Book Review

VLADIMIR A. LEFEBVRE, Algebra of Conscience.

Reviewed by JAMES T. TOWNSEND

The author is a Research Psychologist at the School of Social Sciences, University of California, Irvine. He obtained his Ph.D. in Psychology in 1971 from Moscow State University. Prior to coming to the United States, he was a research Scientist at the Central Mathematical Economics Institute of the Academy of Sciences, Moscow. His major research interests are formal models of human thought and ethical cognition.

The reviewer is a Professor of Psychology at Purdue University. His research interests center on questions of model equivalence, diversity, and testability, particularly in the areas of information processing, pattern recognition, and memory search. He has just published, with F. Gregory Ashby, Stochastic modeling of elementary psychological processes [Cambridge Univ. Press, New York, 1983].

Lefebvre begins with the idea of two distinct ethical systems. The first is based on the principle, to be made precise below, that compromise of good and evil is evil. Equivalently in the theory, confrontation of good and evil is good. We will call this System W; it founds the ethical structure of the Western World (the “first system” in Lefebvre’s terminology). The second ethical system follows the converse principle that compromise of good and evil is good, that is, confrontation of good and evil is evil. This we will call System S; it is the base of the Soviet ethical structure (the second system of Lefebvre).

There are two overriding themes developed in the book. One is simply the working out of theorems emanating from the definitions, axioms, and either of the above principles. The other is the attempt to persuade the reader that not only do the above principles, and by extension the various themes, describe real, if ideal people, but that System W really does represent the ethical norm of the present Western Society whereas System S represents that of the Soviet Union.

Lefebvre intends far more than an amusing logical game here. Not only does he feel that two types of systems pretty much exhaust those found in the world today, he comes close to claiming outright that the set of the two may be virtual cultural imperatives. That is, a society may come to have one or the other, but not both and not something else. It is made clear from the outset that these do stand for the ideal and that a country or an individual may possess each in some degree in real life, but one or the other principle dominates.

My plan is to offer the reader a tour of the central underpinnings of the structure.
as well as certain of the discoveries, bypassing by necessity the axiomatic details. Occasional questions and problems in addition to exceptional or captivating results will arise along the way. Although the itinerary is short, I believe it will aid the person wishing to read the book in addition to proffering a fairly decent idea of what the book is about to those with less time. Nevertheless, the reader looking for a quick overall evaluation may skip to the Discussion. It should also be mentioned that there is certain thought provoking material in the book that simply cannot be covered in a review of this type. An example is the analogy, developed in an appendix, between the present theory and some principles of quantum mechanics.

**Some Beginning Elements**

Let us begin by developing a little of the logic behind Lefebvre's rather ingenious and novel calculus. Consider the formula $a^w$ where "a" is a variable with $a = 1$ or $0$, and $W$ is a formula involving "a" and possibly another variable "b", the partner of "a". The "a" term here represents the environmental input to the individual or alternatively what he really is and is called the root and $W$ is the inner world, which itself may be multileveled in exponents. The inner world possesses various levels of self-reflection in "a" (himself) and his partner "b". When 0 or 1 is substituted for each of the variables (which may be "a" and/or "b") in $W$, then $W$ will equal 0 or 1 also. The simplest 2-level structure is $a^0$.

Now, $a^w$ is given an interpretation by the author in ordinary predicate calculus as $W \rightarrow a$; that is, $W$ implies $a$. We may then rewrite this in terms of Boolean algebra using an overbar as negation and + as nonexclusive "or", $a^w = \overline{W} + a$. $W$ will be a further formula, perhaps a single term as "a" or "b".

Already we have a small result. If we interpret $a = 1$ as "good" and $a = 0$ as "evil" then letting $a = 0$, we find that $a^0 = \overline{a} + a = 1 + 0 = 1$. Lefebvre sees this as meaning that evil aware of evil becomes good.

Next we note that if "a" in the $W$ part of $a^w$ equals the root "a", then the individual is said to have a correct image of himself. (This will be made a bit more specific below.)

More generally, when an interaction with another person is brought into play, the general formula can be expressed as $a^{A*}B$ by setting $W = A * B$. "A" is the higher order reflective world of "a" himself whereas "B" is "a"'s internal picture of his partner "b" as well as the way that "a" believes that the "b" internal reflective world is. The "*" denotes the interaction of "a" and "b" as "a" sees it; we return to it shortly. The complete situation including the objective interaction as well as "b" and "b"'s internal world, is expressed as $a^{A_1*B_1} * b^{A_2*B_2}$. However, much emphasis is on the internal world of an individual as in $a^{A*B}$. The sign of interaction, "*", is either "+" denoting disjunction as seen above or "-", logical conjunction (or equivalently Boolean multiplication).

