rewards and punishments are not equally influential, and any one reward or punishment may have strikingly different effects on different individuals. Typically, we may presume that a large sum of money will be more rewarding than a small sum. Similarly, to most people, abusive ridicule will be more punishing than a mild slight. The relative power (and ascribed score) attributed to a reward and/or punishment has been called "valence."[13]
       When a reward and a punishment coexist paired to a single behavior, one may overpower the other causing overall behavior to be dominated by the one with the higher valence. (See Figure 4.)
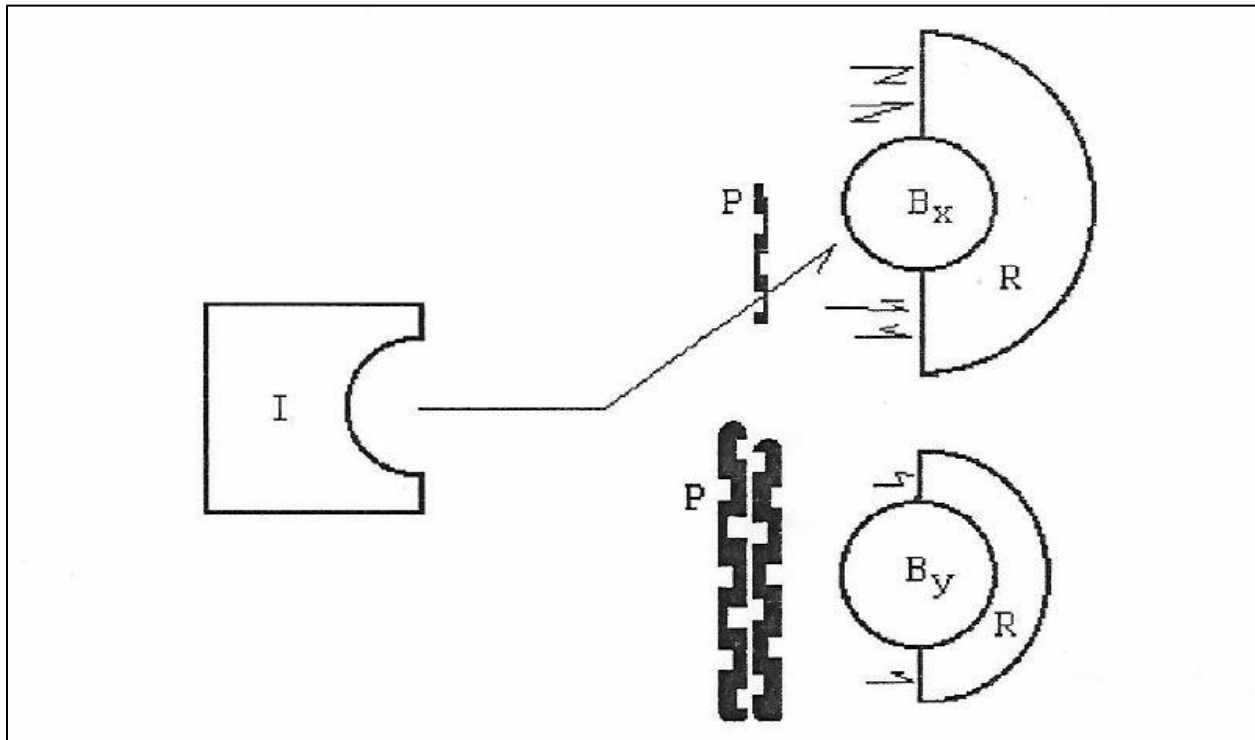
Figure 4: Rewards and/or punishments may overpower one another.

When confronted with behavior decisions, individuals will pursue options which may have several rewards and punishments simultaneously associated with each. (See Figure 5.) Thus, we have each behavior option defined by paired rewards and punishments of varying valences.
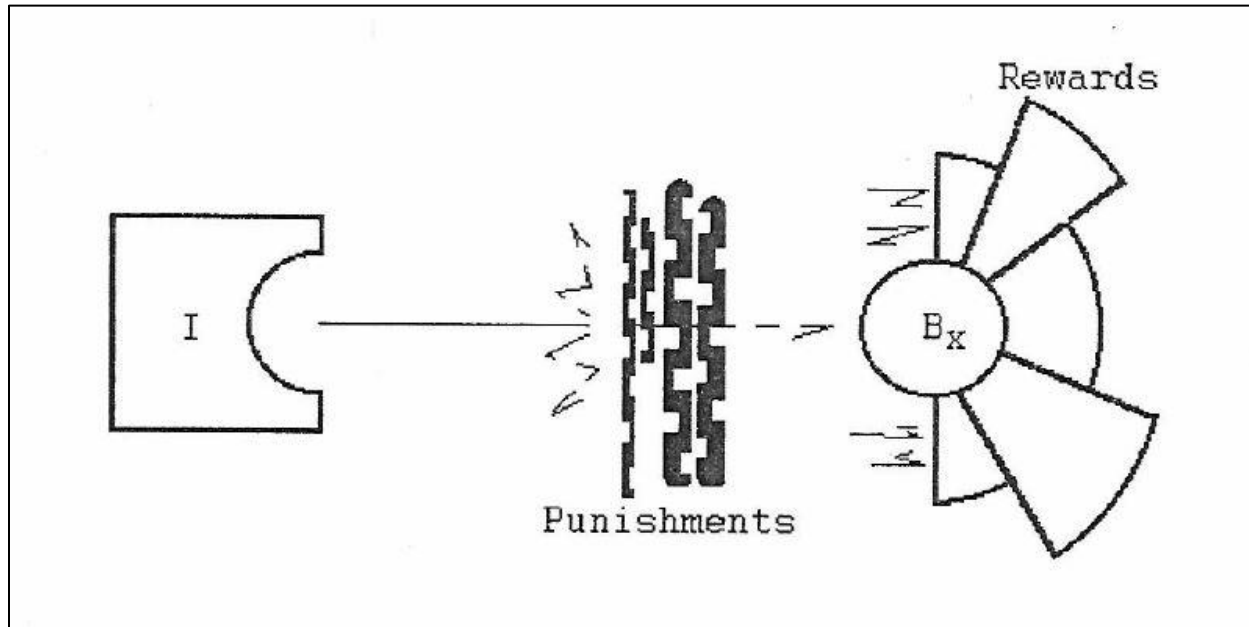
Figure 5*: Any one behavior may have a number of rewards and a variety of punishments simultaneously associated with it. Each of these may have different relative strengths.*

Rewards and punishments are comprised of sub-elements**-**

Research has failed to show a clear cause-effect relationship between rewards/punishments and their host behaviors.[14] There can be several reasons for this finding. One is that there are other factors affecting behavior, and that reward and punishment have not been completely defined. We will accept this as axiomatic and now presume to identify component elements.

Rewards and punishments are comprised of three basic subparts which, in essence, define their influence as a whole. We call these subparts "rank," "contingency" and "saturation." The valence of any given reward and/or punishment will thus be determined by the combination of these factors. For now, the essence of these terms will be introduced as follows:

> **Rank** is the power or influence score of one reward/punishment variable when taken relative to all others. It reflects the potential full valence of the variable. We will symbolize it as "***K***".
>
> **Saturation** is internal to that variable. It's the perceived level of satiation that a ranked variable has under a given set of incidence (time and increment) conditions. We will symbolize saturation as "***S***".
>
> **Contingency** is the perceived probability that a potential reward and/or punishment will, in fact, come to pass. Referred to by "***C***".

Explanations of these three concepts along with their relationships and ample illustrations will be forthcoming.

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In this chapter we've noted points and raised questions which began our reasoning process. Postulates and axioms were considered to expose factors that could apply to the development of a theory of behavior. In the next chapter we will assemble our theory, defining the nature of the elements as well as their relationships to one another.

Chapter IV.
Theory

Theory: A conjecture put forth as a possible explanation for known phenomena or relationships.

We now present our theory - a configuration which defines behavioral systems. Our approach will be to present the concept concisely, touching all necessary bases and illustrating the main points as we progress. We leave to later chapters development of the ramifications and implications of these ideas.

[A.] The Basic Concept

As individuals face the opportunity to act, they scan the behavior options perceived to be available, make note of the rewards and punishments paired with each, assess relative valences, and then select the option that seems most advantageous. (See Figure 6.)
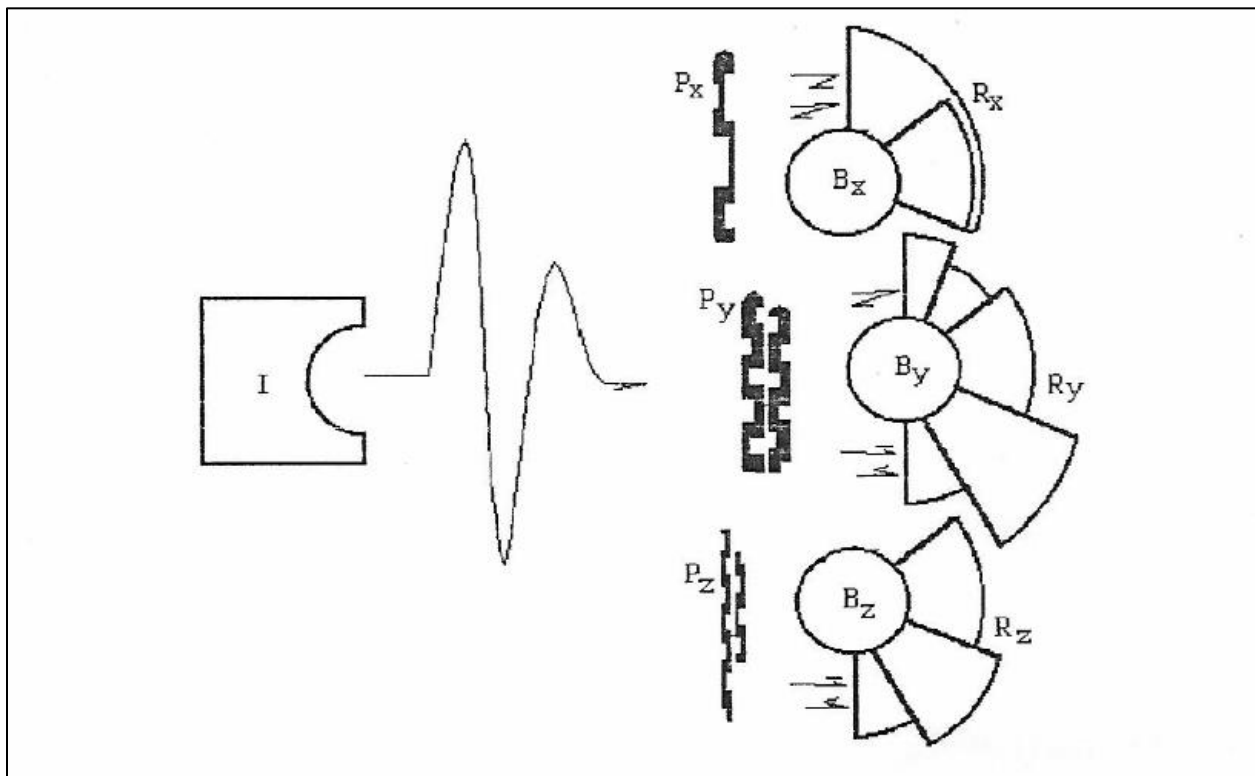
Figure 6: Assessing relative strengths.

It is thus hypothesized that the attraction of any behavior is determined by the sum of the valences of the perceived rewards associated with that behavior, less the sum of the similarly

associated factors perceived as punishing. It will be expressed by the formula **B=R-P**, or behavior equals reward minus punishment. Algebraically for behavior **y** it will take the form:

$$B_y = \left(\sum R_y\right) - \left(\sum P_{y)}\right)$$

This is where **B** represents the overall valence of that behavior, $\sum$**R** is the sum of the valences of the rewards or positive factors associated with that behavior and $\sum$**P** is the sum of punishing or negative factors. All dependent paired **R** and **P** variables are summed. **P** will be combined with **R,** but since **P** is always negative it has the effect of being subtracted. If **P** is greater than **R** (**P>R**), then the **B** will be perceived to be negative or undesirable. Conversely, if **R>P**, the overall effect of **B** will be positive.

If the case is created where the purchase of automobile **y** is mutually exclusive with the purchase of automobile **z**, and one compares the perceptions of these two vehicles, a prospective customer would make a favorable decision for **y** when **B$_y$** is greater than **B$_z$**. Thus, when -

$$B_y > B_z$$

then

$$[(\sum R_y) - (\sum P_y)] > [(\sum R_z) - (\sum P_z)].$$

Now if, in the process of pursuing **y**, this person becomes aware of new car **x**, and the condition was perceived as follows -

$$B_x > B_y > B_z$$

or

$$[(\sum R_x) > (\sum P_x)] > [(\sum R_y) - (\sum P_y)] > [(\sum R_z) - (\sum P_z)]$$

then the person will be said to have "changed his mind," and would now purchase **x**. If **B$_x$=B$_y$** or **B$_x$≈B$_y$** then the person would have a hard time deciding and may be seen going back and forth between showrooms, flipping a coin, or abdicating a final decision to their Ouija board.

[B.] The Sub-Elements

As was noted previously, rewards and punishments are comprised of subparts that define their properties. These sub-elements are named "rank," "saturation" and "contingency."

The valence of any given reward and/or punishment is thus determined by the combination of the valences of the sub-elements. We will first present the formula for this relationship, and then describe its parts.

The relationship is hypothesized as-

$$R_y = \sum[C_y^R(S_y^R \times K_y^R)]$$

and

$$P_y = \sum[C_y^P(S_y^P \times K_y^p)]$$

This is where- **R** is reward,

$\quad\quad$ **P** is punishment,

$\quad\quad$ **y** is a behavior option named **y**,

$\quad\quad$ **R_y** being the reward(s) associated with behavior **y**,

$\quad\quad$ **K** is rank,

$\quad\quad$ **S** is saturation,

$\quad\quad$ **C** is contingency,

$\quad\quad$ C_y^p being the contingency of a punishment associated with behavior *y*.

It is noted that we take contingency (**C**) of the combined saturation (**S**) of the rank (**K**) factors. The following paragraphs further define the roles and properties of rank, contingency and saturation.

[B.1.] Rank (**K**)

$\quad$ Rank depicts the relative strength of rewards and/or punishments to one another. For example, as cited earlier, if a worker is offered two jobs, one providing greater money and the second offering more security, other things being perceived equal, the job that is selected will be determined by what the employee considers more critical - money or security. That is, which she ranks higher, money or security.[15]

$\quad$ The rankings of rewards and punishments will vary among individuals. Diverse social groups and cultures will have even greater list disparities. Cohesive family groups may be expected to have high list homogeneity.

$\quad$ If one compiles a list of all the things a subject finds rewarding and another list of the items she considers punishing and establishes for each a valence, it is anticipated that all items will not be equidistant. Thus, one reward may have a very high valence rank score, and the next in succession a valence substantially lower. Rank is not a sequential numerical listing but depicts the actual power of rewards and punishments relative to one another - it is its scalar value, not sequential position.

$\quad$ Since a rank's valence value attains strength exclusively from relative positioning, scalar sets may be devised. A scale of zero to 100 would seem acceptable for many applications, zero to 1000 if greater accuracy is required or if many variables are being considered. High values would take on compulsive characteristics. Low values would elicit a weak response. Most variables would be grouped mid-range. Bell shaped distributions would be standard. Clusters are anticipated.[16]

$\quad$ In sum, the essence of the concept of rank was captured by D. H. Lawrence who noted -

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"We should ask for no absolutes, or absolute. Once and for all and for ever, let us have done with the ugly imperialism of any absolute. There is no absolute good, there is nothing absolutely right. All things flow and change, and even change is not absolute. The whole is a strange assembly of apparently incongruous parts, slipping past one another."[17]

A behavior variable's valence is its numerical value as determined by its rank score relative to other variables but modified by contingency and saturation.

[B.2.] Contingency (*C*)

Contingency may be viewed as the link that ties rewards and punishments to a purveyor. It is defined as the perceived probability that a potential reward and/or punishment will come to pass. In other words, if a person is offered $500 to do something by an untrustworthy second party, then the valence of that $500 will be discounted by a low contingency.

Contingency, as an expression of probability, is represented in percentage terms. Thus, absolute certainty of receiving a reward or punishment would be 100% and may enter into the formulation as "1.0," a 50% perceived chance is "0.5," etc. Contingency has the ability to decrease but not to increase the full value of a reward or punishment's rank valence.

As contingency is predicated on the purveyor of the reward or punishment, ambiguous communications, confused associations and time delays between a reward or punishment and its paired behavior all serve to diminish contingency score. Rewards promised by reliable people will have a greater impact. A person who makes promises that are not fulfilled will have future presentations discounted by diminished contingencies. The reaction to calling someone a "liar" is normally strong because it attacks a person's contingencies, thereby discounting the valence of all his reward and/or punishment offerings, impairing his future impact potential. Thus, we have "The boy who cried wolf!"

While contingencies are predicated on the purveyors of the reward and/or punishment, and this is often another person, such is not always the case. Disliking a dog that bites is one illustration. But groups, an environment, cultures, places, towns and situations can all serve in this role. The control question is, "Who or what is perceived to be the purveyor?" Contingencies are thus the source of stereotypes and prejudice. The comment, "All foreigners are untrustworthy!" pairs the negative to the group with high contingency and without the benefit of independent judgment. In contrast, "I know an untrustworthy person that is a foreigner." is not, *per se*, a prejudiced statement because it does not presume high contingency between the negative and the full group.[18]

Say, every time that a lady from Muncie, Indiana behaves in manner **x** (B_x) she receives reward **x^1** (thus R_x^1). However, she subsequently moves to Big Rapids, Michigan. In Big Rapids things are different and people do not provide R_x^1 as a result of B_x. The question is, what will be the disappearance rate of R_x^1 from her B_x configuration? Now let's say this lady moves to

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Sioux City, Iowa. There, the people respond to B_x with R_x^2. R_x^2 was never the result of B_x in Muncie or Big Rapids. The question now is, what will be the rate of the inclusion of R_x^2 into her B_x?

The answer to these questions is "the curve of contingency ascent" (or descent, as the case may be). This parallels the learning curve as it is sometimes known. A curve of contingency is the change in perceived probability that as the result of a given behavior, a potential reward and/or punishment will come to pass. We will refer to this curve as the contingency curve (or C-curve). A presentation of this curve appears in Figure 7.
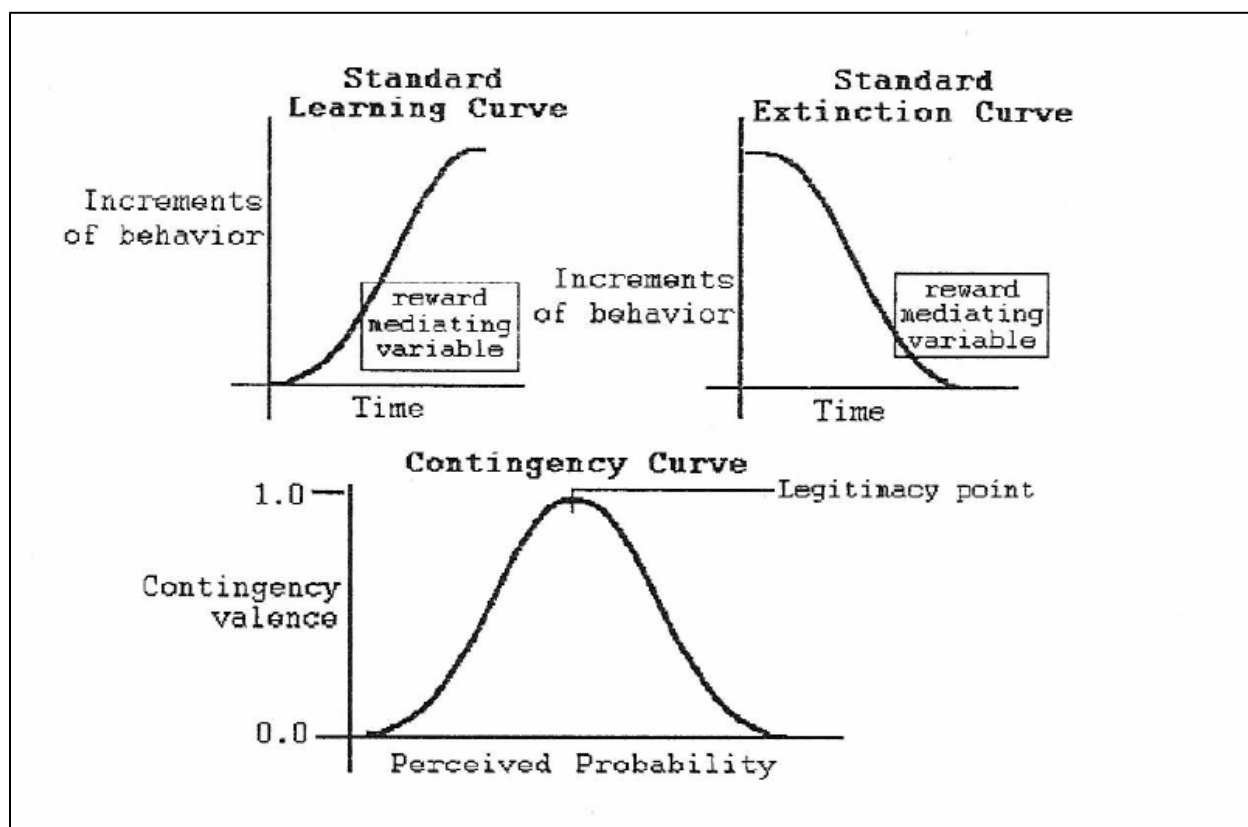
Figure 7: Derivation of Reward Contingency.

Reflecting on the process this curve defines, we note that after something becomes assured its value decreases. Thinking about this, we may liken it to "The Natural" effect (after Bernard Malamud's classic book in the baseball milieu). Contingency appears to lose valence approaching certainty, suggesting that people value challenges, expect a degree of uncertainty, and prefer to expend (legitimate) effort for attainment. We lose interest approaching assurance or overabundance and discount the variable's value. As a result, an optimum contingency score would be a "legitimacy point," which is not necessarily synonymous with perfect (100%) probability. It is anticipated that punishment would be the same curve inverted. Which brings us to "saturation."

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[B.3.] Saturation (S)

[B.3.a.] General Definition

Saturation introduces the notion that a given reward or punishment variable may have degrees of power internal to that variable. For example, one hundred one-dollar bills are normally more rewarding than one such bill. In this case, the reward variable is money, and the greater amount affords greater saturation. But, while you may ask a person if they like money expecting a yes/no response, any correct answer must be scalar. Political polling also experiences a saturation effect - to like a candidate is different than REALLY liking a candidate. Punitive events also provide a saturation factor - a single slight is likely less punishing than a constant put-down.[19] The importance of saturation is often overlooked.

[B.3.b.] Saturation Point

It now may be conceptualized that there is a point, after which continued applications of a reward will have diminished effect. For example, a person may find money rewarding but the attraction of a defined quantity abates after achieving a very high level of wealth. Punishment seems to have a point where it too peaks out, and people daydream, dissociate, go into shock, faint, or escape to psychotic fantasy worlds as punitive sanctions continue.

The point of maximum impact is called the "saturation point," and is the optimum incidence level, *i.e.,* more or less reward/punishment will only serve to decrease its valence. A variable at the saturation point permits full *K* value.