We now arrive at the foundational axiom of the entire theory: "+" is interpreted as confrontation in System W (the Western Christian Society) but as compromise in
System S (Soviet society). Just the reverse is true for "·", which means compromise in System W and confrontation in System S. All societal effects of good and evil within Lefebvre's theory emanate from this axiom.

Now let us examine \( a + b \) and \( a \cdot b \). In System W, confrontation of good and evil is good and compromise of good and evil is evil so we set \(+ = \) confrontation and \( \cdot = \) compromise for then, if say, \( a = 1 \) and \( b = 0 \), \( 1 + 0 = 1 \) (i.e., confrontation of good and evil is good) but \( 1 \cdot 0 = 0 \) (compromise of good and evil is evil). In System S exactly the converse assignment is made: \(+ = \) compromise and \( \cdot = \) confrontation.

Consequently System S yields exactly the opposite result: compromise of good and evil is good \((1 + 0 = 1)\) and confrontation of good and evil is evil \((1 \cdot 0 = 0)\). It is rather fascinating to watch how this axiom ultimately winds into the seemingly paradoxical prediction that ethical status is high in System S (the Soviet) when one sees oneself in confrontation with an adversary whereas the contrary holds in System W (the Western).

Note that the earlier statement we analyzed, "evil aware of evil becomes good," is true for either system because exponentiation and implication have the same meaning in both systems. The same is true for certain other primitive Boolean expressions in their ethical interpretation. Another example is \( 0 + 0 = 0 \) which signifies that evil in confrontation with evil is evil in System W and evil in compromise with evil is evil in System S.

Now let us run through what appear to me to be some of the most significant results. Along the way, assumptions and other facets that appear a little hard to swallow will be mentioned. The order of treatment below corresponds roughly to the order of topics in the book starting at about Chapter 5 but it is not entirely so.

**Formulation of Ethical Status**

As prefaced above, when the "\( a \)" and "\( b \)" are replaced in the formula by values of 1 or 0, the resultant value is always a 1, representing "good," or 0, representing "evil." Thus, if \( a^W = 1 \) the individual overall, based on his internal world in league with the value of "\( a \)" is good and vice versa if the overall value is 0. The same is obviously true when values are substituted for "\( a \)" and "\( b \)" in \( b^W \). Furthermore, an overall interactional situation may be evaluated because \( a^W \cdot b^W \) will also be 0 or 1 when specific values for "\( a \)" and "\( b \)" are implemented in the formula.

A frequent strategy in the calculus is to assume some proportion of times that, say "\( a \)" takes on the value 1 and the remainder of the times it assumes the value 0 and then to average the ethical status of the individual cases to arrive at an overall status; this is easily extended to combinations of values of "\( a \)" and "\( b \)". An early result is that a two-tier individual with a correct image of himself always has a higher status than an individual with an incorrect image of himself, as in the simplest instance, \( a^a \) is higher in status than \( a^b \).
DOUBTS, GUILT, CONDEMNATION, AND ETHICAL STATUS

Not only individuals and situations can be evaluated but also internal reflective worlds. We therefore concentrate on $a^A + b$ and in particular $A + B$. To investigate doubts, we require a third level. Assume we observe a person in System W. We find that in, say $a^A + b = a^a + b^b$ "a" sees himself as being in conflict with "b" (recall that "+" means confrontation in System W), he sees himself correctly, but doubts his self-image as given by the "a" on the third level. Incidentally, note that he imagines that "b" has a true image of himself (i.e., b). Doubt is always signified by a difference in the self-image in the second and third levels. As an example, observe $a^A + R$. If $A + B = a^a + b$, we learn that "a" does not doubt his own good or evil but he doubts his image of b as well as whether he is correct in his image of the interaction (i.e., as being confrontational or compromising).

We next are told that if the overall status of $A$, obtained by substituting 0's and 1's consistently for "a" and "b", is $A = 0$ then "a" feels guilty, which is the same as saying that guilt is equivalent to seeing evil in oneself. When $B = 0$ in $a^A + b$, "a" is said to condemn his partner. If $A + B = 0$, "a" views the situation as being bad or evil, or feels suffering. One finding of interest is that for an arbitrary formula with a third level, doubts always lead to increased guilt; that is, the frequency of times that $A = 0$ increases on the average.