[B.3.c.] Scoring

Saturation is expressed in percentage terms, with 100% (1.00) being the saturation point. Saturation scores, like contingency scores discussed above, can only serve to diminish the rank valence value of a variable. Thus, a reward offered at optimum saturation level will be computed 1.00, allowing for a full rank valence of *K*.

[B.3.d.] Configuration

Because saturation exhibits increasing and decreasing power with added reward/punishment increments, a suggested curve is presented in Figure 8.

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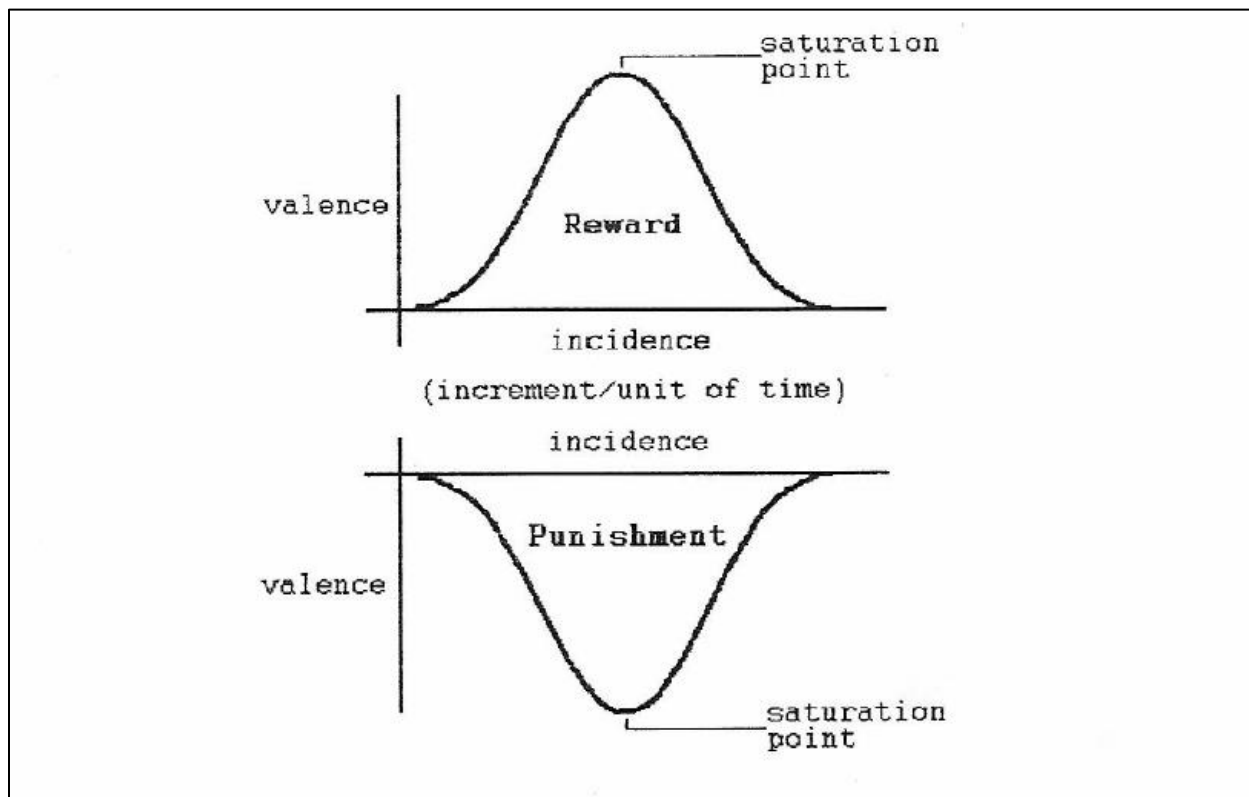
Figure 8: The Saturation Curve - For any individual, the progressive incidence of any event outcome will have varying values, defined by a bell-shaped ("standard") distribution.

Thus, to someone dying of thirst in the desert, a glass of water would have greater valence than a teaspoon of water. If the same person came upon an oasis with a freely flowing fresh clean spring, offering the same glass of water would have diminished effect. The spring gives the person water to saturation and the added glass appears beyond the saturation point apex.

The cyclical influence of the saturation curve can be seen in many areas: The rise and fall of movie stars' popularity, the time a recording stays on top of the charts, changes in fashions, the performance of fads, the limited life span of commercials, and the need to change car models, to name a few.[20] Saturation is the component which accounts for the fact that people "tire" of things. It can be viewed as the rheostat that turns a behavior's valence up or down.

When a reward or punishment is introduced, it enters a person's system as the point on a curve, reflecting the perceptions of that variable. One's valuation of the saturation aspect includes a number of components that come to affect its incidence -

(1) Increment - This is the quantity of the reward or punishment factored by its quality. For example, consider the effects of sincere direct praise versus praise given offhandedly. Or in the above case of the oasis, what would be the effect if the oasis water had signs of camel dung,

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and a clean bottle of water was offered instead. Anticipated quantity is multiplied by perceived quality - optimum quality being 1.00 (100%), less is .9, .8, etc. Thus, we have a variable's increment being comprised of its quantity score, discounted by its quality.

(2) Time - Time is the second aspect of a variable's incidence and serves as a mitigating factor in the curve.[21] Thus, we periodically seem to need such things as sincere praise to uphold our "self-esteem" or "feelings of self-worth." Similarly, obviously $50 every second does not have the same value as $50 every week.

We may summarize the discussion of our theory to this point as follows: When a person is made aware of a new B option, she will internalize its R and P elements in the form of a set of curves with K, C and S components projected to depict this B when compared to other Bs in her cognitive arena. To break down an example into its elements -

> "Sure! It's nice to go out on dates …
> (Primary B and general expression of K level.)
> But I've got to go to school, do homework...
> (Other, mutually exclusive B's with K valence indications.)
> So, if...
> (C statement applying to R_1 and R_2 of primary B.)
> a nice guy...
> (R_1 and its' S level.)
> asks me to a good place…
> (R_2 and S statement.)
> I can date...
> (Estimated outcome of primary B versus B_n.)
> twice...
> (Increment parameter of the S for both R's.)
> a week."
> (Time parameter of the S for both R's.)

[B.3.e.] Scalar Shift

Newspapers in the late 1970's reported "bread protests" in Egypt. Seems that the government had subsidized bread prices to the point that it was practically free. As a result, people found other uses for bread - such as feed for cattle. Decreasing the subsidies triggered the protests.

The repeated presentation of a reward to the saturation point will tend to shift the saturation curve. This could be called "the spoiled child effect." Greater reward incidence will subsequently be required to achieve saturation. Theoretically the same will hold for negative or punishment elements, allowing a person to endure more. Thus, really outrageous acts make less outrageous acts seem more acceptable. (Remember, values are relative).

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This phenomenon accounts for the need for regular salary increases, as well as the difficulties experienced in cutting Medicare benefits or taxing social security income. It also explains that the philosophy "spare the rod and spoil the child" is technically incorrect as spoiling comes from reward super-saturation and not the absence of punishment.

Conversely, someone who virtually never achieves reward saturation would have his curve shift downward (contract), creating a person with low self-esteem, limited expectations and/or poor self-assessment of ability. Essentially, he becomes "satisfied" with less. This is the primary explanation for "underachievement," and can apply to individuals as well as cultural groups.

Let's take a closer look at the S-curve to see how it works in more detail.

As the increment of a variable swells in constant time, the variable approaches incessancy. This is fine if we're talking of an activity like breathing that has special adaptive structures, so we don't have to decide to breathe all the time. But as people are multi-faceted interactive beings, an incessant variable would be too distracting to permit general viable functioning. This idea can be simply illustrated with the phone - we like getting occasional calls, but too many phone calls impose, and a lot too many become an infliction. So, if an increment level per unit of time becomes too high relative to other activities, we must deal with it in a way that discounts it. In the above phone call case, our decision to employ filtration or answering service options to resolve the problem introduces one way this mechanism works.

At this point we have presented the saturation curve as a two dimensional standard distribution (as in Figure 8.). Nevertheless, our incidence axis had two factors - time and increment. We now separate these to present a three-dimensional picture of saturation (see Figure 9.).
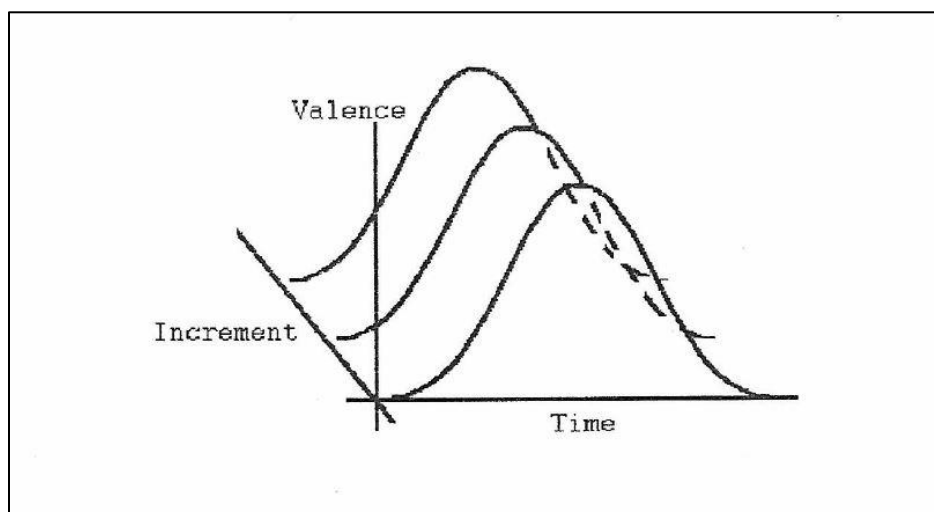
Figure 9: Saturation in Three Dimensions.

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In Figure 9. we depict the same variable (same rank valence) for one unit of time at three different increment distribution levels. However, this is incorrect since it says that for an instant in time, progressive increments would not advance to saturation and implies that time is not progressive. What is needed, therefore, is a three-dimensional curve which has a standard distribution irrespective of the direction viewed. This is presented in Figure 10.
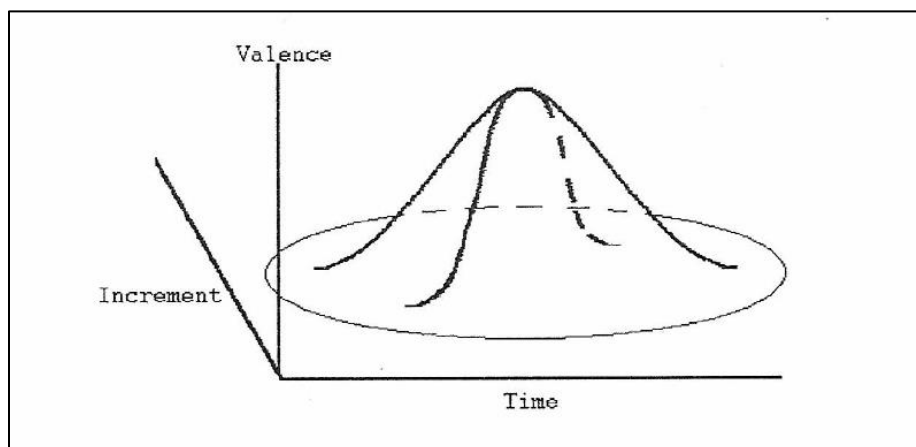
Figure 10: Saturation - Three Dimension standard distribution.

We can now see that for constant time, additional increments would have to shift backward in our figure. This would create a condition like Figure 11. (following), which looks like an elongated igloo
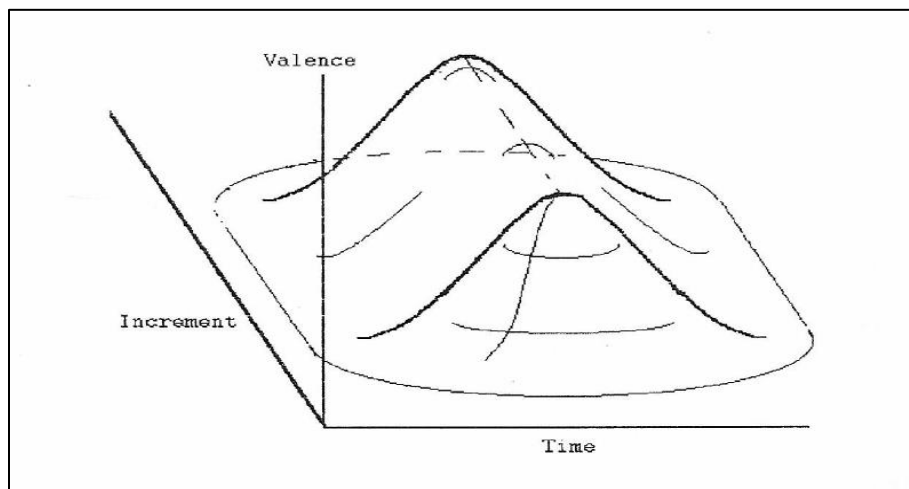
Figure 11: Elongation of three dimensional standard distribution.

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Since the saturation point is synonymous for time and increment, an expansion of increment without like expansion of time would put downward pressure on valence. This happens because an extended increment begins to preclude other (possibly desirable) variables, and thereby becomes an imposition. As sustaining this condition would render an individual relatively less operative in desired areas, we might expect something to give. And in fact, something does give. Consider the possibilities:

One possibility is a devaluation of the variable's valence. Thus, we sometimes find people who worked very hard to become famous, but after becoming very famous, shun the spotlight hiding away on their ranches in Montana. What has happened is that increment stretch (lots of fame in constant time) has caused that person to change his relative valence for the variable "fame."

The second possibility is that the long igloo will split, thereby allowing the person to incur added increments. (Figure 12.) For example, many of our current tech billionaires are now into space exploration, cars, newspapers, etc.[22] But for this situation, the original valence might be relatively very high, inducing the person to adapt to the additional increments (versus, as above, discounting them).
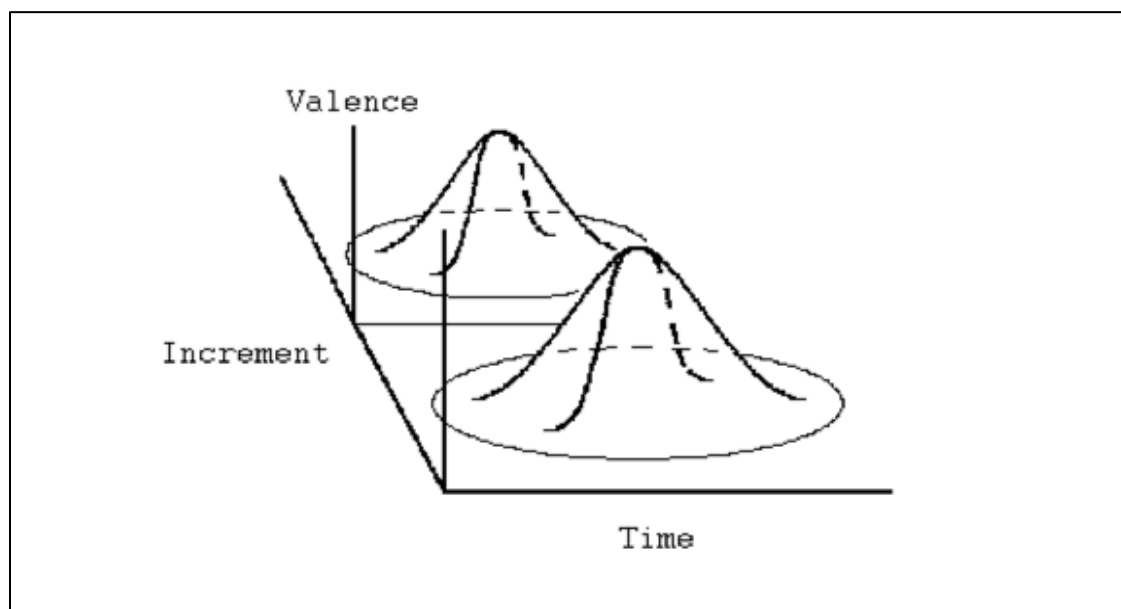
Figure 12: *S-Curve split. Individuals adapt to added S increment by providing additional structures for their accommodation.*

Thus, one person who wants a lot of money may stop working once he is wealthy. Another, however, may take the wealth and form trusts, banking houses and whole organizations just to play with his assets. The course of action that is selected will be determined by the relative scalar span between the wealth *K* cluster and the next lower cluster group. A large

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relative span will cause the individual to attempt accommodation - the S-curve shifts and then splits.

Since split involves the formation of an entirely new curve with its own *S* level affecting *K*, the *B* will be the sum of the prior two, and thus have greater capacity as each of these may now develop individually.[23] We expect scalar shift, to some extent, to be an ongoing process in all individuals, possibly decreasing with chronological maturity or as an organism approaches homeostasis (but probably never achieving it).

Precise curve shapes will vary, depending on the individual and her experiences with the relevant variables. Current survey technique, however, should be adequate to garner acceptable raw data for establishing normative base lines and examining theory projections.


[C.] The Curves

Saturation can be represented by a curve. Contingency can also be represented by a curve. These two curves may not be the same - contingency could conceivably advance more rapidly than saturation or vice versa. However, in actuality they are two aspects of the same thing - for a given *K*, *C* and *S* are relational. Thus, a contracted *S* coexisting with a protracted *C* would be incongruous as *S* shape will be modified by the apprehension of *C*, and *C* by the apprehension of *S*.

To illustrate, a man with a strong goal for a given amount of money (say *K* level) will have a protracted S-curve. This is like that shown in Figure 11. (above). However, if he lives in a country which is going through severe economic upheaval and if no one seems to have money and no money is perceived available, then his *C* would be contracted - there is little perceived probability that he can get the desired amount. But what happens here is that his *C* works with his *S*, dampening its shape, and thus diminishing his desires. Simultaneously his *S* works with his *C* giving him optimism or pessimism. It's like seeing a gorgeous flower, but then finding out it's highly poisonous. If you have small children that tend to put everything in their mouths, then the decision to include that flower in your garden (*B*) would be determined by your overall perception and based on not only the attractiveness of that flower (*R*), but by the perceived probability that your kids will eat it (*C* in *P*) and your understanding of the level of its toxicity (*S* in *P*). Decisions, be they on planting flowers or investing in commodities, are based on the combined perceptions of that seemingly indivisible item. The net effect is a single behavior that reflects a person's perceptual compromise - his definition of that variable. While *C* and *S* curves are not required to be related, disparities would create dysfunction. People with incongruent curves are commonly known for being "unrealistic."

The apparent complexity of our human processes emanates from the calculus of our three sub-elements - the curve of *K* factored by the apprehension of *C* whose value is modified by the imposition of *S*. This might be conceptualized by considering *K* as the value of a landscape element, *S* as that part of the landscape which could be reasonably traversed and *C* as the conditions surrounding access to any point within the attainable range. [24] However, the precise

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relationship of these in any given set of circumstances would need further study. Additionally, we used in our formulas an arithmetic combination of **C**, **S** and **K**. This presumes they have equal relative potential value, and we believe that to be correct. However, this is also a point which must benefit from theory specific research. A depiction of the relationship appears in Figure 13.
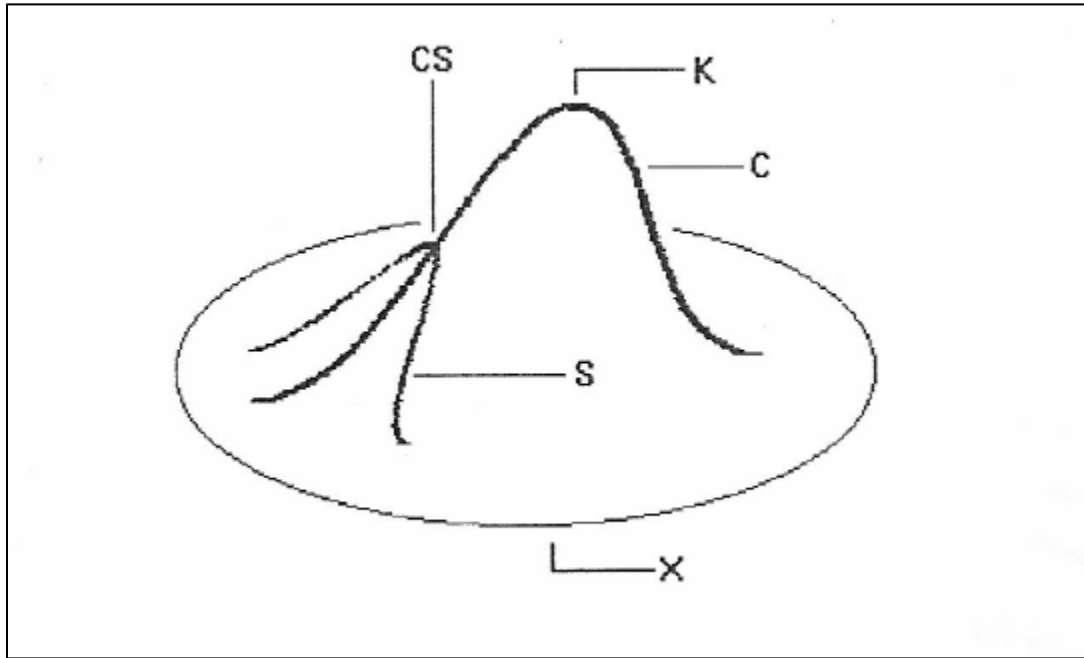
Figure 13: Where X is the environment, K the maximum potential value of a variable, modified by C the probability of attainment, with S superimposed as the satiation range of that element.

[D.] Summary

The Theory describes a process where behavior is determined by data, which may be analyzed within a mathematical model.

$$B_x < B_y > B_z$$

defines a condition of mutually exclusive behaviors of which **B**$_y$ is perceived as the most desirable. It is the one which will occur when **B**$_y$>**B**$_n$, where **B**$_n$ represents all other perceived behavior options.

A behavior is defined as follows -

$$B = R - P$$

For given behavior **x** it would be expressed -

$$B_x = (\Sigma R_x) - (\Sigma P_x)$$

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This was derived from the conditions -

$$R = \sum[C^R(S^R \times K^R)]$$

and

$$P = \sum[C^P(S^P \times K^P)]$$

Thus -

$$B = [C_1^R(S_1^R \times K_1^R) + C_2^R(S_2^R \times K_2^R) + \cdots C_n^R(S_n^R \times K_n^R)] - [C_1^P(S_1^P \times K_1^P) + C_2^P(S_2^P \times K_2^P) + \cdots C_n^P(S_n^p \times K_n^P)].$$

It is hypothesized that this equation represents a comprehensive explanation of behavior. For simplicity's sake, we shall refer to it as "B-Set" (from that set of conditions which define a behavior).

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PART TWO: EVIDENCE

In the preceding sections we developed a theory that claimed to be a definition of behavior. Clearly, such an assertion cannot stand without question. That being understood and recognizing there are many potential paths to be tested, it first needs to be seen if our design can address observable phenomena. We'll tackle that in two chapters: Here (Theorem), we focus on subjects intrinsic to our proposal, before moving in the next chapter (Induction) to examine the demands of tangential disciplines - where behavior serves more as the common denominator.

Chapter V
Theorem

Theorem: A proposition which can be deduced from the premises or assumptions of a system.