In any case, the resulting structure is then used to study how and with what frequency an evil intention, as given by the root "a" in $a^A + b$ being equal to 0, can be transformed into good by various combinations of values of "a", "b", and $*$ in the general formula $a^A + B$. It is assumed for this purpose that "a" always has a correct image of himself. As an aside, there seem to be several places in the book where a simplification of this type is made without informing the reader whether it makes any difference in the conclusions.

As another parenthetical remark, it is interesting to observe that even guilt can depend on whether "b" is seen as evil or good, even if "a" doubts his own view of "b"! Thus, consider the formula $a^a + e + b$ where "a" doubts only whether "b" is good or evil and $a = 0$. If, in fact $b = 0$ then it follows that "a" feels guilty, $A = 0$, but if $b = 1$ then "a" feels no guilt. Of course, in studying average frequencies that $A = 0$ with or without doubt, the value of "b" in $A$ averages out.

To proceed along the main track, the author deduces the following important consequences: (1) Feeling guilty is more characteristic of an individual in System W than in System S. (2) The simultaneous appearance of feeling guilty and condemnation is a necessary condition for transforming evil into good in W, but in S, either is sufficient. (3) Absence of doubts prevents transformation of evil into good in System W but not in S. (4) In System W, if "a" doubts his own self-image and has a bad intention (the root $a = 0$) he always feels guilty; not so in the Soviet system. (5) Individuals with no doubts never feel guilty in System S but sometimes do in the Western system.

I must say that I do not feel completely comfortable with certain aspects of the guilt analysis. For instance, it seems, intuitively, that if an individual has evil intent,
sees himself as being bad, and has no doubts about it, he should be more prone to
guilt; but this is false in the present theory.

A further intriguing result presented in Chapter 8 is that in System W, when in
contlict, doubts about the correctness of one's image of one's adversary enhance one's
status, but in the Soviet system, that diminishes a person's status.

APPLICATIONS OF THE THEORY TO SOVIET AND WESTERN LITERATURE

There are two primary ways in which the author has so far sought to test his
concepts. One is by experimental means where people of Soviet birth or western
culture are asked to fill out questionnaires designed to pit predictions of System S
against System W. This approach will be dealt with further below. The other has been
to analyze certain literature, in the main fiction, legends, or propaganda. The
legendary material has largely been used to suggest origins of the two ethical systems,
which we see again further along. In the present work, the author analyzes and
compares Shakespeare's "Hamlet" with prototypical post-communist revolutionary
propaganda novels.

In the analysis, Hamlet is portrayed as possessing doubts concerning himself and
his adversary, Claudius. The doubts about himself are presumably expressed in the
renowned "to be or not to be" soliloquy, despite the actual authenticity of Hamlet's
suspicions. Claudius, on the other hand, is viewed by Lefebvre as having incorrect
images of himself and of Hamlet and of doubting the correctness of those images.
Within the frame of System W, Hamlet possesses the higher status but they are equal
in the confines of System S. Similar points are made in the Soviet literature com-
parison.

These conclusions are adduced as positive evidence for the theory. I have some
grave reservations about attempting to map the filigree of subtleties of Shakespeare's
greatest tragedy into the binary platform of the present theory. Moreover, even the
particular binary dimensions of the theory are not necessarily those of which
Shakespeare conceived or indeed perforce make contact with the theoretical structure.
In perusing a number of critical commentaries on "Hamlet," some did indeed
emphasize the lack of action on Hamlet's part. However, the presumed reasons for
his lethargy are disputed and it is not at all certain that it may be projected into a
doubt about his images of himself and of Claudius. Thus, although Hamlet may have
doubted his images, those doubts may have little or nothing to do with the
philosophical content of the play. It is further not clear that Hamlet doubts his own
ethical goodness.

The picture of Claudius is in some ways even more murky. I would have thought
before reading the present book that Claudius correctly perceived Hamlet, maybe
correctly evaluated himself, but was rueful about his lack of morality and distrustful
of Hamlet. For instance, a little more than halfway through the play, Claudius
embarks on a monologue wherein he castigates himself for his evilness ("Oh, my
offense is rank, it smells to heaven; it hath the primal eldest curse upon't, a brother's
murder...”) and even attempts to pray for salvation. However, his thoughts apparently are dissonant with his words so that the effort fails. This seems to contradict Lefebvre’s conclusion that Claudius has an incorrect image of himself or even that he doubts it.

Although I have not read the particular Soviet inspired literature to which the author refers, I have read similar such work. Lefebvre’s claims seem much more cogent here. However, in contrast to most of Shakespeare’s plots and characterizations, this type of Soviet example appears almost comic strip in nature. It seems likely that simple binary moral dispositions may be much more obvious there than in exceedingly deep dramas. Possibly there exist books or plays in Western society that are more patent in their representation of normative ethical status, and which might better serve the author’s goal.

An exposition relating to Dostoevski’s “Crime and Punishment” is pursued later in the book. It is more cogent than the “Hamlet” sojourn but still a little strained.

**Experimental Tests of the Theory**

A series of experiments was run to test predictions of the theory. I felt much more comfortable here. A subject was given a questionnaire about two individuals in conflict with one another; the pair are well known political figures. Either the relation of ethical priority is given in the statement or the subject has to give his estimate of the ethical priority of one of the two interactants. After the subject has given an overall judgment about the ethical priority, he is asked a series of questions in order to determine a unique structure which intends to represent the situation as viewed by the subject.

The theory predicts that the overall judgment will be consistent with the ethical status computed from the theory if the correct variant, of the two systems, is employed to interpret the subject’s answers. A sample question pair is the following: (1) Did Mr. Kennedy have any doubt about the correctness of his evaluation of himself? (2) Did Mr. Nixon have any doubt about the correctness of his evaluation of himself?

As can be seen, the subject’s responses can be used to either assign the same value in how, say, Nixon, sees himself and how he believes he sees himself or the opposite value. The first response indicates no doubt whereas the latter does indicate doubt.

The results were statistically in favor of the W system describing Americans and comparable experiments run on Soviet emigres strongly supported the hypothesis that their ethical predisposition agreed with System S; a pleasing outcome.

**Maximizing One’s Ethical Self-Image in the Counterposed Systems**

Lefebvre proposes that a person may be able to choose the interaction sign in the third level and that by doing so he attempts to maximize the ethical status of his self-
image. It follows from the theory that an individual will maximize his ethical status by letting "*" = "\cdot". Because "\cdot" means compromise in System W but confrontation in System S, the implication is that a Westerner will maximize his self-image by choosing compromise but a Soviet will do so by opting for confrontation.

Let us depict how this seemingly counterintuitive result comes about. Consider the term $a^{a\cdot b}$ in the formula $a^{a\cdot b\cdot b}$ and first let "*" = "\cdot" be confrontation in System W but compromise in System S. The various combinations of values of "a" and "b" or $a^{a\cdot b}$ yield $1^{1\cdot 0} = 1$, $0^{0\cdot 0} = 1$, $1^{1\cdot 1} = 1$, $0^{0\cdot 1} = 0$. Now because each of these cases is presumed to occur with equal frequency, the average status for "*" = "\cdot" is $3/4$. Similar computations show that $a^{a\cdot b} = 1$.

Therefore, the overall status is higher if one utilizes "\cdot" rather than "\cdot" in one's third level, which seems to be the level of conscious choice in Lefebvre's scheme.

A possible nit to pick here is that one might wonder why an "ideal" individual in a society might not always see himself as $a = 1$ and his adversary as $b = 0$. In this case we have

$$a^{a\cdot b} = 1^{1\cdot 0} = 1 \quad \text{and} \quad a^{a\cdot b} = 1^{1\cdot 0} = 1;$$

that is, confrontation and compromise then confer equal status on the typical self-righteous nationalist.

There follows in the book some discussion of events at the fourth level (i.e., exponent) but I find it difficult to take this degree of supposed abstraction on the part of an individual very seriously. It might be of more interest in the theory of automata.