[A.] The Behavioral Sciences

This treatise operates in the realm of the behavioral sciences. The "behavioral sciences" generally refer to branches of study (such as psychology, sociology, economics or anthropology) that deal with the consequences of human action and how those actions affect our society.[25]

[A.1.] Issues with the Sciences of Behavior

Nonetheless, questions are regularly raised about whether or not the behavioral sciences are "real" sciences - deserving membership in the academic "science club", along with the likes of physics, chemistry and (usually) biology:

From postings of the National Institute of Health, U.S. National Library of Medicine -
"Behavioral science is generally not considered to be "hard" science like physics, chemistry, or astronomy. Nevertheless, behavioral science is very difficult science. It is difficult because its focus is the behavior of human beings ..." [26]

In Psychology Today, Gregg Henriques PhD stipulated -
"… yes, it is largely a science, but there are important ways that it fails to live up to this description."[27]

On the economics side of things, a pull quote from an article by Noble Laureate Robert Shiller noted -

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"Critics of 'economic sciences' sometimes refer to the development of a 'pseudoscience' of economics, arguing that it uses the trappings of science, like dense mathematics, but only for show."[28]

And Kyburg, in his book *Science and Reason* -
"The best laws in the social sciences give us relatively little … in the way of predictive observational content."[29]

Digging into the background of the criticisms we can identify commonly noted problem areas: infinite variables, terminology not objectively defined, lack of repeat reliability, the weak empirical nature of its hypotheses, and the inability of outcomes to be reliably predicted. We'll look at a sample of these issues next.

[A.2.] Empirical and Objective

One of the more onerous concerns is behavioral science's dependence on concepts that seem to defy quantification. For example, how does one quantify the idea of 'happiness'? B-Set, on the other hand, proposed a mathematical process. Let's see how B-Set might address some of the ambiguous terms. In the following we'll state a concept, and then follow with a B-Set assessment -

Happiness is: For a high K variable, attainment of S-Curve saturation where the C score probability was comparatively low. This could also be "relief" if the prior condition were perceived as punitive. Note similar reactions to what we call "relief" and "happiness".

Satisfaction: A person will be satisfied with something when their position on its saturation curve reaches the saturation point. If significant K variables of a person's behavior repertoire are at saturation they will, overall, be a satisfied person.

Anxiety: This is typically a result of (the perception that there are) imposed, inescapable punitive outcomes - outcomes where Ps substantially dominate the prominent B-Sets. It can also (but less significantly) occur in the case of two high valence, mutually exclusive positive B outcomes.

Fear: Most commonly, uncertainty of the outcome (low contingency) in a situation of high K. Fear can be fear of not doing well in an important situation or fear of suffering negative consequences from any situation. ("Dread" would be a higher contingency C for the negative outcomes P).

Panic: Mutually exclusive high K negative outcomes when no other option is available and there is a constricted time span on the S-Curve.

Despair: Same as panic but an extended (longer) time framework on the S-Curve. That is, a high-end negative - E.g., terrible situation, no end in sight, no alternatives seen.

Self-Destruction: Same as despair but the option of taking or intentionally damaging one's existence has a lower negative valence than all known alternatives. There can also theoretically be an R "correct the hurt" type element (Remember, one man's P can be another man's R's).

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[A.3.] Infinite Data

       The environment we all face is stocked with an infinite array of variables. However, as finite beings we cannot manage infinite variables. This conflict manifests itself in several ways. First and foremost, we make mistakes - we often get things wrong. We take an action based on the information perceived available but either an unforeseen variable intervenes, or the old variables are not as we've defined them. But being wrong can be dangerous so we try to cope, and over the eons our species developed mechanisms to do just that. Many of these mechanisms have names (noted earlier) and are well established concepts: generalization, projection, pairing, compartmentalization, association, rationalization, intellectualization, regression and repression. Essentially, we sort, categorize and compartmentalize the information as we see it. We construct conceptual pyramids to which we attach new information based on apparent commonalities. We balance what is knowable with the need to make decisions in real time. In sum, we endeavor to make quality judgments. How we do this has been the essential difference between us and "Deep Blue" types. (More on computers later).

       People do not deal with infinite variables, and assessments of behavior need not go down that path. All behavior options will have perceived pairings in a personal hierarchy of relevance and probability. In making decisions we only consider variables with relatively high valence. Absolute certainty is not a human, or a functional, characteristic. Determinism, for example, is at best unworkable and at worst invalid.[30] B-Set, recall, operates irrespective of the variables.

[A.4.] Objective and Neutral

       Science should be objective and neutral, devoid of bias. Behavioral sciences are no exception. As will become readily apparent, B-Set applies irrespective of culture, ability, disposition or situation. Race, religion, sex, national origin, proclivities and/or idiosyncrasies are not represented in the process. Capacities and incapacities make no difference. (More on this later.)

       On the other hand, any intervention will always be a factor in assessments and the outcomes[31]: This treatise deals with a difficult subject - the objectification of behavior, where personal values are identified, prioritized and applied to decisions. Whether or not facilitators exercise unbiased techniques (or rather, how much the technique actually is biased) is the greater question.

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[A.5.] Reliability and Predictability

One of our fundamental points is the distinction between the process and the variables. For example, there are infinite reasons why a person would work hard. But there is only one B-Set explanation for it: $B_{work\ hard} > B_n$. And Bs have elements R and P, which in turn have sub-parts C, S and K. And it doesn't matter if an outcome is paired with praise or money, so long as those two B variables have the same sum valence value they will have the same result. This can be tested. And re-tested.

[B.] The Formation and Origin of K's

We've represented the rank factor in our formulations by the letter K. As stated earlier, rank depicts the relative strength of a reward and/or punishment to one another, and is the fundamental value we place on the conditions that our environment proffers. But what are these fundamental values that drive our actions, what determines them and where do they come from?

Some assert that personal survival is our basic need. Others' suggestions include self-esteem and identity, understanding and growth, interpersonal affection, a sense of purpose, wealth and power, and freedom, to name a few.[32] Freud considered libido (sex drive) to be fundamental; Jung, the radical unconscious; Sullivan cited anxiety; Adler, power; Farber, realms of will; McClelland success and achievement; Frankel, will to meaning; Meyers, Argyris, French, Bell, Pfifer, Jones, Dyer, et.al (The Organization Psychologists) participation; And finally Abraham Maslow devised a hierarchy of need categories: physiological - safety - social - ego - self-actualization.[33]

Clearly there is no consensus. And even the fundamental need to survive has given way to a wide assortment of values that are more important to some individuals. Such things as sacrificing for a child, patriotism, honor, political idealism, failure, escape from being ostracized, or demands from a manipulator all have undermined the fundamentality of survival.

While family and cultural groups may have homogenous lists of values, we consider a person's K structure to be unique to that person. Human values, even basic survival, we find cannot be assumed. As anyone's rank values vary, further specifics are outside the scope of this document - the rank of any R or P will differ with the individual. There is no universal "great motivator."

But then, what can be said about the things that drive us? And where does this drive come from?

Most people do have desires, hopes, dreams or the like. Albeit, in varying degrees of strength and commitment. They may be the specific written objectives of a C.E.O., a refugee's quest for a stable home, or a house-bound's vague picture "tucked in the back of his mind," of the way he'd like things to be. These are usually referred to as goals. Similarly, people have perceived needs, ranging from concerns over personal security to the necessity of putting food on

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the table or a roof over their heads. We will accept the definition of a goal as "that toward which effort is directed, aim or end"; and need as "a case or instance in which some necessity or want exists." There are indications that goals define the **R** factors and needs the **P** factors.[34] Both seem to emanate from what we consider to be truisms.[35]

At various times in our lives certain B-Sets seem to be elevated to the status of truism. They are accepted by us as fundamental truths, irrespective of the extant environment. An example of a need truism would be, "If you're careful you'll avoid serious injury." A goal truism might be the scenario, "Work hard and you'll succeed." And citizens were urged to get a shot during coronavirus times - asserting a truism (which some didn't recognize) that the inoculation was an antidote to the disease. Identification of the truisms for any individual or group should be discernable with reasonable survey technique. However, the process of truism formation would benefit from further research, particularly research which considers its causes, manifestations and transformation into goals and needs; how behavioral B-Sets coalesce into systems; whether or not there is two way fluid movement; the role, extent and mechanics of feedback, etc.

Nevertheless, certain aspects of the process currently seem apparent: B-Sets do not work in isolation; truisms are comprised of goal and need dominant B-Sets; goals/needs are comprised of strategy B-Sets; and strategies are comprised of specific behavior B-Sets.

Symbolically it looks as follows -

$$\text{If}$$
$$B_x = (\sum R_x) - (\sum P_x)$$
$$\text{and if}$$
$$\sum R_x = R_x^1 + R_x^2$$
$$\text{and}$$
$$\sum P_x = P_x^1 + P_x^2$$
$$\text{then}$$
$$B_x = (R_x^1 - P_x^1) + (R_x^2 - P_x^2).$$

$$\text{Now if}$$
$$B_y = (R_x^1 - P_x^1)$$
$$\text{and}$$
$$B_z = (R_x^2 - P_x^2)$$
$$\text{then}$$
$$B_x = B_y + B_z.$$

Thus, **B_x** may be (*e.g.*) a strategy incorporating specific behaviors **B_y** and **B_z**. Let's consider this process a bit more with the following examples:

If a person's truism is that happiness is attained by familial success, then we may anticipate goals to achieve that end. If her goal is to provide for her family and if she sees work as a vehicle for this, then work becomes a sub-goal B-Set. If the way to get a job, keep that position and advance are strategized as to act aggressively, then aggressive B-Sets will be

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enhanced in the work environment. The same person, however, may view accommodation as the optimum strategy for intra-familial harmony. As a result, with family members she could discount aggressive B-Sets. This explains why the same **R** or **P** can have different values in different situations; why people can vary their behavior; and why they can respond differently as circumstances dictate.[36] But if a behavioral B-Set has a greater valence than a strategy B-Set, the person will behave in that way irrespective of the situation. Thus, some people behave shyly even though it is not called for and is not to their strategic advantage to do so. Shyness, in effect, has become a truism.

The interrelationship between goals, needs and truisms is a factor in and of itself. Its B-Set is the confidence one has that their actions will accomplish what they want. It manifests itself in tenacity. People with weak strategic B-Sets would have greater tendencies to wander aimlessly through their lives - frequent job changing, never settling down, etc.

However, while the process of truism formation (**R** and **P** structures and their interrelationships) would benefit from further research, particularly research which considers its causes, manifestations and transformation into goals and needs, we think it will be found that these values are learned.

[C.] Three Concepts

At this junction, let's take three common behavioral concepts and see how they respond to the B-Set design. We will consider, in turn, learning, intelligence and creativity.

[C.1.] Learning

Since the dawn of behavioral studies learning occupied a central position, it being said "If we are any kind of machine then we are a learning machine..."[37] Learning is generally considered as the act of acquiring new, or modifying existing, knowledge, skills, behaviors, values, etc. by study, instruction, exposure or experience.

Transposing these thoughts into our terms, learning becomes a condition where the environment interjects reality, causing the acquisition or loss of a B-Set, and/or the internal change of an existing B-Set. [38]

[C.1.a.] Modifications in Existing B-Sets

We will next consider changes within the **R**'s and **P**'s of established B-Sets. The three sub-elements, **K**, **S** and **C**, present the arenas of opportunity. They will be taken in order.

[C.1.a. (1)] *K* Mode Learning

The rank (**K**) position of any given **R** or **P** sub-element of a B-Set system is determined by its relative perceived potential for achieving a goal or satisfying a need.

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Learning can thus take place by realignment in a goal/need system requiring subsequent *K* factor shifts or, more commonly, recognition that a given *R* or *P* does not achieve the goal/need fruition that had been anticipated (either more or less so). Consider the following examples:

A widow, interested in providing security for her later years (goal), decides to invest in real estate (*B*). However, subsequent declines in housing market values make her realize that real estate would not provide the desired security. She liquidates her property shares because their rank in terms of goal fruition has been decreased.

Now take a widower with a similar goal for security and subsequent investment in real estate. This man had not heard of the market fluctuations. However, he did just receive notice of a large inheritance which is more than adequate to cover his future security. Our widower also liquidates his property shares but not because of their potential to satisfy the original goal. He sells because the goal itself has changed causing a *K* loss for the investment.

It should also be noted that *K* learning is at the core of formal education and explains how a ("good") student who receives information in the classroom can internalize it without a "learning curve" progression. If the student's B-Set truism is to do well in school, and if information **x** is presented as being important, then he will accept that as an established *K* of new *R_x* in a *B* subset of the "do well in school" truism. The *C* will be a constant of that instructor's credibility, and *S* will reflect the degree to which that information bit contributes to overall subject mastery.

The valence of an *R*/*P* element is determined by its ability to assist in need/goal accomplishment. A change in the need/goal, or recognition that an *R*/*P* doesn't contribute, necessitates a *K* change for this variable and this, by definition, constitutes learning.

[C.1.a. (2)] *S* Mode Learning

The most visible form of *S* mode learning was described in the previous chapter as scalar shift. Repeated stretching to the saturation point, or conversely saturation point deprivation, causes bloating or shrinkage in the S-curve itself. This would translate into an increased or decreased value distribution for an otherwise constant *R* or *P* variable.

The second *S* mode learning opportunity involves the core idea of increment. If a man kisses his wife passionately each day when he returns from work, abruptly changing that practice to a peck on the cheek will most likely make her question the situation: "Is something wrong? Did he have a bad day? Etc." Our B-Sets have established *S* increment. Deviations alter the *B*'s value and this "teaches us" that something is out of sorts.

Another learning arena in *S* mode deals with *R* and *P* frequency. We learn from the passage of time, relative to the things in our milieu.

A fourth opportunity for learning in the *S* subgroup reflects new information for system optimization. System optimization (if it's a truism) being the control of *S* curve shape. There are many illustrations of this: An athlete increases the exercise routine after hearing of an upcoming competition; a dieter cuts back on carbohydrates on reading about its role in weight loss; a child learns that crying gets more attention.

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[C.1.a. (3)] *C* Mode Learning

A change in the contingency, C, of a B-Set element will constitute learning. Thus, if B_x is understood to include R_x^1, R_x^2, R_x^3 and $P_x^1, P_x^2, P_x^3, P_x^4$, and if upon the execution of B_x, P_x^3 and P_x^4 are not perceived as forthcoming, and if the individual redefines B_x by lowering the contingency values of P_x^3 and P_x^4, then learning has taken place. The subject has "learned" that the probability of a behavior resulting in certain outcomes will, in this case, be less likely. This was the case with our "lady from Muncie" presented earlier. In the above situation of B_x, we may see the contingencies of R_x^3 and P_x^1, outcomes which were forthcoming, to strengthen. If so, the person has "learned" that there is a higher probability that these variables will result from B_x.

If R_x^1, R_x^2 and P_x^2, which also occurred with B_x, experienced no change in value, then no learning took place *vis-a-vis* these three variables. The person may have anticipated their presence to the degree to which they occurred. Learning is change.

We will now move on to the other arenas of learning. However, before doing so we want to emphasize a point from our previous chapter which stated that C change is the essence of learning. We believe this to be true for learning as it is defined in the literature incorporating the "learning curve" (The regular presentation of a reward contingent on a given behavior will increase the perceived probability that as a result of that behavior the reward will be forthcoming). But our definition based on B-Set permits additional opportunities and fractures the prior concept into operational segments. The remaining parts of this learning section present these possibilities.

[C.1.b.] New *R*'s and/or *P*'s

Upon behaving in a prescribed manner, say one previously used, a person may encounter novel R or P reactions. This is especially the case in trans-cultural situations where the same behavior will elicit unexpected responses. For example, politeness is seen as a positive sign of civility in many cultures but is interpreted as weakness in others. This is partially the source of the "culture shock," often experienced by immigrants.[39] It is also the basis for much international conflict and inter-ethnic aggravation. Essentially, the same behavior will have different meanings to different people. This is the kernel of truth in the phrase, "One man's terrorist is another man's freedom fighter," and is also behind pressures to "assimilate."

So, when behaving in a given manner and confronted by a new R or P element, what happens? There are two cases of this configuration: (1) The familiar R or P in a new B-Set. (2) The totally novel R or P. These will be enumerated -

(1) The familiar R or P in a new B-Set will initially adopt the average structure of that R or P in the other B-Sets. Thus, the initial threat to a child of punishment for rudeness will have a similar S and K valence value as the same threat of a previous punishment for engaging in, say, dangerous acts. The main difference will be in the C variable, as the child identifies the seriousness of the parent's intent and the specifics of what constitutes rudeness. This is why it is important for parents to be even-handed and consistent in dealing with their children - vacillation translates to C value loss in subsequent events.

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(2) Totally novel *R* or *P* variables will normally invoke a fluctuating *K* element, contracted S-curve and low *C* value (notably depending on prior experiences with the purveyor).[40] People's reactions will largely be affected by their B-Sets involving the willingness to explore one's environment, to test and try out new things - the propensity to experiment with behaviors that have new constructs, or to search out novelty. The "explorer" orientation, so to speak.[41]

[C.1.c.] Loss or Gain of B-Sets

(1) **Loss of B-Sets -** A *B* can be lost in several ways: Negative sanctions for its execution could be increased to the point where other *B*'s take its place ($B_n > B_x$), or a mutually exclusive *B* of higher valence could be introduced.

The total disappearance of a B-Set, its elimination, complete destruction and removal from a person's resume seems rare. However, theoretically, a *B* could be lost by the disappearance of its subsets. A *B* cannot exist without an *R* or *P*. *R*'s and *P*'s must have *C, S* and *K* elements. In an existing $B = R - P$ configuration, the total removal of all *R* and *P* items would cause the disintegration and disappearance of *B. B*, in essence, would be "unlearned." Forgetting would seem to fall in this category.

Per our design, one cannot obliterate a *B*, *R* or *P* by frontal assault. A punished *B*, for example, will add *P* factors to the existing structure, but will not eliminate the B-Set. The person may not "do" the given *B*, but that *B* is still there, poised to emerge under conditions when the newly paired *P* will have a perceived low *C*. The only way to effectively totally extinguish a *B* is to eliminate all its paired *R*'s and *P*'s. And the only way to eliminate an *R* or *P* is to have its *C* or its *S* register zero. Therefore, while concepts like brainwashing make nice fiction, they are just that - fiction. Forgetting, however, is the normal function of what we are describing - the loss of a *B* by the degeneration of all its *R*'s or *P*'s, all its notable elements.

(2) **Gain of B-Sets** - The percentage of learning that is B-Set gain probably varies over one's life, being prominent in the young and decreasing with age. Presumably "experience" is then the prior acquisition of all B-Sets relevant to a topic, thus requiring no B-Set gain.

Like the new *R* or *P* discussed earlier, new *B* elements are normally met with a fluctuating *K*, contracted *S* and low *C*. Retained B-Sets that endorse novelty are helpful. And once more, the teacher assumes enhanced importance as her credibility (*C*) will influence acceptance of the described process. Of course, the "teacher" can be a proper instructor, friend, parent or any other individual or cultural object. New B-Sets will adopt the described value, factored by the teacher's credibility in *C* form and modified by conflicting environmental variables. In other words -

Teacher: "Pay attention class, this will be on your next test."
  (Teacher attempting to enhance *K*)
Student: "She says that about everything."
  (Teacher's credibility discounted by *C*)
  "I have enough good grades to pass anyway"

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(Impact discounted by *S*)
"And I'm quitting school anyway."
(Conflicting variable)

[C.1.d.] I-Bits

Let us conclude the learning section with a discussion of a thing we'll call an I-Bit. An I-Bit, or information bit, is an informational element not currently attached to a B-Set. Or in John Holland's terms, "non-payoff information."[42]

There is some thinking that I-Bits could not exist. For an I-Bit to be retained it must have some *R* or *P* value and thus be included in a B-Set. However, despite our earlier definition of *R* and *P*, as something that has power to influence behavior, we need to consider the presence of I-Bit (retained) data as that which elicits the extinction type non-response. This, however, remains to be better understood.

Seemingly akin to I-Bit data is the collection by some, of trivial or non-relevant information. This, however, is not the same thing. If a person has a B-Set to learn trivia, then the data collected under its auspices will have value to the trivia learning B-Set. Learning *ad hoc* is many people's pattern for the "ideal student" - one who is reinforced to learn, irrespective of content. (Education will be discussed at length later.) But I-Bit data, we propose, is data that is retained with no apparent value whatsoever. As said, we question if this can exist.

[C.2.] Intelligence[43]

Intelligence is normally defined as the capacity for understanding and aptitude in grasping truths, facts and meaning. However, as noted by geneticist Theodosius Dobzhansky -

"Definitions of intelligence have been numerous, but none has proved satisfactory, except for the quaint one that intelligence is what is measured by the intelligence tests."[44]

The measuring of intelligence has been going on for many years. These I.Q. Tests, however, have suffered from reliability problems, degeneration of validity at continuum extremes, and trans-cultural inapplicability. There is much in the literature on the invalidity of I.Q. test scores. For one example, studies at The Hebrew University of Jerusalem reported significant unreliability even when using standard tests and expert administrators. In cases, the variance in scores was so great that it was "...enough to classify [not my choice of words] a normal [sic] child as retarded [sic]."[45]

In considering intelligence *vis-a-vis* The Theory of Behavior, we may now redefine intelligence as including the following three factors:
- The number of B-Sets operatively retained.
- The complexity of a B-Set which can be correctly processed. (This is the number of *R* and *P* items within a B-Set that can be effectively evaluated).
- The speed at which a given number of standard B-Sets can be processed.

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These would give measures of capacity, complexity and rapidity. They could be reported in absolute terms, without degeneration at extremes, irrespective of the cultural environment and independent of any particular set of questions. Normative data could be established and compared universally. Thus, for a more genuine measure of intelligence, it wouldn't matter what individual B-Sets were retained; but rather their number, their structure, and what could be done with them.

[C.3.] Creativity

Creativity is considered to be the ability to evolve from one's own thought or imagination, or to create by investing with new function or character. It has resisted measurement and is often seen as the mystical, artistic aspect of human nature whose processes are not understood. This, however, need not be the case.

We will now presume to redefine creativity. B-Set implies that creativity is a reversal of the standard search process. Normally in B-Set we say, "If a person behaves in manner **x** (*i.e.*, B_x), what R's and/or P's will be forthcoming?" Creativity, however, works as follows: Given R_x of value **a** (R_x^a), what B will produce R_x where $R_x^a > P_x^a$. Here, the subject is doing a search of all known B's for those which contain and could result in the desired R_x.

Thus, if an artist wants to produce a picture of movement, her creative question will be, "Of the techniques I know (B_n), which of these produce the appearance of movement (R_x)?" She will then search, experiment, reflect on and/or piece together whatever she gets her hands on. Upon the surfacing of a B_x she will then ask, "Are the P_x's paired to this B_x greater in value than the R_x (R_x^a) which I am considering?" So the artist who concludes that making an image fuzzy denotes movement, may reject that option if fuzziness detracts from the definition or clarity that is being sought ($R_x < P_x$).

Weak P_x individuals (those whose subordinate C's unrealistically discount P_x) would have tendencies to come up with many Rube Goldberg type ideas. The "greenlighting" process takes advantage of this manipulation, seeking to forestall P_x considerations in an effort to expose large quantities of B_n's. Nevertheless, the normal creative process involves four steps -

- What is it we want (R_x).
- What are the possibilities (B_n).
- What are the drawbacks (P_x).
- What is the best alternative (B_x).

Creativity can now be measured and anticipated: Given R_x, how many B_x's can be produced which incorporate R_x; and creative quality can be identified by noting how many of these contain constructs where $R_x > P_x$, presuming some sort of "expert" criteria could be established.

We can now see the potential for linkage between intelligence and creativity. The number of B-Sets operatively retained and the facility for manipulating these constructs (*i.e.*, intelligence) will increase the probability of finding an acceptable B_x. Also, the complexity of

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one's B-Sets (also intelligence) may incorporate added factors that will emerge in a search. It becomes apparent at this stage that creativity and intelligence are related though not synonymous - a finding that conforms to much research on this topic.

Creativity is not a magical process. All creative data must come from within a person's existing cognitive pool. Of course this does not preclude doing research, experimentation, exploration, or the ability to collect and attach I-Bit type data.

A person's creative B-Sets may be called into action when other established *B*'s fail to provide a solution to the situation at hand. Of course, a person could also just give up. The valence required to activate a creative search would seem to hinge on the relative valence of the variable for which a creative solution is sought, as well as that person's propensity (prior successes) with creative *B* solutions.

[D.] Physiology

Our chapter on axioms began by stating that "People are physical beings …", and we now want to focus on the importance of physiology in determining behaviors.

Essentially, we are only talking about physiology. If we accept our axiom, then the system we have described is physical, and we cannot separate out the (e.g.) psychological. What we're suggesting is that it's not "out there." It is "in here!" This may be for many a new way of conceptualizing behavior. But be they neurons, synapses, electric impulse potential or whatever, new information must cause actual physical changes to be retained. And therefore what we describe is, per se, an environmental factor intervening in a physical system that affects behaviors. The injection of these factors come from several directions:

[D.1.] Inherent Factors

Complex organisms are conceived of many physical structures that have behavioral requirements built in - energy replacement (eating) demands attention. Other functions are automated - breathing, digestion, etc. Arguments in favor of a role for instinct based behaviors often focus on things like competitive survival and reproductive activities. And for lower order animals we find references to nest building, mating performances and the like.

Certainly, there are genetic common denominators. Groups generally behave in a distribution around norms. Different groups have different norms. Groups' norms also form a distribution around common parameters which, in turn, permit us to relate inter-group. Our conformity to these norms is variable and flexible, to a degree - we need to eat, but do not need to eat in overabundance. To a large extent, we have free will. In the realm of variables, this treatise operates mostly in that free will range.

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But what about process attributes? On this point, to not have the ability to assess information would be to fail to be able to discriminate between good and bad, desirable and not, too much or too little, food and predator, safety and danger, comfort and pain, etc. Its absence would cause an inability to judge, resulting in instant damage or destruction. We offer the proposal that B-Set, the $B = R - P$ configuration with C, S and K sub-elements, is fundamental, and inherited with the prescribed relationships and functions intact. B-Set is the program by which we analyze data. Each human (and animal and probably each living organism) has, at inception, and must have had in prehistory, B-Set.[46]

[D.2.] Deviations

Our physical systems conform to species norms that allow generalizations in many disciplines, such as medicine, where treatments have anticipated outcomes in a statistically significant majority of situations. Nevertheless, it has become apparent that no two individuals are exactly the same and all families of organisms harbor deviations; And seemingly all individuals as well - because of environmental exposure.[47]

Historically, as some of these deviations proved advantageous, individuals with those traits had a greater probability of reproduction, and cohesive indigenous cultures, over time, adapted in ways that enhanced (or repressed) selected attributes.[48] Here the question is, do these attributes impact on the B-Set process, and if so, how?

Hormonal endowments, for example, could make aggression a more likely response. In this case, the K in aggressive response B would have a higher than median valence. And this might impair an accurate evaluation of C (i.e., what is the probability that aggression will achieve the desired result?[49]). It may also affect S as saturation controls the extent and frequency of an aggressive response.

Similarly, intellectual attributes can be affected by inherent deviations in the speed and efficiency of neural transmissions. Here, if the case is intelligence, the B would more likely take an intellectual course as this organism would be more likely to think through a problem requiring (e.g.) aggression. Or respond aggressively intellectually, as opposed to physically. C and S would endure the same environment as above, making it more likely to be applied.

An organism born with the ability to move fast would similarly have the propensity to do so, as opposed to one that was not born with a speed advantage. This does not mean that the fast individual would automatically use that asset, it's just that there is a greater probability that its speed will provide the desired outcome. B-Set, we suggest, is a given.

We all come to our B-Set environment with a different collection of skills and abilities. These attributes have impact on our behavior options and our perception of whether that option will achieve the desired result (R). In turn, they then influence our choices and decisions. But the process we use remains the same. People make decisions based on what they believe to be true. If that truth conforms to a reality, then the probability of the outcome having the desired result will be increased. If not, then it won't. The baggage one brings to the table does not affect the process, *per se*.

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[D.3.] Interventions

We now approach questions surrounding the applicability of B-Set in situations that are considered aberrant: We suffer damage, disability and degeneration. We benefit from rehabilitation, revitalization, resuscitation and reinvigoration. We are affected by strokes, dementia, shock and trauma. Birth defects place limits. Drugs alter perceptions.

When an interaction must be processed through a physical system, it follows that damage to that system would shape whatever transpires. We can only play the hand we are dealt with.

If I am hallucinating on drugs and think I am a bird that can fly, then I may try to fly. If I think I am strong and pick a fight based on that assumption, I will lose if my assessment was incorrect, and the opponent was stronger. If I had a stroke and cannot speak then that is who I am. I may want to speak and therefore undergo therapy, but the decision for therapy involves my ability to weigh the advantages of speaking vs the factors perceived involving the therapy, including any understanding of the probability of success. If due to birth defect my capacity is that of a person age six, then that is the capacity I will use to process data. If trauma causes me to believe that seeing causes overwhelming pain, then I will stop seeing if the perceived disadvantages outweigh the advantages. And, in turn, my physiology may respond by the atrophy of neural components un-used in that function.

All organisms, irrespective of their configuration, operate with B-Set. They may be either oblivious to the involved sub-factors, or acutely aware of them. They may have complete understanding or vague feelings. Of that it makes no difference. The computation remains the same. If someone wants to "prove" that this Theory is wrong and thereby takes action that is clearly not in their best interests, then "proving the theory wrong" will be more important to the individual than whatever it is he or she "gives up" in the exchange. The B-Set process is a given in behavior determination.

[D.4.] An Afterthought - Nature vs Nurture

We want to conclude this section by weighing in on the nature/nurture debate. As physical beings, external data must be registered internally and physically. Negative information has a different physical effect on us than positive information. We are conceived with propensities that are either encouraged or discouraged by environmental input. Sometimes these propensities manifest themselves with high relative valence, and sometimes not. That valence being determined by the reinforcement of our given physiology. Essentially, as we interact in our environment, nature and nurture become two sides of the same coin. We are nature. We breathe in oxygen and emit carbon dioxide. And we can destroy a rain forest just as well as any "natural" blight on the land.[50]

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[E.] Disorders

The Theory of Behavior does not isolate an element to account for behavioral disorders. Furthermore, it has been hypothesized that the B-Set configuration applies to all behaviors, normal as well as aberrant. If this is true, then behavioral disorders must be defined as the simple case where society disagrees with a person's conclusion that (*e.g.*) $B_x > B_y$. We can identify four potential causes of this condition.

[E.1.] Informational Disorders

This is the case in which a person may have an unusually high R or P, deriving from inaccurate prior information or abnormal experiences. Such cases may cause phobic or obsessive reactions, and in extremes could render a person inoperative when (*e.g.*) $B_{do\ nothing} > B_n$ because all B_n's contain an inordinately high perceived P.

Disorders of the informational category would normally be the easiest to correct. If a change agent is respected (high C), and if she presents information that corrects the misconception; and if the condition is created where $B_{new} > B_{old}$; then the patient will be cured. Most "quick fix" experiences occur in this informational arena. Unfortunately, however, there are other categories that are not so easy to influence.

[E.2.] Situational Disorders

Here a person is in the situation where $B_x \approx B_y$ and no alternative behavior option is perceived to be available. Like the teenager caught between awakening sexual desires and religious taboos and turning to violence in rebellion at the pressures that entrap her.

In these cases, the person is accurately assessing the environment but fails to find a solution to its impositions. Thus, $B_x \approx B_y$ and (abnormal behavior) $B_w > B_x, B_y$ or B_n.

[E.3.] Physiological Disorders

While we retain the hypothesis that behavior cannot exist outside B-Set format, it must be recognized that physical damage has the potential to inflict behavioral distortions. Inability to respond, overactive mechanisms or neurological interference with data processing may have physiological bases. However, we hypothesize that B-Set is a given and maintain that any influences must work within the structure. The role of drugs may be the easiest vehicle to illustrate these points.

It is noted that science has developed the ability to tweak our chemistry. Clearly drugs can have an effect. For example, a drug could contract time perceptions within S factors, making B's execute more rapidly - as in stimulants. Similarly, general behavior modifier drugs may limit saturation point value maximums so if the person has a preponderance of P factors, these would

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be affected more than the *R* factors and the despondent subject would experience a state of well-being (actually better-being). Nevertheless, it is maintained that while component features may be affected, in no case will behavior exist outside B-Set. A person who's hallucinating may perceive that he's an Apostle and preach to all he meets. While his information is wrong (see "Informational Disorders," above), his conclusion (B-Set analysis) is correct: if I am an Apostle, I should be able to preach. Drugs seem to have some capacity to be valence specific and structure specific. That is, they may damper all high *K*'s (making people apathetic) or enhance low *C*'s (making users unrealistic). Drugs do not, however, appear to be B-Set specific. They cannot have someone expend an enhanced effort at work but relax at home.

[E.4.] Process Disorders

It is not believed that process disorders can exist. A process disorder would invoke a condition antithetical to B-Set, such as *B=R+P*. People are incapable of doing this. We do things that our value structure deems most desirable. If we do something to hurt, it is because our value structure is that. Same with help. There are no other options. A quandary surrounding this is brought out by the rhetorical question: "Is it actually self-interest when we sacrifice to help others?" I.e. No true altruism? Per B-Set, the answer is "yes." More on altruism later.

We can envision conditions which appear to be of a process disorder type. For example, a person may engage an abnormally high or low number of B-Sets in a given period. Hyperactivity is a case that comes to mind here. While possibly due to conditions in the informational or situational categories, there is also the probability that the physiological mechanism has been affected. However, we retain B-Set as a given and reject any possibility of altered formulations.

It has long been the practice to place behavioral disorders into symptomatic boxes. But The Theory of Behavior allows innumerable ways to generate any one symptom. In fact, it suggests that no two symptoms will ever be exactly alike. B-Set can provide insight, but the constructions presented in this section need to be researched and better understood.

[E.5.] Societal Disorders

There needs to be mention of the possibility of societal disorders - where society's assessment of a situation is wrong (and an opposing individual's assessment would be presumably correct). This flies in the face of our earlier noted definition of disorder ("…where society disagrees with a person's conclusion…"). Our histories show cultures and nations, over time, collapsing from a myriad of reasons. The society as a whole (or a majority, or a leader) incorrectly assessed reality.[51] Societies (groups) are not always right.

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[F.] Group Behaviors

[F.1.] Cultural Distinctions

The Theory of Behavior does not have a separate design for cultural differences though clearly there are significant societal variations in the valences of B-Set constructs. For a glaring example the practices of infanticide and femicide, while incomprehensible, are certainly practiced and in cases allowed, sanctioned or even required in some cultures. The culinary variations between nations dramatically demonstrate distinctions. Communities have all kinds of governmental configurations, from tribal leadership, to theocracies, oligarchies to monarchies to democracies of various shapes and manner of participation.

People learn what is desirable (R) and undesirable (P), and if the teacher is an environment that consists of family, friends, community leaders, media, etc., then it follows that the more contact people have with each other intra-group, the more they will tend to share the same opinions and values. We anticipate that in work groups, engineers hold many shared values, which differ from those of blue collar workers, accountants, or other groups. The same applies to nationalities.

Culture seems primarily manifested in K list homogeneity, though some impact on contingency formation and S-curve shape is likely. Simply stated, certain groups which share geographic proximity, origin, a belief system or experiences have a greater probability of being reinforced by the same things. Groups seen as being pushy may have a genetically/environmentally produced skew in S curves. As a result, we do not find that the concept of culture requires obtuse qualifiers to be consistent with Theory of Behavior tenets. This suggests that B-Set is transcultural, and thereby, probably panhuman.

[F.2.] Conflict

The constructs for conflict are well known: The first case is where $B_x \approx B_y$, described in the fable of the mule who starved between two bales of hay trying to decide from which to eat. It's called "approach/approach". The second is where $-B_x \approx -B_y$, illustrated by the man perched on the edge of a cliff being stalked by a streak of ferocious tigers. This is avoidance/avoidance. Third is the occurrence within a single behavior option when $B_x = R_x - P_x$, $R_x \approx P_x$ and B_x has a greater value than any other behavior option (while $B_x = 0$, other options must appear negative). For example, during economic recession when no jobs are available, someone may need the money provided by an employer but hates the work itself and its environment. The alternative, though, is not to have work at all. And then there are various combinations on this theme. However, in each of the preceding cases there is no B_z (other option) perceived available with a greater positive valence (or less negative).

Inter-group conflict has the same structure as intra-group conflict as does internal conflict. Nations, political parties, etc. are fully capable of being (collectively) just as neurotic or psychotic as any individual.

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[F.3.] Scapegoating

One other concept deserving of mention incorporates practices of dissing, put downs, bullying, doxing, canceling, etc., and on a larger vein the whole range of subjects surrounding attacks on others. Part of this subject was covered in the section on "conflict." But a further question this raises is how do we evaluate our self-worth (i.e., the general contingency range of all our B-Sets)? Many define their self-worth in relation to others - "Am I more popular than…" "…richer than…" "…more powerful than…" "we're #1!" … Etc. If we value our self-worth vis-a-vis others, then the options to "win" include efforts to (1) improve oneself, or (2) diminish others. Many find the latter option easier than the first. It had been said "It's not whether you win or lose, but how you play the game"[52], though many seem to now conclude "it's not how you play the game so long as you win."

[F.4.] Communication

The R and P structures of societies are established by the exchange of information between members, i.e. communication. As previously stated, communication manifests itself in contingency. Contingency is important because it allows us to plot our course by knowing something will happen with degrees of certainty. The more these communications reflect reality the more accurate the information and thus the greater the probability that B's are successful, and thus the more effective the society. Effectiveness for groups being similar to goal/need accomplishment for individuals, as discussed previously. Relevant participants that determine communication effectiveness include the source (or originator), the recipient and the transmitter (sometimes acting as gatekeeper).

The communications process is overseen by C, the perceived probability that the content that is presented is what it purports to be. If there is general distrust of the information purveyor, whatever is being offered is thereby discounted. This is what gives "fake news" its sting - the quip attacks those transmitting the message and thereby discounts whatever information they present. The purveyors of information have always influenced the information they carry. But to be effective one must evaluate the sources and be a critical consumer of information. Failure to do so renders one less successful.

It follows that the loss of communication serves to damage the society; loss of communication includes the loss of credibility. So if, for example, a foreign nation wanted to damage a country, attacks on its communication structure would go a long way.

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[F.5.] Overview

In their book on paleoanthropology, *Lucy's Child*, authors Johanson and Shreeve theorize about factors influencing the emergence of Homo-Sapiens -
> "What...defined the human niche was not hunting, nor scavenging, not digging sticks or any tool *per se*, but the apprehension of possibility in an unpromising landscape. An animal on the make."[53]

And Aldous Huxley -
> "We live together, we act on, and react to, one another; but always and in all circumstances we are by ourselves."[54]

Groups are comprised of individuals. Individual analysis, with the inclusion of interpersonal B-Sets, will define the group. These interpersonal B-Sets are often overlooked. There cannot be (by our axioms) situations where a result is greater than the sum of its parts. There are no extra-natural causes of behavior.

[G.] Behavior Change

People are constantly attempting to influence others and to change the way they behave. Some common techniques include coaching, counseling, directing, instructing, lobbying, selling, advertising, pressuring, persuading, suggesting, paying wage incentives, bribing, coercing, coaxing, editorializing, teaching and criticizing, to name a few. But what causes change and what makes some efforts successful and others not?

[G.1.] Introductory Comments on Change

It was suggested that a person will behave in manner x if $B_x > B_n$. That is, if behavior x has a greater valence than all other behavior options (n) of which the person is aware and that is perceived as being available at the time she recognizes that it is to her advantage to act. (Of course, she may choose not to act at all, but then not acting is also a behavior option.) Nevertheless, presuming this person does choose to pursue action x, what would make them change their mind and drop x, opting instead for a different behavior, say behavior y?

Essentially, behavior changes occur when the condition $B_x > B_y$ becomes $B_x < B_y$. Another alternative is the introduction of new option B_z but change only occurs here when $B_z > B_x$ and $B_z > B_y$.

To explain change among existing known options one must look toward the elements that underlie each behavior. Thus, there must be antecedent changes in subordinate R's and P's sufficient to tip the balance. Possibilities include increasing the R and/or decreasing the P valences of the desired behavior; and/or decreasing the R and/or increasing the P valences of an

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undesired behavior. A third type of treatment would be adding new *R*'s and *P*'s to existing items. *R*'s and *P*'s may be adjusted in mode *C*, *K* or *S*. These will be considered in turn.

[G.2.] The Elements of Change

[G.2.a.] Contingency Based Change

We defined contingency as the perceived probability that as a result of a select behavior certain outcomes will come to pass. Contingencies, which are linked to an individual or object can be modified in a variety of ways:

Most successful would be the repeated fruition of promises, and contingency is why we place value on reliability. Warranties and guarantees reflect attempts to impact a product's contingencies. Another way to improve contingency, while keeping the same message or product, would be to change purveyors to those with an established reputation for (or perception of) credibility. This was why Lee Iacocca in the 1980's was able to effectively promote and rescue Chrysler. He came across as credible. On the other hand, one could not imagine a convicted Wall Street swindler having success in a similar role. Though many swindles themselves happen precisely because of misread perceptions of credibility (*C*).

Other factors influence contingency as well. Language clarity and specificity are big. For example, compare attempts to motivate students by assuring "Hard work is its own reward," as opposed to "if you don't pass you're grounded"; or on the positive side, "A's and B's you get a car." Of course, the purveyor must have enough credibility (*C*) so the subject is confident that if they get A's and B's they will get the car.

Timeliness is also a large factor as immediate results have substantially greater contingency impact than future promises. This is a significant component in the difficulty convincing many about the dangers of climate change. Here, we are trying to have people change their lifestyle today (take public transportation, turn down the heat, buy only sustainably, etc.) for something that will happen in the future (the seas will rise in 50 years flooding coastal areas causing mass relocations as many species die-out causing widespread famine, etc.). A contingency that is set in the future allows people to doubt the outcome. Doubting an outcome (*C*) is particularly appealing if resolution involves sacrifices (*P*'s).

[G.2.b.] Rank Based Change

Recall that rank reflects our fundamental values - depicting the relative strength of rewards and/or punishments to one another. Therefore, attempts to change rankings attack people's basic value structure. While such changes are most durable, they are also most difficult to affect. In advertising, stating what one should do, feel or believe is an effort to alter rankings. Thus, "Buy America" slogans aim to convince audiences that national identity is more important than any one quality inherent to a single product. Efforts to move people towards a "work ethic" from a "me/now/fun" ethic would similarly require rank change.

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The idea of a "light beer" with its "less filling" properties attacked the way people perceived beer, per se. "Lightness" was an altered "gusto" (i.e., macho) variable without established rank. In such cases one can expect apprehension on the part of consuming populations as they sort out (test, try, read about, discuss with friends, etc.) the altered form. And this also explains why a known sports figure (macho) would be effective promoting change to the erstwhile "gusto" consuming population.

The driverless car trend will endure this shakeout process. As did the first cars. And electric cars. But a greater apparent advantage (*R*) balances a more likely risk (*C*) thereby augmenting the value of *B*. The advent of electric cars was aided by their introduction as a high-end product. Things identified as luxuries or expensive are often seen as more desirable (*R*), whether or not they actually are. The practice of record remixing, if it's an improved recording, can enjoy rank-based change.[55] But for the reintroduction of an old product, its impact remains restricted to saturation mode (*S*) constraints (discussed below).

The conditions noted also apply to people: changes in employee work rules, new management styles or new managers themselves, new family members as they "fit in", and new neighbors. It also affects the acceptance of immigrants. And xenophobia.

[G.2.c.] Saturation Based Change

In this day and age, change is typically attempted in saturation mode: lower price, improved characteristics, more convenience, etc. While saturation change is easiest to implement, it is also least durable because altered increments are rapidly assimilated into the perception of the product. Furthermore, as time is a factor in saturation mode, the impact of a constant increment level will have a deteriorating value trend. Therefore, to sustain behavior by saturation adjustments, one must repeatedly introduce new sanctions. Thus, we've seen "Tide," "New Tide," "New Improved Tide," "New Improved Tide with Extra Whiteners," etc.[56]

Products with low intrinsic rank variance *vis-a-vis* the alternative (e.g., "…there's little perceptual difference between Cheer and Tide") must continuously augment saturation to maintain a behavioral advantage (be bought). Products with relatively high positive relative rank variance will find these adjustments less necessary.

[G.3.] Moderating Variables

[G.3.a.] Resistance to Change

As noted previously, those who wish to influence behavior must recognize that they are intervening in an existing system. The conditions that have been described by The Theory are already in place and working. Thus, people believe that the things they now do are logical, rational, and in their own best interest. This is why there appears to be resistance to change.

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Durable change typically necessitates a revision of personal value structures (rank mode) or alterations in dependability (contingency mode). Others' reactions to people and products are a result of their prior experiences, either real or imagined. Unless otherwise mandated, this will remain in a state of equilibrium. If people have been let down by certain products or persons, they will confront these with preconceived skepticism.

[G.3.b.] The Approach

The approach used in any change process often enters the formulation as a paired behavioral factor (R or P) - e.g.: A person may like chocolate ice cream but not if it's shoved in his face. Or underlined requirements to get a Covid shot! But repeated use of any one approach often becomes paired to the purveyor (e.g.: "Better not let Dad find out…he'll surely get pissed off." Or "The government always butts in.")

[G.3.c.] The Control

Overriding any change effort is the requirement for the change agent to have access to the subject's variables. For example, the best TV advertising will have no direct effect on someone who does not watch television. Knowing how to do something and having the resources to do that are two separate matters. This is why the catchphrase "if you're so smart why aren't you rich" is invalid. Just because you know an issue does not mean you have the wherewithal to change it. The essence of this was seen in The NY Times, which carried a sports article on the use of statistics in baseball with the pull quote: "Learning the lesson that data matters only if players use it."[57]

[G.4.] Self-Change

The conditions for self-change follow the same design as imposed change described above. It makes no difference where the options come from. We will follow that B which has the greatest perceived valence irrespective of the source, insofar as the source's variables are included in the computation. Extrapolating this, we can project that (other things being equal) people of low self-esteem, statistically, will have difficulty making personal habit changes. Or conversely, the way to help people make personal habit changes is to increase their self-esteem.[58] To the largest extent, all change is self-change.

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Chapter VI.
Induction

Induction: The process of discovering explanations for a set of particular facts by examining the weight of observable evidence in favor of a proposition which asserts something about that entire class of facts.

It's been said: "The most advanced machine remains lifeless without the benefit of our input, and meaningless without some advantage to our existence."[59] This perspective introduces the concept that principles of human behavior permeate most-all our endeavors, and that disciplines which invoke human effort must have cores built on postulates of behavior.

In this chapter we continue our examination of The Theory by considering its accountability in a sample of tangential disciplines. Included will be the subjects of economics, political science, sociology, anthropology, education, some germane philosophical issues and items concerning computers. In addressing these topics we're questioning whether or not The Theory of Behavior has the capacity to comment in these fields; and in the process, we're looking for the limits of Theory penetration.