**Feelings and Sacrifices**

A subsequent investigation explores the consequences of assuming that the individual might be able to maximize his ethical status as compared with minimizing his suffering, or his feelings of guilt. It turns out that guilt and ethical status (in the person's image) are complementary to one another but that suffering is monotonically related to ethical status. For example, a W system person will on the average, by choosing a mode of compromise in his image instead of confrontation, increase his ethical status, decrease his feelings of guilt, and increase his suffering. The opposite occurs for a person of the S system. Another neat result here is the proof that a perfect individual cannot consider himself perfect. A perfect person is one with maximum ethical status. Considering oneself perfect is equivalent to considering one's image of oneself as attaining maximal ethical status. Because he is viewed as being able to manipulate certain signs that relate to this image, if he does so in a way that gives himself minimal guilt, he will not reach the true highest ethical status.
The tract becomes even more exciting and potentially controversial at this point. The metastructure $a^{a+b}b$ is analyzed where the underbars mean that the letter is a variable, i.e., $a = a$ or $\tilde{a}$ and so on. By substituting 0 or 1 in all possible combinations for $a = a$ or $\tilde{a}$, etc., where it is assumed that these values occur with equal frequency, we may calculate the ethical status of individuals characterized as special prototypes. Thus a *saint* is said to be characterized by the form $a^{a+b}b$. Notice that in the $W$ system, this type of individual seeks compromise but thinks he should seek confrontation. The reasoning here becomes a little strained at times, but it might go something like this: The person actually decides to seek compromise which tends to increase suffering in system $W$, presumably because in our system, it is natural and ideal to want confrontation of good and evil (of course, it appears somewhat foggy here because $b$ could in general be either 0 (evil) or 1 (good)) and yet he chooses to compromise. Alternatively, as Lefebvre treats this topic here, there is an emphasis on when maximal suffering, guilt, etc., occur, rather than a stress on the values of the variables "$a$" and "$b$". Further observe that the saint also is destined to cringe under the burden of guilt because of the doubt expressed in the different symbols on the second and third levels. Possibly he views himself (or his image of himself?) as being in conflict with the other person.

One bothersome point is that it is unexplained as to why the sacrificial behavior is always in the same direction as the moral code of the society and vice versa. One of the most frequent aspects of a saint, almost to the point of being part of the common definition, is that of sacrificing against the standard code of a society.

In any event, the *saint*, *hero*, *philistine*, and *dissembler* are analyzed and it is learned among other things that a saint has the highest status and also the highest suffering and guilt and so forth. This and other results are important in what follows.

**When Saints and Sinners Get Together...**

The structures leading to the four prototypical ethical characters mentioned in the preceding section are now brought into dynamic interactions. There are two major cases:

1. An individual establishes his relationships with his partner by himself.
2. An individual's partner establishes the relationships.

The first case is termed active, the second passive. The mean ethical status can be computed assuming that with probability $p$ he is active and $1 - p$ he is passive with respect to his partner and thus weighting the two pertinent ethical statuses. An implicit assumption is that an individual always imposes on his partner the structure he chooses for himself. Why this should necessarily be true is not adequately defended.
Recall that a saint labors under maximal guilt as well as suffering. A philistine is one who tends to decrease suffering but can have high guilt; the small degree of suffering implies a low ethical status. A hero minimizes his feelings of guilt but not his feelings of suffering. Finally, a dissembler minimizes feelings of both suffering and guilt. It works out that a society made up of only dissemblers has a mean situational status of .81 while one of heroes has status .61. Contrarily, the mean ethical individual status of people in a hero society is, of course, higher than one of dissemblers. This untoward finding may suggest that dissemblers can make a society work more smoothly (although that is probably not an actual logical result of the theory); or perhaps situations are really more ethical somehow on the average.

**IDEOLOGY, MORALITY, AND POLITICAL ORGANIZATION**

Several propositions are now advanced relating to how the W vs the S system may have arisen in a sociopolitical fashion from certain moral and religious precepts. One pivotal idea is that the Christian ideal is based on prohibition of evil but Soviet ideology is based on declaration of good. For example, Lefebvre claims there is a great deal of difference between “do not lie” and “be truthful.” This, I believe, cannot be substantiated at the level of two-valued logic. However, it may be that this and other conclusions drawn in this chapter might have some psychological validity, in that perhaps how people interpret the above two commands or exhortations may indeed differ.

The author conjectures that the New Testament forms a normative theory of personality whereas the Old Testament contains the fundamental postulates of moral human behavior (e.g., the Ten Commandments). It is postulated that the Old Testament leads to a negative evaluation of a compromise between good and evil and the New Testament to compromise between people. That is, this is hopefully the foundation of System W. In contrast, the “Moral Code of a Builder of Communism” in Soviet ideology emphasizes what a person should do rather than what he should not do as in System W. Also, it clearly stresses confrontation with adversaries of communism.