[A.] Anthropology

Culture, and its personification as a society (societal norm) is synonymity of R and P structures (e.g.: the same looks are beautiful; the same attitude is desirable; the same interests are appealing, etc.) with parallel K values (e.g.: political outlook is fundamental; religious beliefs are critical; etc.). The greater the synonymity and closer the parallel the more cohesive the society.

A culture's "development" (i.e. changes) will be in response to perceived environmental reinforcement. The more contingency assessments conform to reality, the greater the probability that that society will endure.

[B.] Sociology

The previous chapter addressed issues with the Behavioral Sciences, many of which apply to Sociology. Sociology, the study of social relations in human societies, is considered by many to be the softest of the "soft sciences," but this need not be the case if we were able to quantify behavior. In light of our proposed Theory, consider the following -

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Relationships with family, friends and business associates differ in that the rewards and punishments paired with their behaviors will vary - behaviors reinforced in the office will likely differ from those rewarded at home, etc.

Friends, spouses and partners are selected from the individuals available at the time when the option to have companionship becomes more desirable than alternatives. "That special someone" enters the picture as a behavior option (B) with greatest overall valence ($B_x > B_n$) relative to others. If "that special someone" is perceived to have a valence substantially higher than the next possibility, then the person faced with the decision will consider himself fortunate to attain that relationship.

To strengthen a relationship, one must provide the partner, in the partner's terms, with either more rewards, less punishment or fewer alternatives. The "more or less" can be accommodated in either C, S or K mode, or by adding new complete R or P sets. The desired configuration here is $B_{you} > B_n$. When $B_x > B_{you}$ "you" will be discounted, left, separated, deserted, etc. as the case may be, in favor of option B_x.

Sadly, if a child is more punishing than rewarding to a parent, he can expect to be abandoned or abused. If $B_{child} < B_n$, or $B_{child} < B_x$, the child will have a discounted valence, relative to other variables, and will suffer the consequences of this condition. B_x in this case could be one's career, survival, another child, parents' fun, drug dependencies, etc. Child abuse, or "throw away children" as depicted in historic literature, serve as ample illustration of the unfortunate realities of this situation.

Young children learn behavior options from their environment, in which parents typically play a decisive role. Insofar as parents wish their children to succeed, successes will be rewarded; Wish to be independent, independence will be reinforced; Parents who wish their children to fail (see them as competition) will encourage that event or discourage the converse. If overt encouragement is unacceptable, subtle means may be found. Parents have needs too, which understandably (but not sympathetically) could conflict with those of their children.

Happy family and social groups are those which encourage and reinforce positive responses. For example, $B_{happy} > B_{issues} > B_{problem} > B_n$. No one activity intrinsically creates joy in all a population - unless the population is selective. Of course, friends, families and social groups are selective.

The "popular" person is the one who is most rewarding to others in their terms. That is, the person has attributes so that association would be perceived to build the fans' self-worth variables. Becoming more popular requires satisfaction of the R and P constructs of the group in question. An alternative is trying to change group values (normally K mode) while keeping your B constant. Of course, as discussed earlier, some attempt to enhance popularity by decreasing the relative scores of others which goes under many names: putting down, bad mouthing, trash-talking, dissing, maligning, denigrating, disparaging, etc.[60] Seems we might be doing this quite a bit.

$B_{self} \geq B_{group}$ is saying that "What I feel is best for me to do is as vital a consideration for me, as that which others feel I should do." This is a self-confidence design. There may be others. Do note that this is not $B_{self} > B_{group}$, which says (basically) I count, and the group does not; or as the transactional analysis school once put it, "I'm OK, you're not OK."[61]

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[C.] Economics

Those in economics have long acknowledged the influence of behavioral variables. The following news items serve to illustrate -

Time Magazine. October 15, l990:
"Since consumer spending amounts to two-thirds of the economy, talk of recession can be a self-fulfilling prophecy. 'The recession starts in the heart, then is reflected in the charts,' explains a senior Italian banker stationed in the U.S. 'If you look into the hearts of people right now, you see a recession'."

The New York Times. November 17, 1991:
"With the markets 120.31 point drop last week, the nervous chatter on the street turned to the 'wave'- not the football wave, the Elliot wave. The Elliot wave measures mass psychology its adherents say..."

Time Magazine. December 31, 1991:
"The irony of any recession is that fearing makes it worse... which means that when buyers are spooked, the rest of the economy shudders."

The New York Times. December 20, 1985:
"Coffee futures prices soared yesterday on a false rumor that an earthquake in Columbia had damaged growing areas there."

Note some of the decisive terms from the above articles[62]: "talk," "prophecy," "hearts of people," "nervous chatter," "mass psychology," "fearing," "spooked," "shudders" and "false rumor." Unfortunately, such phrases and concepts are not exclusive to news reports. Consider the following from the Paul A. Samuelson authored textbook, *Economics*:

> "In a primitive civilization, *custom* may rule every facet of behavior. *What, How* and *For Whom* may be decided by traditions passed on from elders to youths. To members of another culture, the practices followed may seem bizarre and unreasonable; the members of the clan may themselves be so familiar with existing practices as to be surprised, and perhaps offended, if asked the reason for their behavior. Thus, the Kwakiuti Indians consider it desirable not to accumulate wealth but to give it away in the *potlatch* - a roisterous celebration.
> However strange many customs look to outsiders, they often are efficient at performing the three functions of organizing the economy. In some cases, though, customs may be so unyielding that societies become extinct defending their traditions."[63]

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As we've stated, nothing is inherently an *R* or a *P*.

People make economic decisions. This applies equally to a consumer's purchase of a bar of soap, as it does to systemic adjustments by members of the Federal Reserve. The standard of living that is expected, the direction of effort one is willing to expend, the material objects people feel they should have, and the priorities placed on these factors are what shape world economies. There is nothing that requires economic decisions to be fiscally logical: fortunes have been made on "worthless" products; fully solvent banks have suffered panic runs; and cartel members' political disagreements based on religious affiliations have had vast repercussions in the private sector. Consider the words of Greg Fraser, Portfolio Manager of Fidelity Diversified International Fund -

> "Much of the movement in Italian stock prices last year was sudden and unpredictable, and due largely to psychological factors. The models ignore psychological factors because they're not quantifiable."[64]

There is no single great motivator, and even such basic notions as the acquisition of wealth or standard of living expected receive varying degrees of emphasis (*K*) in the repertoire of individuals. This applies irrespective of the culture and the state of its "development." The idea of a multiplicity of noneconomic motivators affecting economic behavior is noted in the book, *Adam Smith's Mistake* by Kenneth Lux. Lux refers to "little known" early 1900's English economist Phillip Wicksteed in the following -

> "Wicksteed proposed that although people do seek their own interests, these interests could be anything, even social concerns such as philanthropy or human and civil rights, as well as the usual economic private gain. Economics need not presume what an individual's personal interests and goals are. Different people have different interests; some may be selfish, others not. All economics is saying [or rather, should be saying] is that people pursue their own ends, and they do so in as efficient and as calculated a way as possible."[65]

A person will make a decision to do something (**x**) if, and only if, $B_x > B_n$. This includes buy, sell, trade, borrow, loan, commit fraud or whatever. For economic variables, a law of human behavior is the bottom line.

[D.] Education

We've previously discussed the learning process. Here, we turn our attention to what is considered the formal education environment: encouraging people to learn, dealing with those who might not be predisposed to learning, or just making education a better experience for all. Under consideration are the student, curriculum, teacher, school, resources, etc.

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Students apply themselves to learning when $B_{learn} > B_n > B_{dn}$. School will be seen as the most desirable activity when the perceived rewards less the punitive sanctions of study supersede those of other options.

A student's definition of educational "relevance" is its ability to provide rewards or to eliminate punishments that are perceived as real (high C). While B-Set configurations may remain constant (*e.g.*, to get an education), definitions of R and P will vary between cultures and subcultures. Thus, to consider an extreme, we can imagine that in criminally oriented communities a school teaching techniques for effective gang management may have much lower dropout rates than one teaching reading, writing and arithmetic. In some cultures, basic survival may be the most appropriate academic discipline. A prison college teaching escape and/or parole strategies could be expected to be of riveting interest to many inmates. Irrespective of the society, to be effective educators must have an understanding of the truism-goal-need-strategy (B-Set) system by which their pupils function. It's like product development knowing the interests and needs of customers.

Generally, B-Set suggests that teaching technique would benefit from a greater regular laboratory orientation, employing this idea by showing exactly how the concept is used (greater C), how it could tie in to the student's goals and needs (enhanced K) and its importance in real world use (stronger S). This would require added effort on the part of teachers and curriculum designers. The performance of a student is contingent on the student but equally so on the instruction and support system. It would always be beneficial if learning, per se, is reinforced. Environment is significant.

[E.] Leadership and Management

Leadership and/or the lack of leadership skills are often a topic of discussion and interest. Leadership is operationally defined, roughly, as "getting things done through other people." They can be selected top down or bottom up, it matters little. Interestingly, the AMA definition of management is also "getting things done through other people." A leader must manage, and a manager must lead. The leader is the one who is perceived to be most likely to aid the group in achieving its goals or alleviating its needs. What those factors are, are variables to be determined - K structures of variables differ among groups. The leader of a terrorist gang will have different characteristics than the leader of an orchestra. However, because of the R's and P's associated with the assessment process itself, selection tends to correspond to the following:

Primarily, populations select leaders that they like. We like people that have B-Set structures we aspire to, wish to emulate or that add value to our goal attainment efforts. We like people that are like us. That reinforces the image of the way we want things to be. We like

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heroes and stars. Those that are entertaining and glib. Someone we'd like to have lunch with, tell others we know. Something perceived as increasing our self-worth. It's "we" oriented.

Secondarily, we consider those who are perceived to reflect aspirations of the groups' goals and needs better than alternatives. But evaluating these attributes often involves unclear elements (low C) and an effort to assess (P).

And finally, sometimes considered are characteristics that personify relevant qualities like administrative skills, repute for honesty or adroit handling of economics. But these latter factors are hard to conceptualize.

So how effectively do we judge whom that might be? If you accept the data of Malcomb Gladwell in his book *Talking to Strangers*, we do not do this very well.[66] Malcomb Gladwell may be right.

The leader/manager needs to know the outcomes - i.e., high C. It helps for things to be predictable, reducible to formulation, expectant with known probabilities. In industry, robotics are desirable, for example, because they perform within known parameters, workers not so much. As there's not been a durable science of human behavior, there has not been a true science of management and that's why many refer to management as an "art." Maybe B-Set can provide a more manageable approach.

As our interest is in seeing if B-Set can address leadership/management subjects, let's consider our B-Set design in light of three generally accepted aspects of management - the organization, the manager or leader herself and the employee or follower/participant.[67]

The organization or group is comprised of people: immediate bosses, probably owners, possibly investors, followers and customers, and maybe an organizational culture (see the previous Anthropology topic). All the above have their own goals and needs, oftentimes relating to profit or performance and oftentimes not. It would be of value for the manager to have knowledge of the probability of response reactions to the given B-Sets. That is, to understand what is important to them (K), their time and output frameworks (S), and the degree of freedom which they permit for operation - a factor of confidence and toleration of error probability (C). However, of those individuals that impose their B-Sets on the manager, some will be more important than others. The relative values of the B-Sets of these individuals are a factor of our second aspect - forces in the manager.

Managers and leaders themselves will have B-Set structures. These may or may not coincide with the organization or those of anyone else. Recent disclosures involving predatory acts by some in positions of authority serve to illustrate. So, the job of the manager is to determine his own (hopefully moral) goals and needs (R/P), to prioritize them (K), decipher the time framework and distribution of accomplishment levels (S), and establish the probability of their fruition (C). But if we presume that he wants to retain his position and possibly advance, then he must service the B-Sets of those who have the ability to fulfill those conditions. Thus, he must factor his B-Sets by those in a position to satisfy his structure by considering the B-Sets of "significant-others" that relate to him.

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Our third aspect of leadership/management involves the participant, citizen or employee. Since the advent of the industrial revolution, supervisory technique has gone through varied forms: from the sweatshop of the 1900's, to the "fair work for fair pay" of the 1940's, through the enrichment of the 1950's, to the psycho-manipulative 1960's, the participative 1980's, the disenfranchisement of the 1990's and now the computer controlled gig economy of the 2000's.[68] Once upon a time long ago, in the craft-guild era, workers were an asset to be included in the worth of the organization. Starting in about 1995 they became an expense, something to be minimized.[69] This is not a surprising turn of events - the potential value of an asset is factored by the probability (C) that it will perform to its full K. Since recorded time, managements have been attempting to engage the full productive enthusiasm of their staffs. But they have not been consistently successful.[70]

The B-Set structure of the workplace or social environment is varied and complex. Clearly an employee will dedicate herself to a task when $B_{task} > B_n$. But it's unlikely that all potential B_n delineations would be greater than any one B_{task}. As a result, to employ a B-Set based science of supervision two things must be done: (1) Identify all relevant B_{task} items, and (2) determine where the K of these particular B's locate relative to other B's in the employee's repertoire. What this would provide is a probability (C) of task (B) dedication. But employees are selected; and task environments may be restructured to incorporate the desired functions.[71]

Most successful, interesting and possibly better still, is if an organization can tap into a prevailing culture - that is, identify the resident population's B-Set structures and organize itself to take advantage of those proclivities. For example, if a group is found to have high entrepreneurial interest (a K factor), or say if political arousal strikes, a new organization, manager or leader might avail themselves of this enthusiasm by structuring in a way that provides opportunities.

Different regions have different values that will be more inclined to have interest in different tasks. Coercive groups (like dictatorships) operate in $-B > +B$ territory, with the previously noted vulnerabilities in-play. But on the positive side, when incentives are correctly matched to organization objectives, any group will have productive activity.

[F.] Political Science

With regard to the practice of politics, a B-Set is lurking in every crack, corner and crevice of that process. Much of what's previously been said in this treatise applies. Topics like selecting a leader, calls to action or favoring a chosen path or association have all been addressed. Here we want to visit a few concepts specific to political disciplines.

[F.1.] Political Systems

Once more, we repeat, people have different values - valences associated with the sub-factors of a given behavior option. Thus, there is no inherently ideal political system - be it a capitalistic based democracy, a socialistic based democracy, a monarchy of constitutionally

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limited or full authority, a theocracy, an oligarchic configuration, or any other design. Actions that promulgate a specific system are, at best, naive. If we define "ideal" as that which best satisfies the B-Set conditions of the population, then under varying circumstances different designs would be optimal. Those enamored with any one design need to consider the following:

Michael Kinsley, from a *Time Magazine* essay -
> "The Yugoslav mess is one reason some...have lost their interest in promoting democracy. They look at the post-communist world and see that the most common cause of war is nationalist hatred - which democracy, far from suppressing, actually gives vent to."[72]

This is also brought out by Yuval Noah Harari -
> "Western attempts to impose democracy and human rights on Muslim nations resulted in a violent Islamic backlash …"

And his observation in broader terms -
> "…humankind has always been divided into diverse civilizations whose members view the world in irreconcilable ways."[73]

Henry Kissinger adds to this line of thinking noting -
> "In Asia's historic diplomatic systems, whether based on Chinese or Hindu models, monarchy was considered an expression of paternal authority… "

The success of a political design has little to do with that design. Any design can succeed if it fulfills the B-Set structure of the population and correctly assesses its environment. And conversely, any design can fail or require restructuring to endure. Inflexible advocacy is the one approach that is least likely to succeed.[74] Of course, on the paradoxical other hand, democratic designs would seem most effectively able to decide.

[F.2.] Intergroup Relations

The relationships between different nations (groups, cultures, etc.) are determined by the nature of the R's and P's held by each other as being true. Whether or not the perceptions are correct is very relevant - perceptions of one's self as well as that of the other. Trans-culturally, the probability of being wrong is magnified by the different cultures, per se. Actions may not be based on fact. They may or may not be correct. But we always act on our perceptions.

Cooperation is the exchange of R's and P's, while taking into account and trying to accommodate each other's K structures. Conflict is typically the exchange of P's. An understanding of each other's B-Sets, along with proper assessment, will lead to less conflict: few enter a war knowing they'll lose; few antagonize an opponent knowing they'll come out the

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worst for the exchange. But in this we must always recall, one person's **R** may be another person's **P**.

There is advantage to having an understanding of others' values: What do they generally consider to be an **R**? What a **P**? What are the valences of these items under varying circumstances? How do they perceive contingency? Are they satisfied (at saturation) or dissatisfied? And can this data be logged? Behavioral options assessed in B-Set terms provide understanding, lend themselves to quantification and increase the probability of being correct.

[F.3.] Public Service

A blog once asked: "Can you be truly altruistic?" That was, can one (does one, would one) give of themselves without any benefit to themselves? Altruism can take various forms: It may be as oblique as avoiding something known to distress another; or as direct as volunteering to aid; or even pursuing public service. Certainly, the well-being of others can have high valence. At times, it has an even higher valence than one's own (e.g.) health, as in the case of the health-care workers during a virus pandemic. But a person who acts will always pursue their own individual highest valued B. We are incapable of otherwise.
Officials will do what is "right" only if that B-Set is of higher valence than other B-Sets, such as their re-election (constituent pressures - or vice versa). They represent the interests of their constituents only in so far as that B-Set value predominates.

If a citizen finds no significant difference between candidates on issues of personal importance, then they will not take actions (vote), unless supporting, *per se*, has a higher valence than other activities the person could be engaging in at that time ($B_{vote} > B_n > B_{dn}$). The vote for candidate **x** (B_{vx}) may thus be depicted as $B_{vx} > B_{vy} > B_n > B_{dn}$. B_n and B_{dn} are ever-present considerations in attempts to call others to action. If the difference in valences are large, an individual may be moved to action - making a donation, joining a campaign, etc.

[F.4.] External Variables

Those in power who want to stay in power will tend to create an aristocracy or bureaucracy. Since they're the ones in control, they will make the system rigid, in orientation if not in fact ($B_{me} > B_{system}$). Alas, as change is after all essential, over time most systems will weaken, probably fail and eventually their leaders will fall. The outcome lies in their B-Set structure: How strong is our value to do the "right thing", versus that which is expedient? Or retain your position? And in elections, can the electorate tell. Do they even want to know?

A news media with the need for constant "breaking news", an iconoclastic, jugular news media exacerbates the problem. Newspapers/networks are businesses too and the importance of their ratings always modifies the evenhandedness of their coverage. "Breaking the big story." The focus on conflict and "bad news." Really, who invented Trump? Then again, people watch

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what is interesting. If something is "newsworthy," who is to decide? And in this connected era, who is deciding? The editors of Google? Facebook? CNN? Fox? Generally, there would be benefit here to Theory based research that could define an agreed upon optimum ($R>P$, or $R_x>R_n$) approach. You clean up the internet not by going after content or platform, but by going after the individuals or groups that violate the norms. Marshall McLuhan, in our hippy years, years ago said it best: "The medium is the message."[75] Indeed!

In our concrete real world where decisions must be made, B-Set provides a system to quantify the variables and analyze the data.

[F.5.] Jurisprudence

Laws are knowingly broken when the perception of the valence of illegal options outweighs the valence of legal ones ($B_{illegal}>B_{legal}$). The potential of being caught and the perceived rank of negative sanctions enters the computation along with advantages of the act, general notions of honesty, moral values, etc. Accidental/unintentional law breaking is an educational offense.

Aspects of criminal justice systems encourage illegal outcomes: Lengthy litigations with obtuse procedures diminish contingencies, as do regulations which hamstring officials in the timely pursuit of specific acts. Prisons which place criminals together create a criminal culture that reinforces crime, inhibiting a change of values (typically requiring adjustments in rank mode).

Incarceration should only be an outcome if the action was a factor of K mode. In fact, prison time may be seen as rewarding if a street counterculture requires it as a rite of passage.[76] This also applies to revolutionary conditions where a prison sentence acts as certification or dedication to "the cause." Again, one's R is another's P. But even under ideal circumstances, inducing change is impeded by significant constraints (identified in the section on behavioral change noted previously). For the prison experience to be effective (we presume normative Western values) there must be an understanding of the reasons for the act. But as noted earlier by Gladwell, we are horrible judges of one another. Possibly B-Set can provide an analytic and rehabilitative framework.

We now consider that there are several conflicts noted in the legal process. One is between the protection of individual liberties (B_{lib}) and the probable incidence of an increase in crime (B_{crime}), an approach-avoidance mode condition. Eventually, a point could be reached where both conditions will be optimized, although with some loss to the opposing camp. In doing this it should be noted that we can seek optimization, but not perfection.

There is also the possible case where $B_{crime}>B_{dn}$ with a nonexistent B_n. This says that society has failed to give the individual behavior options (B_n) other than illegal ones. This is a position advocated by some in the sociological community. It states that there are cultural segments which have no choice but to pursue lives on the criminal edge. While it may be that

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this case is overstated, it is nevertheless a possibility that must be considered. In most cases, however, we believe that $B_{crime}>B_n>B_{dn}$ describes the criminal condition officials must confront.

But also, there's a school of thought which says that the purpose behind the punishment of crime is not to correct behavior at all! Rather, these theorists say that it's just a part of a system which is required to keep the system intact and that aside from rare instances there is no other purpose.[77] We agree that this approximates actuality. The primary purpose of punishing criminal perpetrators is not to correct their behavior. If it were, we would not continue to treat them in this manner, which does not work.

As noted by A.R. Louch -
"Jailing offenders fails to do the job of deterring crime or reforming criminals."[78]
Louch goes on to strike at the essence of the issue -
> "Punishment [of criminals] needs to be thought of first of all as a way of penalizing infractions of the rules of the social game. Penalties are extracted, not so much to deter players from breaking the rules or as a means of reforming those who have broken them, but to insure that the game continues under conditions of fair play."[79]

Unfortunately, as societies continue to suffer under the weight of criminality, such notions of gaming begin to lose their appeal. Populations, it seems, want results from their investment in a criminal justice system. But then again, politicians are often lawyers that make the laws that define the system.

[G.] The Human Operating System

[G.1.] Philosophy and the Computer

At points in this treatise we've implied that computers can replicate human performance. To do this, however, many authors assert such mechanisms must exhibit certain abilities - notably: consciousness, understanding, thinking and feeling.[80] It's believed these represent an essence of the human experience. Whether or not this is true, or comprehensive, it would be helpful to consider these processes further *vis-a-vis* B-Set.

[G.1.a.] Consciousness

Consciousness is normally defined as being "aware of what one is doing; awake to one's own existence, sensations, cognitions, etc."[81] There appears to be two parts to these definitions of consciousness: (1) an awareness of self and (2) an awareness of one's environment. These will be covered below.
Let's begin by punching a few holes in the consciousness balloon -

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First, human consciousness is not a given. All people in a specific situation will not be similarly conscious of the same things in the same way. The Aesopian example takes two travelers, one blind and one deaf, walking through a tropical rain forest. The blind one would be conscious of all the birds singing but oblivious to the lush vegetation. However, the converse would be true for the deaf person. Less obvious but of significance is social consciousness. A given partygoer may be acutely aware of hostility from his host; while another person may not be conscious of similar feelings either for himself or for others, irrespective of any hosts' behavior. And may not be conscious of the fact that he is not aware.

Next, even consciousness of self is a variable. One person may be acutely aware of his own attributes while another may be unaware of such things. While virtually all beings have some self-image, the degree clearly fluctuates. Some even take courses to "increase consciousness" or "improve self-awareness."

Finally, we can even go so far as to say that dogs are more conscious of smells and sounds in the environment than their owners. And trees! Are trees more conscious of soil quality than the average weekend gardener? Probably so. So, what is consciousness?

We see several constructs that fall into the consciousness category which can be defined in B-Set terms. These will be cited -

If at any point in time the sum of an individual's R and P configurations yields the condition $B_x > B_y > B_z$, and if asked for preferences between B_x, B_y and B_z, a search needs to generate the computations necessary to yield the proper hierarchy. People have the capacity to do this type of data analysis. To make a robot conscious, a similar program would have to be installed.

Say computer "Cal" is playing a game (say the Turing test[82] or chess) with other computer "Sal." They need to recognize what they are doing (game), and the participants (Cal and Sal). They should remember this (go to memory) for date and time. Now if you want to give Cal some sensors, like a thermometer, wind gauge, and light meter, it could begin to report (and remember) the various conditions surrounding its game. If a condition correlates with the game (Sal always wins at night when there's hot weather), this too could be noted (go to memory) and considered in planning (*i.e.*, don't play chess with Sal after 6:00 P.M. if it's above 35°C.).

We once read an account of a group of people on a remote South Sea island who considered themselves to be the only people on Earth. Their name for themselves reflected this belief. Who and what we perceive ourselves to be is variable and, at times, inaccurate.[83] A machine can be endowed with a program to give it self-knowledge. This knowledge need not be complete or correct to approximate the human condition. If a computer has a given capacity and is engaged in a project with a projected activity level that will exceed that capacity, it can reject the work. This is like the man who refuses to lift a load for fear it will exceed his ability, causing possible injury. We are conscious of the things we discover about ourselves, are told or otherwise learn. The human character is simply the capacity to accept this data. Doing so in B-Set form makes the information operative - *e.g.*, "Am I willing to risk getting a hernia by lifting a heavy weight in order to impress my girlfriend ($B_{girlfriend} > B_{hernia}$)?"

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One difficulty some people will have accepting this Theory of Behavior treatise is its proposal of an altered picture of self-consciousness (*K* mode disparities) - the proposal of a "mechanics" to human nature versus a mystical core. This fact alone is indicative of the issue - consciousness is variable and (B-Set) definable. As a result, we do not believe that consciousness is the single essence of human experience.

[G.1.b] Understanding

Using something, knowing that it works, knowing how it works, and knowing why it works, are not the same things. In fact, we often use things without fully understanding all of their underlying principles. For most, the personal computer and family car would be illustrations. Automatically attributing to human beings an understanding of something would be a tenuous proposition. In fact, understanding is not intuitively a human attribute at all. People do understand, however, because they learn in a B-Set context. That is, new *B*'s have sub-*B*'s which have *R*'s and *P*'s which in turn have *C, S* and *K* elements. New retained information, as noted earlier (see Learning), is a B-Set. This is often paired to another B-Set, or series of overlapping B-Sets to form a pyramid or hierarchy. A given B-Set will have a host of related B-Sets, which together comprise the understanding of a situation.

Things have no innate meaning. If nerve cell sets **w,x,y** and **z** are activated in the presence of a cow; and **w** is sight, **x** is sound, **y** is smell, and **z** is an explanation of use; then the cow is defined as **w,x,y,z**, and not by anything indigenous to the environment or inherent to the cow.[84] This information would then be pyramided with other knowledge (prior B-Set configurations) of animals and nature to form an "understanding" of a cow.

Machines whose retained information is configured in B-Set format will "understand," as do humans.

[G.1.c] Thinking

Thinking is an attribute many like to identify as the uniquely human quality. Our dictionaries tend to define it as follows: "To form or conceive a thought in the mind; to have an idea, conception or the like - meditate, ponder in the mind, to hold an opinion."

Concerning "the mind" aspect, we first raise an issue that many authors have considered: "Is an appropriately programmed computer a mind?" Or conversely, "Is the mind an appropriately programmed computer?"[85] The premise being, if we identify computer programs that can conceive a thought, have an idea, form a conception, meditate, ponder an issue and hold an opinion, then our definition's dependence on the mind (presumably the human brain) becomes ostensibly unnecessary.

Let's look at some elements which are considered to comprise thinking -
- <u>Hold an Opinion</u>: If $B_x>B_y>B_z$ then the human or machine with such a construct will "hold an opinion" that $B_x>B_y$ etc. The things we believe to be true are our opinions, the things a computer believes to be true are its opinions.

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- <u>Conceive an Idea</u>: Given desired outcome R_x, what B's will contain R_x? Note all Bs with R_x sub-elements. Of the Bs with R_x sub-elements, which has the greatest valence when applied in the situation at hand? Note the similarity between this and creativity, discussed earlier.

- <u>Ponder an Issue</u>: Consider your data bank or cognitive arena (as the case may be). Does it contain B-Sets where ambient S_R is one standard deviation, or more, above optimal S-Point? (This is why you are "feeling full" - more on feelings below). Note all such items. List them by overall valence disparity. Consider the first item. Seek any B which is mutually exclusive with that B-Set... Whether "you" is a computer or a human, you just made a "To Do" list, began to solve the problem and in the process "pondered the issues."

We don't believe that thinking is the uniquely human variable, or that it requires a mind.

<u>[G.1.d.] Feeling</u>

Let's pretend there's a man named Igor Touchafitski.[86] He is generally known as a dedicated worker, husband and father. One day, while driving home from the factory, a big semitrailer truck fishtails on the ice, overturns and squashes Igor like a bug. He's dead. The town newspaper carries its standard obituary which is read by many local citizens.

Mrs. Touchafitski "feels" devastated. His children "feel" lost and alone. His two friends "feel" sad. His mistress "feels" let down (he promised they'd run away together). The local bookie "feels" angry (he owed a lot of money). Most town residents "feel" ambivalent. His coworkers "feel" relieved (he was pushy). The local union officials "feel" pleased (they were afraid of his opposition in upcoming elections). And the town's mob boss is out and out ecstatic (Igor had connections to a downstate organized crime group).

Feelings are not a given. What most people experience and call feelings are S-curve disparities. (See previous S-curve discussions.) Thus, in our above story, Mrs. Touchafitski's saturation point and curve distribution for her husband was probably at a defined incidence level - to have him around providing specified contact, support, etc. His death, while leaving her curve (need for companionship, etc.) intact, shifted the incidence position dramatically down creating significant disparity, which she interpreted as feelings. Had her original curve been skewed down, with a lower saturation point ensuing (he was a philanderer, crook and cheat), she would have a lower disparity and therefore her feelings would reflect reduced intensity. In any case, over time, she will probably be less distraught as her S-curve readjusts.

Consider now the mob boss whose S-curve disparity existed while Igor was alive, but in an upward direction. That is, he had more of Igor than he wanted. When Igor was killed, the mob boss's Igor S-curve was brought into homeostasis by its initial low saturation point and subsequent downward movement of the actuality.

Synonymity of the saturation point and actuality leaves an organism in homeostasis *vis-a-vis* that variable, and without sensation of feeling. Feelings of accomplishment are normally so fleeting because they are our reaction to the transition phase from disparity to homeostasis - a typically short period of time. Individuals who can rekindle their feelings of success do so by replaying (inoperative hypothetical mode) the disparity and then permitting themselves to luxuriate in bringing it to imaginary homeostasis. This is why bragging usually involves the

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telling of a story and takes the form that it does. Effective adventure or action movies employ the same structure - creating a problem at the start (usually feelings of anxiety) and then permitting the hero to prevail over the issue (resolution of the disparity to homeostasis).

This process is illustrated in Figure 12, below. Here, a person operating in "Range **D**" would experience feelings of deprivation. "Range **F**" individuals would experience feelings of fullness. Feelings are disparities between saturation (the desired incidence) and the actual incidence of a variable. This delineation could be represented and duplicated in the computer. As such, it is not the unique human variable.
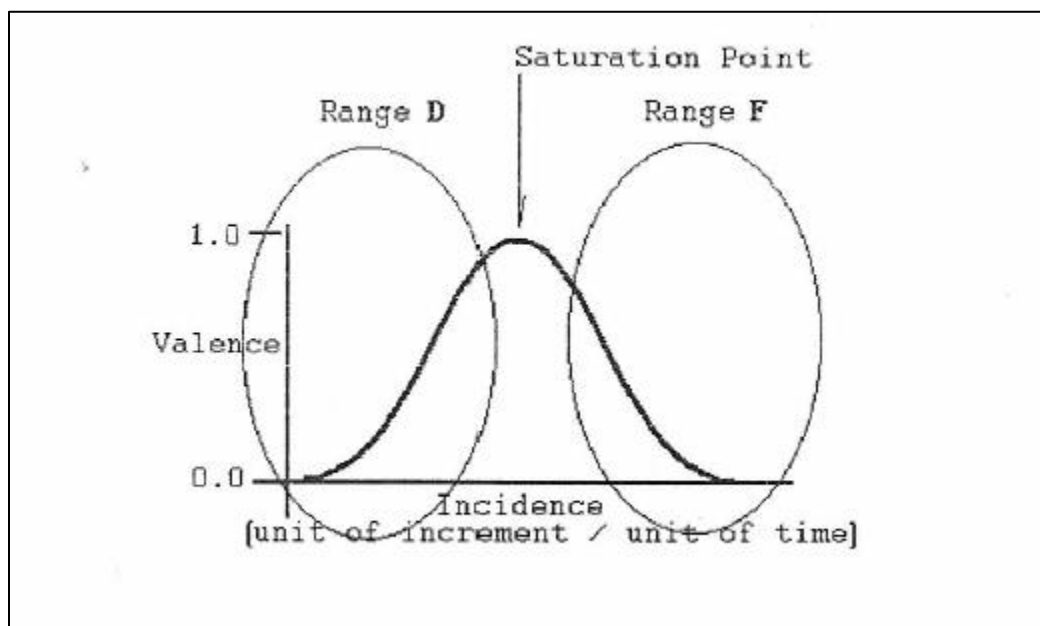
Figure 14: *Feelings*

[H.2.] The Computer

[G.2.a] "Artificial Intelligence"

We now consider whether or not a computer program can be made to behave as a human.[87] And what this human operating system would look like.

At this point in the presentation of our theory, it's apparent that we believe the B-Set design defines the essence of our actions. The following specifics provide an overview:

The variables will include an assortment of B-Sets including R, P and their C, S and K components. There will be truism items in varying strengths B_{ds}, B_{dn}, B_{te}, B_{ex} and P_e.[88] Additionally, some aspect of the B_{cre} structure, the ability to work creatively, may add a bit of zest to the cauldron. The relationships will be as follows - The computer will behave (do) B_x when $B_x > B_y$ and $B_y > B_n$. If $B_x \approx B_y$ and $B_y > B_n$ it will have to "flip a coin" to decide between B_x

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and B_y. Any B will be defined by its R and P sub-elements in form $B=R-P;$ and as noted in our theory chapter, $R=S^R(C^R \times K^R)$ and $P=S^P(C^P \times K^P)$. Each B may have a number of R's and/or P's, but the operational amount will be finite (intelligence).

If the computer is to behave human it must do more than "crunch numbers."[89] It must do as people do - pursue a course of quality (valued) manipulations, optimizing efficiency as noted earlier in discussions of P_e and stimulus generalization. It must also deal with its cognitive arena (data base) in overlapping pyramids comprised of interdependent B-Set hierarchies. It must pursue strategies based on situational analysis where, to achieve a goal, immediate advantages can be discounted in favor of a general B-Set system perceived as having greatest positive term probability. Term may not be goal fruition, but rather a plateau identified as advancing fruition potential. And finally, the true "human operating system" will do as all things human do, it will make mistakes.[90]

[G.2.b.] Computer Applications of Theory Constructs

At this point we see several potential avenues where application of Theory constructs would have impact on performance reliability:

First is the analysis of existing behaviors to improve predictability. Anticipation of market response is one (see discussion of economics). Product acceptance and political polling are others. Here, there already exists the research infrastructure to garner the necessary raw data.

Second is the performance of specific limited functions in human form. One possibility could be the interactive relationship between the PC and its user. More than presenting a menu, the PC could better anticipate its users' interests and do necessary legwork in advance. It might even do the work, present its recommendations for approval, and learn from responses.

Third is the reproduction of human function. Here we are talking about creating a computerized B-Set neophyte and permitting it to learn by interaction with an environment.

Fourth is the construction of the total human in adult or advanced form - like building a humanoid or robot along the lines of "R2D2." However, we question whether enough is currently known to successfully do this. Yet this may be the most interesting, seeing what eccentricities emerge from our limited understanding.

And fifth, assessing the behavior of groups so we can better get along, and get along more to everyone's satisfaction.

We believe there would be benefit to exploring all the above mentioned areas.

[G.2.c.] Concluding Thoughts on Computers

In the latter part of the year 1991 we saw on television a chess game where the reigning grand master was matched against a computer. In this case the computer lost the game (though in later challenges it won). After the game the announcer made some comments concluding the show and the roomful of computers were switched off. But then the truly impressive event

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happened: The grand master, the man, got up! He then turned to the rest of his life and daily chores. The man had a host of skills and abilities; the computers had only one.[91]

We feel that The Theory of Behavior identifies human behavior in a form that can be computerized. But computers are not people, and computers do not function as people do - at least not yet. Results from simulations that have sought to model human performance have been tenuous.[92] The problem was that no quantifiable behavioral design had been devised. Possibly, B-Set will be of service - we shall see. Douglas R. Hofstadter summed this up as well as any in the following -

> "Minds exist in brains and may come to exist in programmed machines. If and when such machines come about, their causal powers will derive not from the substances they are made of, but from their design and the programs that run in them. And the way we will know they have those causal powers is by talking to them and listening carefully to what they have to say."[93]

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Chapter VII.

Proposition

Proposition: Something to be considered, accepted, adopted or done. Anything stated or affirmed for discussion or illustration. That which is offered at the beginning of a discussion as the subject for an argument or discourse.

[A.] Conceptual Review

In our first chapter ("Problem") we related the circumstances which led us to inquire into the subjects of this treatise. The second chapter ("Premise") cited the interest in human behavior and noted the benefits that may ensue from a theory which effectively describes such phenomena. The third chapter ("Postulates and Axioms") presented a collection of concepts and principles which relate to our subject that could aid in theory development. In the fourth chapter ("Theory") we assembled the ideas from the pages which preceded and presented the basic form that a theory of behavior would take. The fifth chapter ("Theorem") had two functions: to put some finishing touches on the theoretical construct which had been presented, and to test its suppositions by seeing if it could accommodate behavioral science phenomena. Sixth ("Induction"), we examined accountability of The Theory by exploring its response to the demands of tangential disciplines.

This brings us to our seventh and final chapter ("Proposition"). Here we intend a critical review of the foregoing in an effort to draw conclusions that could serve as vehicles for future activity.

[B.] Evaluation

In *The Ascent of Man*, J. Bronowski wrote,

> "We are a scientific civilization: That means a civilization in which knowledge and its integrity are critical."[94]

Too often, we believe, the behaviorally based sciences have posited propositions as fact or law with insufficient evidence. The result has not been good.[95] This treatise attempted to avoid such pitfalls, in part by its prominent label as a "theory." Furthermore, throughout its development we sought to use terminology that reflected its conjectural nature. And finally, here, we propose to evaluate our efforts.

Critique is the normal process step which follows the consideration of a premise and subordinate arguments.[96] So while we are certain almost all readers will take issue with some

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point(s) in our treatise, the items to follow are our own. They are presented in two parts - "support" and "difficulties."

[B.1.] Support

There are a number of particulars which support The Theory. That is, it contains features which lead us to believe that its tenets are essentially correct. These shall be itemized:

First and foremost, The Theory of Behavior has the apparent ability to explain phenomena. Those pieces of the environmental pie which one logically expects to fit such a system are, in fact, accommodated. The Theory of Behavior provides explanations for the things that we see. It has an element of face validity.

Second, the sphere of The Theory of Behavior seems to fit together without contortion or contrivance. It has no constants, fudge factors, restrictions, restraints or qualifiers. In fluid, interactive natural systems, which have evolved over the millennium, this characteristic would be fundamental.

Third, it appears to have symmetry. It flows naturally. Nature and natural systems suggest a rhythm of logical, interrelated loops. For example, if people are natural physical beings, then we would expect them to obey laws that apply to all physical entities. The Theory of Behavior supports such contentions.

Fourth, its core mathematics is relatively simple. It is clean and unencumbered. Such is the case for most natural phenomena, and there are scientists who believe it's a requirement of nature.

Hawking, for example, reaffirmed this point in saying -
> "...the grand unified theory is presumably compact and elegant in mathematical terms. There ought to be something special and simple about the theory of everything."[97]

Kauffman echoes this, as well -
> "...beautifully ordered features of pattern formation may well rest on very simple general laws."[98]

Nature gives indications that it avoids involved, intricate, complex logic relationships.

Fifth, it is the kind of system we expect from nature - short logic trains, high manipulative power, great flexibility, wide adaptability, great emphasis on efficiency. It is a strategic system of survival.

Sixth, it is largely verifiable. Many of the tenets of The Theory of Behavior can be subjected to application and experiment and thus be tested. Additionally, The Theory raises many questions. This is relevant to the belief that a good theory, by necessity, raises as many questions as it answers - gain comes from the direction a theory gives the questioning, and the format it presents for their verification.

Seventh and finally, it is all-encompassing. We know of no other mathematical design that can address the full range of behavioral phenomena. Whether or not our interpretations of prior experimental conclusions were correct is as relevant as the fact that these could be considered in simultaneity. This adhesion of disparate disciplines to a behavioral common

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denominator has, more than anything else, led us to the conviction that within B-Set there's a germ of validity.

[B.2.] Difficulties

In addition to the support just noted, there are a number of difficulties: The process of development, which resulted in The Theory of Behavior, exposed questions and issues which attack our confidence in its accuracy. Let's now identify these items:

First, The Theory of Behavior remains to be proved. It has benefited from practically no design-specific research. As a result, as a virtually pure theoretical construct, it must be approached with skepticism.

Second, it was written as an individual effort - outside academia. In this day and age, technical scientific work seems confined to university or "institute" systems. While this author has had some such affiliations, this was not the case during the writing of this treatise. The effect of this goes beyond simple access to academic editing and publishing. Rather, in transdisciplinary topics such as The Theory, the availability of expert insight and assistantship legwork helps reduce much error. Because of this, fundamental inaccuracies probably crept into our treatise, and maybe these will prove fatal.

Third, The Theory of Behavior annexes a large piece of territory - directly all of human behavior and indirectly science and natural experience. Taking this on would be presumptuous even in the best of circumstances. Here, we consider it clearly tenuous - has something been overlooked? Have things been interpreted incorrectly? Has the author's knowledge of tangential disciplines (being at basic levels) skewed observations causing fundamental error or oversight? Such questions cannot be dismissed.

Fourth, in talking of human behavior we are talking about ourselves. Writing this treatise required considerable, difficult introspection. Was this sufficient to purge bias? Does The Theory present what is, or does it present what the author believes reality to be? While attempts were made and techniques employed to avoid such pitfalls, we cannot be certain they were successful.

Fifth, The Theory treads on many toes. We are not iconoclastic - we do not seek to attack cherished beliefs, *per se*. On the contrary, as mentioned earlier, many dedicated scientists have made significant contributions. And the beliefs people hold are often for good reasons. It is with trepidation, therefore, that we contradict that which is established, and it causes us to question what we have done.

Sixth, what The Theory suggests is a quantum leap. Taking such giant steps, however, is not the way of science at present.[99] Rather, the current mode is to study all the nuances of a subject until that subject is "complete," and then move on. Nevertheless, having taken large conceptual jumps in our treatise, we wonder if something of significance was skipped.

Seventh, the apprehension of a unified natural design would necessarily be on the periphery of human ability. In fact, several authors have questioned whether it will be possible to disclose this design at all - citing special problems, like its self-creation.[100] As a result, we must conclude that the mental gymnastics involved in developing The Theory of Behavior were

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likely on the edge of this author's capacity. Maybe, in fact, a correct theory would be beyond anyone's ability and what is presented is a truncation of the proper design.

Eighth, we have concerns about our use of logic. Did we do things which led to incorrect conclusions? That is, did we do something like: birds fly, airplanes fly, therefore airplanes are birds? While attempting to check for this type of error, our system was stretched to points where we cannot be sure such forms were avoided.

Ninth, there is a nagging possibility that The Theory presents a truism, and as such says nothing. That is, like a statement saying, "everything is what it is." Along similar lines is the idea that we have devised something so flexible it becomes meaningless. But these are questions of value and application which cannot be answered by us.

Tenth and finally, we have some specific reservations about The Theory, *per se*. Theories, by definition, are built on conjecture. While suggesting a structure, they require design specific research to verify the precepts and establish the confidence which sustains the investment of serious consideration. In reviewing our text, many propositions are open to question. But in sum, all aspects of The Theory of Behavior could be legitimately explored and justifiably questioned. For in essence, that's what a theory is all about.

[C.] Conclusion

To date, there had not been a proposed unified theory of behavior. But William H. Brock, in his *History of Chemistry* noted-

"Historians of science are the first to stress that any theory, however erroneous in later view, is better than none."[101]

Furthermore, while it cannot be concluded that The Theory of Behavior is correct as presented, it would not become law by rhetoric or discourse. As asserted by D.C. Dennett -

"In the end we must return to the rigorous methods of hard science - the experiments, deductions, and mathematical analyses - to keep the speculations honest. These methods provide raw materials for suggesting and testing hypotheses, and even serve often as powerful engines of discovery in their own right."[102]

So, it will be seen if The Theory is conclusive. Nevertheless, the presentation of a conclusive law of behavior was not our objective.

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[D.] Objectives

In Chapter II we stated that the objective of this treatise was "To synthesize a theory of behavior and to test it as far as it permits."

In pursuing this, we considered the possibility that an explanation of behavior could be comprehensive (incorporating every realm of behavior - aberrant, typical, etc.); it was subsumed that such a proposition could be devised; and implied that sufficient information existed to conduct a competent inquiry. Furthermore, it was suggested that the validity of such a design could be tentatively evaluated by its ability to respond to the totality of behaviorally reliant experience.

Additionally, as we progressed, a number of other paths were considered: to identify a possible explanation for observable behavior phenomena; to define the potential scope of behavioral theory; to highlight problems and ineffectiveness within existing methodology; to call attention to those behavioral concepts with potential to contribute beyond current applications; to be a proponent of scientific procedure in behavioral science based disciplines; to advocate transdisciplinary coordination; to show that a theory of behavior would be beneficial; to encourage and promote the belief that a unified theory of behavior is possible.

[E.] Discussion

There are some who believe that a scientific study of human behavior makes us somehow less (as if nature loses wonder when we realize it conforms to laws of physics). Some believe that mystical, magical or supernatural factors directly intervene in what we do. Others hold that the vast possibilities of human experience defy quantification (ignoring the role of probability). And then there are those who (with no shortage of hubris) believe we represent the boundary condition of difficulty.

We do not accept these contentions.

Currently, there are many issues that confront humankind. A significant percentage of these involve our behaviors. But if we are ever to resolve our problems we must know more. There is no reason that we cannot have environmental responsibility and full employment; a comfortable lifestyle for all plus incentives for extraordinary achievement; security in our homes and neighborhoods with the preservation of individual freedoms; accommodation between scientists and theologians; widely available nutritional foods and attractive consumer products coexisting with the preservation of natural environments; religious tolerance and the accommodation of disparate beliefs; harmonious racial/ethnic cohabitation and the enjoyment of cultural variety; appreciation of divergent points of view; profits for the investment of time, effort and resources; and a secure world without massed force.