Ultimately, Lefebvre draws the fascinating conclusion that (1) in the society where ethical System W is realized, the greater the ability for self-organization and unity the higher the ethical status of its members; and (2) in the society where ethical System S is realized, the greater the ability for self-organization and unity the lower the ethical status of its members.

**ETHICALLY NONMEASURABLE SITUATIONS**

Lefebvre attempts to generalize previous developments to the case of interaction of an arbitrary number of individuals. It turns out that the situations in general are not mappable into the Boolean algebra representing the ethical structures of Lefebvre's
theory. He refers to such situations as *ethically nonmeasurable*. Basically, for four or more individuals it appears that we can measure, in terms of the theory, the ethical status of individuals but *not* situations. The author sees this as an analogy to the decidability problem in logic, in the sense that there may exist correctly formulated and true propositions which are not provable within a particular logical system. I am not sure this particular analogy can be pushed too far, but the possible ramifications of the nonmeasurable development for sociopolitical theory are provocative.

**Substantiating Nonempirical and Primitive Axioms**

**AND A SHORT EXCURSION INTO MYTHOLOGY**

Certain axioms which are not immediately subject to empirical test and which do not necessarily seem particularly intuitive have untoward consequences if they are removed or altered. For example, it is shown that interpreting $a^b$ as $b \rightarrow a$ i.e., as logical implication, yields the only algebra which leads to (1) an individual with a correct image of himself has a higher ethical status than one who does not and (2) an individual who possesses doubts about the correctness of his (correct) image of himself has higher ethical status than one who has no such doubts. As another example, consider the axiom: “The confrontation of good and good as well as the compromise of good and good is good.” Again, unpleasant consequences erupt if this axiom is altered.

In a final chapter it is suggested that System S existed in Europe in pre-Christian times by analyzing a plot from an ancient legend of Greenland. We are led to believe that Christianity nurtured the growth of the W system, but the inception of the Soviet reign brought with it a recursion into the ancient S ideology.

**Discussion and Evaluation**

This book was beguilingly easy in a way. The more I read and pondered, the more questions I had, at least up to a point. Although I now believe I have a pretty good feel for the theory, I must confess I do not think I have it quite all in my grasp. In one sense, the theory is, of course, completely axiomatic; one may churn out theorem after theorem. What was not always self-evident was the linking of the terms and operations in the theory to the real-world concepts. There is no doubt in my mind that the author knows precisely what he is talking about and feels that the correspondence between real-world concepts and the theoretical structure is perfectly defined. But to the reader, there is occasionally a sense of the slippery and cloudy. Some of the language seems a little rich for a theory based on binary concepts. Much of the fog is dispelled by heavy concentration and rethinking but I still am convinced that further effort on the part of Lefebvre to sharpen the treatment on these dimensions will be rewarding.

To move to the overall impact, I believe this theory to be a quite profound
contribution to the study of phenomenology of internal feeling and reflection especially with reference to ethical systems. There have certainly been previous attempts to formulate mathematical descriptions of ethical principles or of human social interactions embedded in differing political systems. However, I so far have not been able to find anything quite like the present theory. Lefebvre's calculus is ingenious, based on self-reflection and using an extended Boolean algebra and a clever exponentiation technique. The theorems are deep and highly absorbing in psychological, philosophical, and sociopolitical senses. Because all springs from a binary valued foundation, there is often great elegance and parsimony in the theory.

Another admirable facet of the work is the author's emphasis on empirical tests, through direct experiment, as well as analysis of literature, legend, and potentially other varieties of documents. The heavy empirical thrust is still quite rare in this type of endeavor.

Not to say that all is perfect. Aside from the problems raised in earlier sections, most trivial, some more substantive, there are certain other difficulties or lacunae. For instance, it was not always clear how the author made his decisions in development of the theoretical structure. Some critical assumptions have received either empirical support or theoretical justification. Other choices, such as associating the various levels of the exponent with certain psychological functions, are not always so obvious. In one sense, he is not obligated to provide such explication; if the theory works then that is that. However, it would be reassuring to know that alternative paths are impossible, unproductive or the like.

All in all, I would be surprised if this work did not provoke a good deal of discussion and even controversy, not only at the academic level but within certain governmental and international sociopolitical circles, for some years to come. I also envision stimulating extensions of the theory by its author as well as challenging theoretical conceptions from other scholars.