If The Theory of Behavior is correct, then the requirements of zero-sum observations are fallacious. The original Malthusian-Darwinian concepts of nature's mutual exclusivity are

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incorrect.[103] Or as Nietzsche put it so quaintly - "One should not mistake Malthus for nature."[104] Nature, as we have suggested, is flexible, adaptive and accommodating. It promotes and encourages symbiosis. People too can do this. Angus Armitage (University College, London) observed -

> "Once men have reached the scientific stage of development, they realize that success in living does not depend upon coaxing or forcing nature to do what we want. It depends upon understanding nature's laws, and in making use of them to serve human purposes."[105]

However, to do so we will need to become more effective; and to become more effective, we will need a theory of behavior.

Humankind, over its history, has made major strides. But clearly there is much left to do. And clearly something else is needed. Precisely what more is needed was considered by Noble Laureate physicist Murray Gell-Mann, as reported by Waldrop -

> "'We *need* cross-cultural ferment', said Gell-Mann. 'Of particular importance may be discoveries about how [our own culture can] restrain the appetite for material goods and substitute more spiritual appetites.' In the long run, he said, solving this dilemma may require much more than sensitivity. It may require profound new developments in the behavioral sciences."[106]

[F.] Proposition

Hawking, in *A Brief History of Time*, made the following observation -

"We already know the laws that govern the behavior of matter under all but the most extreme conditions. In particular we know the basic laws that underlie all of chemistry and biology. Yet we certainly have not reduced these subjects to the status of solved problems; we have, as yet, had little success in predicting human behavior from mathematical equations! So even if we do find a complete set of basic laws, there will still be in the years ahead the intellectually challenging task of developing better approximation methods, so that we can make useful predictions of the probable outcomes in complicated and realistic situations. A complete consistent unified theory is only the first step: our goal is a complete *understanding* of the events around us, and of our own existence.[107]

This treatise suggests one platform from which to consider the remaining leg(s) of the scientific agenda. In time, it may be found that The Theory is correct in its entirety, or aspects are correct, or the concept of such a theory is correct; or none, part, or some combination of the above.

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But to know we must try. What we would like to suggest is a direct exploration of the premise that there does exist a unified postulate of behavior. We further propose that B-Set serve as the springboard for this inquiry, as it's currently the only extant proposal of a universal mathematical behavioral design. In the long run however, the thing which will determine if The Theory of Behavior contributes shall simply be whether or not -

$$B_{TheTheoryOfBehavior} > B_n.$$

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<u>Topical Outline</u>

Behavior's Common Denominator
The Theory of Behavior

by
D.M. Chabon

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Dedication
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Bibliography:

A treatise like The Theory of Behavior which evolved over many years, benefitted from a lifetime of reading. As a result we've tried to cite sources whether they shaped our thinking in specific ways, or contributed indirectly through some perspective that applied to our design. We tried to be inclusive. It must be noted, however, that the listing of a text does not mean support - either for our theory or for the cited authors' concept(s). We often found that a problem, a question, or an inconsistency, were as helpful as an accepted fact.

Ackrill, J. L. (editor) A *New Aristotle Reader.* Princeton: Princeton University Press, 1987.

Alinsky, S.D. *Rules for Radicals*. New York: Vintage Books, 1989.

Allport, G. W. *The Nature of Prejudice.* Garden City, New York: Anchor Books, 1958.

Ardrey, R. *The Territorial Imperative.* New York: Dell Publishing Co., Inc., 1966.

Argyris, C. *Management and Organizational Development.* New York: McGraw-Hill Book Company, 1971.

Armitage, A. *The World of Copernicus.* New York: Mentor Books, 1951.

Attenborough, D. *Journeys to the Past.* Harmondsworth, Middlesex, England: Penguin Books Ltd., 1983.

Bahm, A. J. *The Heart of Confucius.* New York: Harper & Row, Publishers, 1971.

Baldamus, W. "Type of Work and Motivation." *British Journal of Sociology*, Vol. 2, 1951, pp. 44-58.

Barrow, J.D. *Pi in the Sky, Counting Thinking and Being.* Boston: Little Brown & Co. 1992.

Barrow, J. D. and Silk, J. *The Left Hand of Creation*. New York: Oxford University Press, 1993.

Be'eri, E. *Army Officers in Arab Politics and Society*. Jerusalem: Israel Universities Press, 1969.

Benedict, R. *Patterns of Culture*. New York: Mentor Books, 1960.

Benner, E. *Be Like the Fox, Machiavelli in his World*. New York: W.W. Norton & Co, 2017.

Berkeley, G. (Turbayne, C. M. Editor and author of introduction) A *Treatise Concerning the Principles of Human Knowledge.* Indianapolis: The Bobbs-Merrill Company, Inc., 1957.

Berlin, I. (editors Hardy, H and Hausheer, H.) *The Proper Study of Mankind*. New York: Farrar, Straus and Giroux, 1997.

Berne, E. *What Do You Say After You Say Hello?* London: Corgi Books, 1975.

Bettelheim, B. *Love is Not Enough*. New York: Collier Books, 1965.

Bettelheim, B. *The Children of the Dream.* New York: Avon Books, 1970.

Bockman, V. M. "The Herzberg Controversy." *Personnel Psychology*, No. 24 (1971), pp. 155-189.

Boorstin, D. J. *The Image.* New York: Vintage Books, 1992.

Brayfield, A. H. and W. H. Crockett. "Employee Attitudes and Employee Performance." *Psychological Bulletin*, Vol. 52, 1955, pp. 396-424.

Brill, A. A. (translator and editor) *The Basic Writings of Sigmund Freud.* New York: Random House, Inc., 1938.

Brock, W. H. *The Norton History of Chemistry.* New York: W. W. Norton & Company, 1993.

Bronowski, J. *Science and Human Values.* New York: Harper & Row Publishers, 1965.

Bronowski, J. *The Ascent of Man.* London: British Broadcasting Corporation, 1973.

Buber, M. *Good and Evil.* New York: Charles Scribner's Sons, 1952.

Butcher, H. J. *Human Intelligence.* London: Methuen & Co Ltd., 1968.

Carroll, H. A. *Mental Hygiene - The Dynamics of Adjustment.* Englewood Cliffs, N. J.: Prentice-Hall Inc., 1964.

Carroll, L. *The Complete Works of Lewis Carroll.* New York: Random House, Inc., The Modern Library, (no date given).

Carter, J. *Nasty People.* Chicago: Contemporary Books, 1989.

Cary, J. (editor) *Eye-Witness to History.* Cambridge, Massachusetts: Harvard University Press, 1988.

Chalmers, D.J. *The Conscious Mind, In Search of a Fundamental Theory*. New York: Oxford University Press, 1996.

Churchland, P.M. *The Engine of Reason, the Seat of the Soul, A Philosophical Journey into the Brain*. Cambridge MA: MIT Press, 1996.

Cleaver, E. *Soul on Ice*. New York: Delta Publishing Co., 1968.

Cohen, M. R. *Reason and Law.* New York: Collier Books, 1961.

Commager, H.S. *The American Mind, An Interpretation of American Thought and Character Since the 1880's*. New Haven: Yale University Press, 1953.

Copeland, J. *Artificial Intelligence, A Philosophical Introduction*. Malden, MA: Blackwell Publishing, 1993.

Coughlan, G. D. and Dodd, J. E. *The Ideas of Particle Physics*. Cambridge: Cambridge University Press, 1991.

Creighton, J. E. *An Introductory Logic*. New York: The Macmillan Company, 1922.

Curtis, M. (editor) The *Great Political Theories* (Volume I). New York: Avon Books, 1961.

Curtis, M. (editor) The *Great Political Theories* (Volume II). New York: Avon Books, 1962.

Crick, F. *The Astonishing Hypothesis, The Scientific Search for the Soul*. New York: Simon & Schuster, 1994.

Darwin, C. (Burrow, J. W., editor and author of introduction) *The Origin of Species*. London Penguin Group, 1968.

Darwin, C. *The Expression of the Emotions in Man and Animals*. Chicago: The University of Chicago Press, 1965.

Davies, P. C. W. and Brown, J. *Superstrings.* Cambridge: Cambridge University Press, 1995.

Dennett, D.C. *Consciousness Explained*. Boston: Little Brown & Co. 1991.

De Quincey, T. (Hayter, A. editor and author of introduction) *Confessions of an English Opium Eater.* Harmondsworth, Middlesex, England: Penguin Books Ltd., 1971.

Derber, M. *Research in Labor Problems in the United States*. New York: Random House, Inc., 1967.

Des Pres, T. *The Survivor, An Anatomy of Life in the Death Camps*. New York: Pocket Books, 1977.

Diamond, J. *Collapse, How Societies Choose to Fail or Succeed*, New York: Penguin Group, 2005.

Dobzhansky, T. *Mankind Evolving.* New Haven: Yale University Press, 1962.

Dozier, Jr., R.W. *Codes of Evolution.* New York: Crown Publishers, Inc., 1992.

Drucker, P. F. *Management - Tasks, Responsibilities, Practices*. New York: Harper & Row, 1974.

Dyer, W. G. *Insight to Impact*. Provo, Utah: Brigham Young University Press, 1976.

Edwards, A. L. *Techniques of Attitude Scale Construction*. New York: Appleton-Century-Crofts, Inc., 1957.

Eisenstadt, S. N. *Israeli Society.* London: Weidenfeld and Nicolson, 1967.

Farber, L.H. *Lying, Despair, Jealousy, Envy, Sex, Suicide, Drugs, and the Good Life.* New York: Harper & Row, 1976.

Farber, L.H. (editors Boyers, R. and Farber, A.) *The Ways of the Will*, Basic Books, 2000.

Fabun, D. (editor) "The Corporation as a Creative Environment." *Kaiser Aluminum News,* Vol. 2, No. 2.

Feynman, R. P., Leighton, R. B., Sands, M. *The Feynman Lectures on Physics - Quantum Mechanics* (Volume III). Reading, Massachusetts: Addison-Wesley Publishing Co. Inc., 1965.

Ford, R. N. *Motivation Through the Work Itself*. American Management Association, Inc., 1969.

Frankfort, H. et.al. *Before Philosophy, The Intellectual Adventure of Ancient Man*. Baltimore MD: Penguin Books. 1951.

Frankl, V. E. *Man's Search for Meaning: An Introduction to Logotherapy.* New York: Pocket Books, 1963.

Frazer, J. G. *The Golden Bough - The Roots of Religion and Folklore.* New York: Avenel Books, 1981.

Fraser, G. "Fund Talk: The Manager's Overview," in *Fidelity International Equity Funds Annual Report*. October 31, 1993, page 7.

French, A. P. (editor) *Einstein, A Centenary Volume*. Cambridge, MA: Harvard University Press, 1979.

French, W. L. and Bell, C. H. *Organization Development.* Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1973.

Gaddis, J.L. *On Grand Strategy*. New York, Penguin Press, 2018.

Gardner, H. "Beyond Piaget" New York Times. October 23,1988.

Gell-Mann, M. *The Quark and the Jaguar, Adventures in the Simple and the Complex*. New York: W.H. Freeman & Co. 1994.

Gibbon, E. *The Decline and Fall of the Roman Empire.* New York: Dell Publishing Co., Inc., 1963.

Giese, W. J. and H. W. Ruter. "An Objective Analysis of Morale." *Journal of Applied Psychology*, Vol. 33, No. 5 (October, 1949), pp. 421-427.

Gladwell, M. *Talking to Strangers, What We Should Know about the People We Don't Know.* UK: Allen Lane, 2019.

Glasser, W. *Positive Addiction.* New York: Harper & Row, Publishers, 1976.

Gleick, J. *Chaos.* New York: Penguin Books, 1987.

Gribbin, J. *In the Beginning*, *The Birth of the Living Universe*. Boston: Little Brown & Co. 1993.

Halpin, A. W. "The Leadership Behavior and Combat Performance of Airplane Commanders." *Journal of Abnormal and Social Psychology*, Vol. 49, No. 1 (January, 1954), pp. 19-22.

Hamper, B. *Rivethead.* New York: Warner Books, Inc., 1991.

Hampshire, S. (editor and author of commentary) The *Age of Reason - The 17th Century Philosophers.* New York: Mentor Books, 1956.

Harari, N.H., *21 Lessons for the 21st Century*. London: Vintage, 2018.

Harari, N.H., *Sapiens, A Brief History of Mankind*. New York: Harper Collins, 2015.

Haugeland, J. Mind Design II. Cambridge MA: The MIT Press, 1997.

Hawking, S. W. *A Brief History of Time.* Toronto: Bantam Books, 1988.

Hawking, S. W. *Black Holes and Baby Universes and Other Essays.* New York: Bantam Books, 1993.

Hawking, S.W. *God Created the Integers*. Philadelphia: Running Press, 2005.

Heilbroner, R.L. *The Worldly Philosophers, Third Edition*. New York: Simon and Schuster, 1967.

Herzberg, F. "One More Time: How Do You Motivate Employees?" *Harvard Business Review,* January-February, 1968. pp. 53-62.

Hoffer, E. *The True Believer*. New York: Mentor Books, 1958.

Hoffmann, B. *The Strange Story of the Quantum.* Harmondsworth, Middlesex, England: Penguin Books Ltd., Pelican Books edition, 1963.

Hofstadter, D. *I am a Strange Loop*. New York: Basic Books, 2007.

Hofstadter, D. R. and Dennett, D. C. (editors and commentators) *The Mind's I.* Toronto: Bantam Books, 1981.

Hofstadter, D. R. *Gödel, Escher, Bach: An Eternal Golden Braid.* New York: Vintage Books, 1980.

Holland, J.A. *Adaptation in Natural and Artificial Systems*. Cambridge, Massachusetts: The M.I.T. Press, 1992.

Holton, G. "Constructing a Theory: Einstein's Model." *The American Scholar*, Vol.48, No.3 (Summer 1979) pp. 309-340.

Hulin, C. L. and Smith, P. C. "Sex Differences in Job Satisfaction." *Journal of Applied Psychology*, Vol. 48, No. 2 (1964), pp. 88-92.

Huxley, A. *The Doors of Perception*. New York: Harper & Row, Publishers, 1957.

Isenberg, N. and Bursten, A. *The Problem of Democracy*. New York: Viking, 2019

Johanson, D. and Shreeve, J. *Lucy's Child.* New York: William Morrow and Company, Inc., 1989.

Johnson, G. *Machinery of the Mind, Inside the New Science of Artificial Intelligence*. New York: Times Books, 1986.

Judson, H. F. *The Eighth Day of Creation.* New York: Simon and Schuster, 1979.

Kant, I. (Bernard, J. H., translator and author of introduction) *Critique of Judgment*. New York: Hafner Press, 1951.

Katz, D. "Morale and Motivation in Industry," in W. Dennis, *Current Trends in Industrial Psychology.* Pittsburgh: University of Pittsburgh Press, 1949.

Katz, D., Maccoby, N., and Morse, N. *Productivity, Supervision and Morale in an Office Situation: Part I.* Ann Arbor: University of Michigan, Survey Research Center, Institute for Social Research, 1950.

Katzell, R. A., Barrett, R. S. and Parker, T. C. "Job Satisfaction, Job Performance, and Situational Characteristics." *Journal of Applied Psychology*, Vol. 45, No. 2 (April, 1961), pp. 65-72.

Kauffman, S.A. *The Origins of Order.* Oxford: Oxford University Press, 1993.

Kautilya. (Olivelle, P., translator) *Arthashastra*. Oxford: Oxford University Press, 2013

Kelly, W. C. and Miner, T. D. *Physics.* Boston: Ginn and Company, 1967.

Kepner, C. H. and Tregoe, B. B. *The Rational Manager.* Princeton, N. J.: Kepner-Tregoe, Inc., 1967.

King, J. C. and McGilvray, J. A. *Political and Social Philosophy, Traditional and Contemporary Readings.* New York: McGraw-Hill Book Company, 1973.

Kirby, P. G. "Productivity Increases Through Feedback Systems." *Personnel Journal*, October 1977, pp. 512-515.

Kissinger, H. *World Order*. New York: Penguin Books, 2014.

Korman, A. K., *et al.* "More Is Not Better: Two Failures of Incentive Theory." *Journal of Applied Psychology*, Vol. 66, No. 2, pp. 253-259.

Krauss, L. M. *The Fifth Essence*. New York: Basic Books, 1989.

Kyburg, Jr., H. E. *Science and Reason.* New York: Oxford University Press, 1990.

Laird, D. "Why Everything is All Loused Up, Really." *Training in Business and Industry*, March 1971, pp. 52-55.

Landsberger, H. A. *Hawthorne Revisited*. Ithaca, New York: Cornell University, 1958.

Lapp, R. E. *Roads to Discovery.* New York: The New American Library, Inc., 1960.

Leoni, L. *Fish is Fish.* Middlesex, England: Puffin Books, 1972.

Likert, R. "Developing Patterns in Management." *Personnel Management*, Vol. 38, No. 337 (September, 1956), pp. 146-161.

Linden, D.J. *Unique, The New Science of Human Individuality,* New York: Basic Books, 2020.

Lippitt, G. L. *Individuality and Teamwork.* Washington, D. C.: Leadership Resources, Inc., 1964.

Livingston, J. S. "Myth of the Well-Educated Manager." *Harvard Business Review*, January-February 1971, pp. 79-89.

Longair, M. S. *Theoretical Concepts in Physics.* Cambridge, England: Cambridge University Press, 1984.

Lorenz, K.Z. (Translated by Wilson, M.K.) *King Solomon's Ring*. Great Britain: The Reprint Society, 1953.

Lowenstein, J. M. "Can We Wipe Out Disease?" *Discover*, Vol. 13, No. 11 (November 1992), pp. 120-125.

Luthans, F., *et al.*, "An Experimental Analysis of the Impact of Contingent Reinforcement on Salespersons' Performance Behavior." *Journal of Applied Psychology*, Vol. 66, No. 3, pp. 314-323.

Lux, K. *Adam Smith's Mistake*. Boston: Shambhala Publications, Inc., 1990.

Maccaby, M. *The Gamesman*. New York: Simon and Schuster, 1976.

Machiavelli, N. *The Prince*. New York: Oxford University Press, Inc., 1952.

Machiavelli, N. *The Discourses*. New York: Penguin Books, 1970.

Mahler, W. R. *Diagnostic Studies*. Reading, Massachusetts: Addison-Wesley Publishing Company, 1974.

Maimonides, M. (Pines, S., translator and author of introductory material) The *Guide of the Perplexed (Volumes I and II)*. Chicago: The University of Chicago Press, 1963.

Malamud, B. *The Natural*. New York: Dell Publishing Co., Inc., 1965.

Manuso, J. S. "Executive Stress Management." *The Personnel Administrator*, November 1979, pp. 23-26.

Marcuse, H. *One-Dimensional Man*. Boston: Beacon Press, 1964.

Margolis, H. *Paradigms and Barriers, How Habits of Mind Govern Scientific Beliefs*. Chicago: The University of Chicago Press, 1993.

Maslow, A.H. *Religions, Values, and Peak-Experiences*. Harmondsworth, Middlesex, England: Penguin Books, Ltd., 1976.

Masserman, J. H. *Theory and Therapy in Dynamic Psychiatry*. New York: Jason Aronson, 1973.

McClelland, D. C. and Winter, D. G. *Motivating Economic Achievement*. New York: The Free Press, 1969.

McGregor, D. M. "The Human Side of Enterprise." *The Management Review,* November 1975.

Milne, L. J. and Milne, M. *The Senses of Animals and Men*. Harmondsworth, Middlesex, England: Penguin Books Ltd., 1962.

Minsky, M. *The Society of Mind*. New York: Simon & Shuster, 1986.

Montague, A. *Man: His First Million Years*. New York: Signet Books, 1962.

Morris, D. *The Naked Ape*. New York: McGraw-Hill Book Company, 1967.

Morris, R. *The Edges of Science*. New York: Prentice Hall, 1990.

Morse, D. and Warner, A. W. (editors) *Technological Innovation and Society.* New York: Columbia University Press, 1966.

Myers, M. S. "Conditions for Manager Motivation." *Harvard Business Review*, January-February 1966, pp. 58-71.

Myers, M. S. "Every Employee a Manager." *California Management Review*, Spring 1968, pp. 9-20.

Nagle, B. F. "Productivity, Employee Attitude, and Supervisor Sensitivity." *Personnel Psychology*, Vol.7, No. 2 (Summer, 1954), pp. 219-233.

Neill, A.S. *Summerhill, A Radical Approach to Child Rearing*. New York: Hart Publishing, 1960.

Nietzsche, F. (Hollingdale, R. J., translator and author of introduction and commentary) *Twilight of the Idols and The Anti-Christ.* Harmondsworth, Middlesex, England: Penguin Books Ltd., 1968.

Noel, D. (editor) *Seeing Castaneda, Reactions to the 'Don Juan' writings of Carlos Castaneda*. New York: G.P. Putnam & Sons, 1976.

Odiorne, G. S. "How to Succeed in MBO Goal Setting." *Personnel Journal*, August 1978, pp. 427-429.

Odiorne, G. S. *Management Decisions by Objectives.* Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1969.

O'Leary, J. "Adapting to Climate Change, Phenotype Plasticity." *Massachusetts Wildlife*, Vol. LXII No.4, 2012, pp. 8-10.

Orwell, G. *Animal Farm*. Harmondsworth UK: Penguin Books, 1972.

Palgi, M., *et al. Sexual Equality: The Israeli Kibbutz Tests the Theories*. Norwood, Pa.: Norwood Edition, Kibbutz Studies Book Series, 1983.

Pariser, E. *The Filter Bubble*. New York: Penguin Books, 2011.

Pelikan, J. *The Melody of Theology.* Cambridge, Massachusetts: Harvard University Press, 1988.

Penrose, R. *Shadows of the Mind*. Oxford: Oxford University Press, 1994.

Penrose, R. *The Emperor's New Mind.* New York: Oxford University Press, 1998.

Perlman, S. *A Theory of the Labor Movement.* New York: Augustus M. Kelley, 1928.

Peters, T. J. and Waterman, Jr., R. H. *In Search of Excellence - Lessons from America's Best-Run Companies.* New York: Harper & Row, Publishers, 1982.

Pfeiffer, J. E. *The Emergence of Man* (Second Edition). New York: Harper & Row, Publishers, 1969.

Pfeiffer, W. J. and Jones, J. E. *Organization Development: Selected Readings*. LaJolla, CA: University Associates, 1977.

Plato (Rouse, W. H. D. translator; Warmington, E. H. and Rouse, P. G. editors) *Great Dialogues of Plato.* New York: Mentor Books, 1956.

Quinn, R. P. and R. L. Kahn. "Organizational Psychology," in P. R. Farnsworth, ed., *et al.*, *Annual Review of Psychology*, Vol. 18 (1967), Palo Alto, CA: Annual Reviews Inc., 1967, pp. 437-466.

Radetsky, P. "How Did Life Start?" *Discover,* Vol. 13, No. 11 (November 1992), pp. 74-82.

Rand, A. *The Virtue of Selfishness*. New York: Signet Books, 1964.

Rayback, J. G. *A History of American Labor.* New York: The Free Press, 1966.

Restak, R. "Laughter and the Brain." *The American Scholar*, Summer 2013, pp. 18-27.

Roberts, P. *The Impulse Society, America in the Age of Instant Gratification*. New York: Bloomsbury Publishing Plc. (USA) 2014.

Rorty, R. *Contingency, Irony and Solidarity.* UK: Cambridge University Press, 1989.

Rorty, R. *Philosophy and the Mirror of Nature*. Princeton, N.J.: Princeton University Press, 1979.

Rosenthal, R. and Jacobson, L. F. "Teacher Expectations for the Disadvantaged." *Scientific American*, Vol. 218, No. 4 (April 1968), pp. 19-23.

Ruitenbeek, H. K. (editor and author of introduction) *Psychoanalysis and Contemporary American Culture.* New York: Dell Publishing Co., Inc., 1964.

Runcie, J. F. "By Days I Make the Cars." *Harvard Business Review*, May-June 1980, pp. 106-115.

Sagan, C. *The Dragons of Eden, Speculations on the Evolution of Human Intelligence*. New York: Ballantine Books, 1977.

Samuelson, P. A. and Nordhaus, W. D. *Economics* (Twelfth Edition). New York: McGraw-Hill Book Company, 1985.

Sartre, J.P. (Frechtman, B. translator) *Existentialism*. New York: Philosophical Library, 1947.

Sartre, J. P. (Williams, F., and Kirkpatrick, R. translators and authors of annotations and introduction) *The Transcendence of the Ego.* New York: The Noonday Press, Inc., 1957.

Sartre, J. P. *The Age of Reason*. Harmondsworth, Middlesex, England: Penguin Books Ltd., 1961.

Scharf, C. *The Copernicus Complex, Our cosmic significance in the universe of planets and probabilities*. New York: Scientific American/ Ferrar, Straus and Giroux, 2014.

Schleh, E. C. *Management by Results*. New York: McGraw-Hill Book Company, 1961.

Schrodinger, E. *What is Life? & Mind and Matter.* Cambridge: University of Cambridge Press, 1994.

Selltiz, C., *et al. Research Methods in Social Relations.* New York: Holt, Rinehart and Winston, 1966.

Sesonske, A. and Fleming, N. (editors) *Meta-Meditations: Studies in Descartes.* Belmont, CA: Wadsworth Publishing Company, Inc., 1965.

Siewiorek, D. P., Bell, C. G., Newell, A. *Computer Structures: Principles and Examples.* Singapore: McGraw-Hill Book Co., 1982.

Skinner, B.F. *A Matter of Consequences.* New York: Random House, 1983.

Skinner, B. F. *About Behaviorism.* New York: Alfred A. Knopf, 1974.

Skinner, B. F. *Science and Human Behavior.* New York: The Macmillan Company, 1953.

Skinner, B. F. *Walden Two.* New York: The Macmillan Company, 1962.

Silberman, C.E. *Crisis in the Classroom*, New York: Random House, 1970

Somers, J. "The Man Who Would Teach Machines to Think." *The Atlantic*, Vol. 312, No. 4, November 2013, pp. 90-100.

Spinoza, B. (Elwes, R.M.H., translator) *A Theologico-Political Treatise* and *A Political Treatise.* New York: Dover Publications, Inc. 1951.

Spiro, M. E. *Children of the Kibbutz.* New York: Shocken Books, 1965.

Squire, J.R. (editor) *Survival.* New York: Scholastic Book Services, 1969.

Stebbins, G. L. *The Basis of Progressive Evolution.* Chapel Hill, N.C.: The University of North Carolina Press, 1969.

Stevens, C. M. *Strategy and Collective Bargaining Negotiation.* New York: McGraw-Hill Book Company, 1963.

Stewart, I. "Does Chaos Rule the Cosmos?" *Discover*, Vol. 13, No. 11 (November 1992), pp. 56-63.

Suzuki, S. *Zen Mind, Beginner's Mind.* New York: John Weatherhill Inc., 1970.

Tannenbaum and Schmidt "How to Choose a Leadership Pattern" *Harvard Business Review*, Original- March-April 1958; Reprint - May-June 1973, (51)3, pages 162-175, 178-180.

Tetlock, P.E., *Expert Political Judgment, How good is it? How do we know?* Princeton, N.J.: Princeton University Press, 2005.

Thompson, D. W. *The Manager - Understanding and Influencing Behavioral Change.* Chicago: Bradford Press Inc., 1974.

Triandis, H. C. "A Critique and Experimental Design for the Study of the Relationship between Productivity and Job Satisfaction." *Psychological Bulletin*, Vol. 56, No. 4 (July, 1959), pp. 309-312.

Triandis, H. C. "Notes on the Design of Organizations," in J. D. Thompson, *Approaches to Organizational Design*. Pittsburgh: University of Pittsburgh Press, 1966, pp. 57-102.

Turnbull, C. M. *The Mountain People.* New York: Simon & Schuster, 1972.

Tzu, S. (Griffith, S. B., translator and author of introduction; foreword by Hart, B. H. L.) *The Art of War.* Oxford, England: Oxford University Press, 1963.

Ulmer, M. J. *Economics - Theory and Practice.* Boston: Houghtem Miffin Company, 1965.

Velikovsky, I. *Worlds in Collision.* New York: Dell Publishing Co., 1967.

Von Clausewitz, C. (Graham, J.J., translator) *On War*. San Bernardino CA: Unpublished text version.

von Neumann, J. and Morgenstern, O. *Theory of Games and Economic Behavior* (Third Edition). Princeton: Princeton University Press, 1953.

von Neumann, J. *The Computer and the Brain.* New Haven: Yale University Press, 1958.

Vroom, V. H. and Deci, E. L. (editors) *Management and Motivation.* Harmondsworth, Middlesex, England: Penguin Books Ltd., 1970.

Vroom, V. H. *Work and Motivation*. New York: John Wiley and Sons Inc., 1964.

Waldrop, M. M. *Complexity.* New York: Simon & Schuster, 1992.

Wang, Y. "What is the Capacity of the Human Mind?" *Time Magazine*, September 8-15, 2014, p. 85.

Watson, B. *Bread and Roses*, New York, Viking 2005

Wells, G., *et al. Learning Through Interaction - The Study of Language Development*. Cambridge: Cambridge University Press, 1981.

Wertheimer, M. *Productive Thinking*. New York: Harper & Brothers, 1945.

Wilson, E.O. *On Human Nature*. Harvard University Press: Cambridge Massachusetts, 2001.

Wilson, E.O. *The Origins of Creativity*. New York: Liveright Publishing Co., 2017.

Wilson, R. C., *et al*. "Factors Influencing Organizational Effectiveness." *Personnel Psychology*, Vol. 6, 1953, pp. 313-325.

Wolchover, N. "Is Nature Natural?" *Quanta Magazine*, May 24, 2013 (electronic edition)

X, M. *The Autobiography of Malcolm X*. New York: Ballantine Books, 1999.

Zakaria, F., *The Post American World*. New York: W.W. Norton & Co. 2009.

The Author:

    I am an Applied Behavioral Scientist, both by certified academic training and by many, many years of work "in the field." I have tried OD, TA, MBO, most job enrichment designs, job enlargement, participation plans, incentive systems, reinforcement designs, and pretty much everything else the applied behavioral scientists could devise. I have tried this in the largest Fortune corporations, internationally, in trades, civic organizations, government, personally and in systems that were purported to be socialist. I have participated as an employee, a consultant, an observer, a manager and as a "technical expert". My specialty was originally industrial/organizational.

    But I began noting difficulties with this subject long ago, right after college, when an effort to do my job was followed by the realization that what I learned in graduate school was either wrong, or incomplete, or something - it just didn't work. Not well. Not reliably (like science should.) And further offerings from "experts" weren't much better. So, I tried to figure it out. And while questions came early, insights took longer:

    My professional career began as a Staff Associate in the large Midwest manufacturing facility of one of the biggest Fortune 500 Corporations. This complex of plants was the workplace of several thousand employees fabricating cable and wire switching equipment while personifying what literature had dubbed the "Blue Collar Blues." Management, as is often the case, was interested in maximizing productivity and sought techniques to accomplish that end. Being a large corporation with a history participating in behavioral science research we regularly were visited by high-end consultants who would advocate then apply their latest trend. But we never saw a sustained result, or any result of note. Another consultant would show up; old-timers would shake their heads; time would pass; not much would change; and I wondered why.

    Early work assignments allowed me to wander the shop floors. I liked it out there. I'd talk with operations, hang out with the crafts, drink coffee with supervisors and meet with managers and QC, and union reps too. Why were some work groups productive and some not? Some people more so than others? The machinery was constant. The organization was constant. The variable was the employee. But while the work environment was critical it was clearly only part of the picture. As one foreman reflectively put it, "…they bring more to work than their lunch."

    Of interest was Mike. I knew Mike because on joining the company my assigned desk in their 'sea of desks" was by chance directly in front of his desk. But then Mike was promoted to supervisor in the shops, and we lost touch for some time. Every now and then, though, someone would mention his name. People liked working for him. When he took over an operation productivity would jump, and quality would climb. Absenteeism and turnover became minuscule - notable results in that environment. And furthermore, it turned out that when he was transferred to a different department (due to a rotational system) his old group's performance would slide to factory norms while the new ones would climb. And even more enticing was that when management caught wind of his results and tried to institutionalize his "process" there was no change in overall plant performance. But Mike's groups continued to excel, and I wondered why.

The Theory of Behavior

The result of this was a career-long inquiry that resulted in the development of a white paper, called "Behavior's Common Denominator - The Theory of Behavior." It is available for downloading without obligation or charge at *thetheoryofbehavior.com*.

[Note: As my employers and affiliations were often my subjects, I do not cite them by name.]

Epilogue:

So, if The Theory of Behavior is essentially correct as we've presented then what is it? Is it a law? Of psychology? Biology? Physics? Where does it come from? Why do we have it? If it applies to big things and small things then how big and small does it go? How simple or complex? How specific or universal? Etc.

Notes:

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[1] Hawking (1988), page 168.

[2] Brock, page 32.

[3] As reported in Hofstadter (1981), page 460.

[4] Our bibliography offers many resources, as well as an overview of the discipline and related topics.

[5] See Waldrop, p.91.

[6] This line of thinking is the essence of that developed by the reputed founder of science, Greek philosopher Thales (640-546 B.C.). He is reported to have come to the conclusion that "...it does not in any way explain natural events to refer them to the action of the gods."(See Creighton, his page 365).

[7] For an interesting discussion of this see Hofstadter (1981), page 196. Also Nietzsche comes up with the points discussed here. See Nietzsche, page 195. Kant too expresses this idea. See Kant, pages 25 and 26. And Schrodinger, page 159.

[8] Some support for this can be seen in Margolis, page 36.

[9] See Skinner in Bibliography.

[10] In addition to the comment we cited from Socrates (Plato's "The Death of Socrates, 399 BC" in Cary, page 8) philosopher Jeremy Bentham in the late eighteenth century had similar ideas (see Lux, his page 163). Skinner revived these ideas in the 1950's (see Skinner's *About Behaviorism*).

[11] What we are saying is that, by definition technically, one is not punished by the absence of a reward, though acknowledge the sensation can be very similar. Not winning $1 million in the lottery is different than losing $1 million on GameStop.

[12] "Power," we define here, as the ability to induce change.

[13] See Vroom.

[14] See Triandis.

[15] There's a surprising amount of support for the presence of rank hierarchical valuations in natural systems. In addition to the oft quoted Maslow, see Kauffman (his pages 119 and 552)

and Holland (his page 33). Also we must recall that things like atomic weights in chemistry are relative values, see Brock (beginning on his page 135).

[16] Clustering seems to be one of those ubiquitous characteristics of natural distributions. There is some indirect evidence of support for this design and cluster concept. As an example, Kauffman notes "...local optima are not distributed randomly in genotype space but instead are near one another." See Kauffman, page 60. Also Barrow, page ix, where he discusses the presence of clustering in physical phenomena.

[17] See Enright page 290. In addition, Kant goes along with this idea, see Kant page 86.

[18] For a comprehensive discussion of prejudice see Allport, whose book provides good background and insight. We find there are infinite permutations of a prejudiced opinion and believe our design accommodates this condition.

[19] The presence of the concept of saturation in allied systems may be seen in Kauffman, page 145.

[20] For some discussion on this phenomenon see Boorstein (1992), page 64.

[21] Further information on the role of time and timing in this type of process appears in Holland, page 156. There's also a surprising amount of general information on the importance of time and timing in the development of behavioral systems. For starters see Kauffman, page 375.

[22] Note NY Times article 10/20/2019 p1 which discusses the activity of the tech billionaires.

[23] This type of idea is reflected in Holland's discussion of the cell assembly theories of D.O. Hebb. See Holland, page 60.

[24] See Kaufman

[25] From - https://www.merriam-webster.com/dictionary/behavioral%20science

[26] "Some Behavioral Science Measurement Concerns and Proposals" by John R. Nesselroade and Peter C. M. Molenaar. Multivariate Behavioral Research. 2016 Mar-Jun; 51(2-3): 396–412.Published online 2016 Jun - 10.1080/00273171.2015.1050481.

[27] Gregg Henriques, PhD. "The 'is psychology a Science' Debate" "Reviewing the ways in which psychology is and is not a science." *Psychology Today*, Posted Jan 27, 2016.

[28] The Guardian 11/06/2013

[29] See Kyburg p.181.

[30] "The doctrine that all events, including human action, are ultimately determined by causes external to the will. Some philosophers have taken determinism to imply that individual human beings have no free will and cannot be held morally responsible for their actions." Per Oxford Languages and Google- https://languages.oup.com/google-dictionary-en/

[31] See a similarity between this and the Heisenberg's Uncertainty Principle.

[32] [https://www.kennethmd.com/the-7-fundamental-human-needs/]

[33] See the Bibliography for the cited authors.

[34] See discussion of "need" and "reward" in Holland, pages 61-62. Holland (quoting Hebb) doesn't quite put it as we do. Nor does he actually say the exact same thing, but the germ of the same idea appears, to us, to be there.

[35] For one type of illustration, see Kauffman, page 635. Also see Brock, page 201.

[36] As an added thought, the above noted $B_x=B_y+B_z$ structure would accommodate some ability to do two things at once - like daydreaming and driving a car, walking and talking, watching television and knitting, etc. But in these cases our focus of attention seemingly jumps back and forth, and we're able to put the non-focused activity on an "automatic drive." This would limit simultaneous B's to activities that could run "automatically." We are hard pressed to imagine a pilot successfully landing a 747 at Heathrow while doing the Sunday New York Times crossword puzzle. "Automatic" B's are probably demoted to subordinate physiology. As a result, we continue to believe that our axiom citing the general mutual exclusivity of B-Sets is valid.

[37] Bronowski (1973), page 416.

[38] This being similar to the subject of behavior change, to be discussed shortly. To a large extent, learning is behavior change - but the two are not synonymous.

[39] Culture shock is a phenomenon which afflicts many people who change cultures - usually meaning a move to another country with a different language. The problem is that the valence of B-Set structure elements are oftentimes culture based, and therefore different in different lands. Thus, newcomers have difficulty assimilating - causing loneliness, depression, etc. Culture shock has been reported on a hit-and-miss basis in assorted literature. One is by Japanese psychiatrist Hiroaki Ota called *Travel Journal*. He calls his ailment "Paris Syndrome." Another is by E. Rivka called *Shock Absorption - A Survival Guide to Living in Israel*.

[40] There are hints in some literature which tend to support this reaction. For one, see Holland, page 48.

[41] We may now present the following insight. If a *C* has a low value because we know that it has a small probability of occurring, then our knowledge of the probability would

have a high C - we are highly certain of the outcome (low). Therefore, something with this construct would not conform to our definition of novelty since all subsets must have low C. The dilemma here is that most behavioral terms have not been well defined - "novelty" is one. There are many others, for example, accident, adventure, epiphany, miracle, etc. (E.g. A miracle is likely a high K with a C of zero! Etc.)

[42] See Holland, page 143.

[43] A technical overview of this topic is in Butcher.

[44] Dobzhansky, page 91.

[45] See *Jerusalem Post*. March 30, 1993. Page 3. Article titled "Study: Children's IQ tests receive unreliable scores," by Haim Shapiro.

[46] The metaphysical chicken-egg problematic nature of this statement is noted but must be deferred to a future discussion. For now, we assume as axiomatic that "In the beginning..." there was B-Set. We recognize that for many this may be a bit much to ask.

[47] In addition to Darwinian mutations, environments' effect is discussed in Linden (2020).

[48] See Harari's popular book *Sapiens* covers the subject in detail.

[49] We tend to use the tools we're familiar with.

[50] If the total explanation for the development of species is Darwinian, then the probability of life as we know it is nil (likened to a tornado whizzing through a junk yard and building a 747). Since we don't accept impossibilities, then Darwin is not complete and environment must in-fact specifically alter the species. Exactly how is beyond the scope of this document.

[51] See Diamond's *Collapse.*

[52] As often paraphrased from Grantland Rice.

[53] See Johanson, page 266

[54] See Huxley, page 12

[55] For a nice discussion of the record remixing business, see the *NY Times*, 8/30/1992, "Weekly Review", page 1E8.

[56] "Tide" is a much advertised, popular brand of American laundry detergent. "Cheer" too.

[57] *NY Times*, "Sports Section," 10/27/2019, page 4.

[58] This would seem to be a worthwhile, and interesting subject for further research.

[59] Not originally our quote, we heard this bantered around the offices over a period of years. Some attributed it to industrial psychologist Douglas McGregor, but we've been unable to locate this in a specific printed source of his.

[60] Discussion of this see *Nasty People* by Carter.

[61] See Berne for some discussion of transactional analysis technique.

[62] Our bibliography details these citations.

[63] Samuelson, page 25.

[64] From "Fund Talk: The Manager's Overview," in *Fidelity International Equity Funds Annual Report*. October 31, 1993, page 7.

[65] Lux, page 156. Reference to Lionel Robbins, Introduction, Philip H. Wicksteed, *The Common Sense of Political Economy* (London: George Routledge & Sons, 1933) p. xxi. The parenthetical comment is ours.

[66] See Gladwell, *Talking to Strangers*.

[67] The original identification of the areas of management appeared in the best-selling *Harvard Business Review* reprint, "How to Choose a Leadership Pattern," by Tannenbaum and Schmidt. See Bibliography.

[68] See Rayback's *A History of Labor*

[69] With help from former GE CEO "Neutron" (!) Jack Walsh. Really.

[70] One overview of this dilemma of managements appeared in the January-February 1994 edition of *Harvard Business Review*. See "Whatever Happened to the Take-Charge Manager?" by N. Nohria and J. D. Berkley, pages 128-137.

[71] Old line motivation techniques like job enrichment had successes when they stumbled into this active B_{task} arena.

[72] Kinsley, M. "Is Democracy Losing Its Romance?" *Time Magazine*, January 17, 1994, page 52.

[73] Harari, *21 Lessons,* page 110.

[74] See Berlin's concept of hedgehogs and foxes in *The Proper Study of Mankind*.

[75] See McLuhan in *Understanding Media.*

[76] See Alinsky, S. *Rules For Radicals*. Page 155.

[77] See King, pages 363-401 for some views on this topic.

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[78] Ibid., page 363.

[79] Ibid., page 371.

[80] See related sections in this text: "Learning", "Intelligence" and "Creativity". Of particular interest is the section on *K* mode learning, where the "ideal" student is characterized.

[81] We will not venture into the debate over "awareness isn't consciousness." We note use of the term awareness in every definition of consciousness. We believe the difference is semantics.

[82] See Turing, A. M. "Computing Machinery and Intelligence." In Hofstadter (1981) Chapter 4, pages 53-68. Also Penrose (1989) spends a great deal of time on the permutations of Turing machines and Turing tests.

Essentially, the Turing Test plots a person against a computer where the two must be deceptive about their identity. Unfortunately, people are all too good at deception and the computer loses. But B-Set allows a way to make computers deceptive - If the computer data bank holds that $x>y$, and if the pronouncement of that holding is given value B_{xy} ; then if winning a game is given value B_w , and if $B_w>B_{xy}$ (winning the game is more important than the truth); and if B_{yx} (artificial condition $y>x$) is seen as a subset vehicle to achieve B_w (search possible combinations of x and y for result that is greater than B_{xy}); then the computer will lie and say $y>x$.

Now if all this is structured in B-Set (with *R,P,C,S,K*) the computer will learn and over time, regularly tie the human on the test. We say tie (and not necessarily win) because what we are suggesting is that B-Set is the human computation, and not some superior configuration.

Of course, if the Turing game questioner can ask things like, "Tell me the length of your hair," or "Write me a poem about a spring day," then the computer must be educated in relevant human areas. (How many people can write a poem about a spring day?) Additionally, it must have the capacity to manipulate that data - seemingly beyond contemporary hardware capabilities. If however, we match a computer in B-Set with children of varying ages (a much more reasonable test) we'll get an indication of the true developmental level of our computers. We suspect it will be low.

[83] For more examples of this than one can possibly imagine (or tolerate) we recommend that classic by J.G. Frazer, *The Golden Bough*.

[84] An interesting article which brings up similar points appeared in *Scientific American*, October 1993. See "Simulating Brain Damage," by Hinton, G.E., Plaut, D.C., and Shallice, T. The article begins on page 76. Dozier also discusses this, see his page 169.

[85] For one example see Hofstadter (1981), page 353.

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[86] This story is totally fictitious. Any similarity to any real person or any real event is purely coincidental.

[87] For some critique of computer capabilities see Kauffman, pages 442-443. Also Traub, J.F. and Wozniakowski, H. "Breaking Intractability." In *Scientific American*, January 1994, pages 102-107.

[88] Any number of truisms can come into play. Here we symbolize the following: *Bds* (do something a motivational/energy truism); *Bdn* (do nothing - a passive truism); *Bte* (try elsewhere - i.e. give up); *Pe* (the punitive effort factor); *Bcre* (the propensity to seek creative solutions); etc.

[89] An interesting article that has many parallels to this idea appeared in *Harvard Business Review*, January-February 1994, pages 107-114, titled "The Fall and Rise of Strategic Planning," by H. Mintzberg. Of particular interest is the discussion on page 111 of the shortcomings of formal systems.

[90] The idea of computers simulating humans and thereby making mistakes was noted in a *Nature* news feature by Matthew Hudson dated March 3, 2021. "Robo-writers: the rise and risks of language generating AI".

[91] It has actually been reported that the game of chess is about at the level of today's best super-computers. For one such notation see the article featuring an interview with C. Koch called "What is Consciousness?" in *Discover Magazine*, November 1992, page 104.

[92] For some insight on this point see Horgan, J. "The Death of Proof." *Scientific American*, October 1993, page 99. Also see Penrose, pages 64-66, where he discusses some of the limits of algorithms.

[93] Hofstadter (1981), page 382.

[94] J. Bronowski (1973), page 432.

[95] There are many illustrations of this point. One is brought out in Waldrop's *Complexity* where John Reed (of Citicorp) discusses difficulties with economic models (starting on page 93). Time Magazine related more therapeutic difficulties (see edition No. 48, November 29, 1993) with articles on "Freud" and in the same edition an article called "Lies of the Mind."

[96] See Creighton, page 157.

[97] Hawking (1993), page 128.

[98] Kauffman, page 550. For similar ideas in chemistry see Brock, page xxv.

[99] See von Neumann (1953), page 7.

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[100] And some that says beyond our abilities.

[101] Brock, page 32.

[102] As reported in Hofstadter (1981), page 460.

[103] See Lux, page 146, where he reports that Darwin's concept of natural selection came directly from Malthus' *Essay on Population.*

[104] Nietzsche, page 75.

[105] Armitage, page 15.

[106] Waldrop, page 352.

[107] Hawking (1988), page 168.