The purpose of this paper is to report the development of an instrument, the Philosophical Attitude Description Inventory, which can be used to provide a quantitative measure of an individual's philosophical value system, when defined as the individual's response to a series of factor analyzed philosophical statements. The potential use of the instrument within the context of an educational organization is discussed.

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The PADI: An Instrument for Measuring Philosophical Values

I

Individuals who occupy a position of responsibility in any formal organization are often confronted by day-to-day situations for which there are no specific institutional rules or policies defining a mandatory or most appropriate course of action to be followed in resolving issues or making decisions related to the situation.[1] This seems to be especially true within the context of an educational organization, whether in the process of selecting materials and methods for teaching students or in the administrative operation of the total school system. Given such "open" situations, a question arises concerning how, in fact, an individual makes a situational decision under these nonspecified conditions. It has been suggested that by defining an individual's choice among the alternatives with which he is faced in any decision making situation, and knowing the extent to which he believes each alternative is likely to result in a particular outcome, it is thereby possible to predict what his decision will be.[2] Aside from the question of the feasibility and practicality of such a procedure in an educational setting, a subtle issue can be raised in trying to explain the initial rationale by which an educator might define each situational alternative and make his choice among such alternatives. It can be suggested, for example, that he may simply find one alternative more practical or productive or expedient than

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[1]J. G. Anderson, "Bureaucratic Rules: Bearers of Organizational Authority," *Educational Administration* Quarterly, Vol. II, 1, 1966.

[2]Ward Edwards and Amos Tversky (eds.), *Decision Making:Selected Readings* (Baltimore, Md: Penquin Modern Psychology Series, 1967), pp. 13-95.

another at that particular point in time! It might, on the other hand, be suggested that several "peripheral" influencing forces are taken into consideration before such decisions are made. Lane, Corwin and Monahan provide some credibility for this position by their listing of five variables which influence a decision made in an organizational school setting: (i) internal traditions of the organization; (ii) formal commitments to outside organizations; (iii) pressures from outside groups; (iv) past decisions on the part of the individual making the decision; and (v) existing relationships between persons in the organization who might be affected by the decision.[3] The recent excellent work of the PDK National Study Committee on Evaluation suggests that the "decision setting" plays a major role in the total decision making process, influencing not only the basis of the decision but also the purpose and the framework within which the decision is made; whether restorative, utopian, developmental or innovative.[4]

Most of the presently conceived decision making explanations, including to some extent those mentioned above, do not, however, take into full consideration any basic predisposition or philosophical orientation which the person making a decision might bring to the situation. The decision to teach on the basis of an inquiry approach rather than by lecturing is at root a philosophical decision as much as a methodological decision, as is the question of shared rather than autocratic administrative decision making!

The development of a valid, easily administered and interpreted "philosophical questionnaire" would be useful to persons working in both educational and other similar organizations.[5] Such an instrument could provide insightful information concerning the extent to which differences in philosophical orientation are a contributing factor in conflicts between administrators and teachers, as well as conflicts among the teaching staff. Using such an instrument it might also be possible to establish a relationship between composite attitudinal scores for a school staff, and the degree to which the school can be characterized as "open" versus "closed".[6]

Ross has recently developed an Educational Philosophical Inventory which is perhaps the most similar of any such instruments to the Philosophical Attitude Description Inventory discussed in this paper.[7] The

[3]Willard R. Lane, Ronald G. Corwin, and William G. Monahan, *Foundations of Educational Administration: A Behavioral Analysis* (New York: The Macmillan Co., 1967), pp. 128-149.

[4]Daniel L. Stufflebeam, et. al., *Educational Evaluation & Decision Making* (Itasca, Illinois: F. E. Peacock Publishers, 1971), pp. 49-105.

[5]Amitai Etzioni, *Modern Organizations* (Englewood Cliffs, N.J.: Prentice-Hall, 1964), p. 87.

[6]Andrew Halpin and Don B. Croft, *The Organizational Climate of Schools* (Chicago: The Midwest Administration Center, The University of Chicago, 1963).

[7]Colvin Ross, "An Educational Philosophical Inventory: An Instrument For Measuring Change and Determining Philosophical Perspective," *The Journal of Educational Thought,* Vol. 4, No. 1, April, 1970.

primary difference between the inventory developed by Ross and the PADI is the method for determining the philosophical concept reflected by each item, and the inclusion by Ross of an "undecided" response category. Ross had a panel of experts review a large list of items tentatively reflecting different interpretations of knowledge, value and reality indicative of the philosophies of idealism, realism, pragmatism and existentialism. After deleting ambiguous items, Ross was able to retain twenty statements reflecting each of the four philosophies. In the development of the PADI a factor analysis procedure was used to group items, with no preconceived expectation that a certain number of item clusters would emerge. In future research efforts it will be interesting to see if there is a meaningful correlation between subtest scores on the instrument developed by Ross and the PADI described in this paper!

II

At the outset of the investigation to develop the Philosophical Attitude Description Inventory an initial questionnaire form was constructed which included 98 items. These items were brief written statements concerning a broad range of philosophical issues conceptualized as reflective of ontological, epistemological and axiological topics of inquiry. A four-point Likert-type rating scale ranging from strongly agree to strongly disagree was used to indicate the response of individuals answering the inventory.[8] A heterogeneous sample of 145 persons was selected to respond to the initial inventory form. Responses obtained from this sample were keypunched on IBM cards and factor analyzed using an IBM 360 computer located at New Mexico State University. A series of principal component factor analyses, with varimax rotational solutions, were performed on the data. Factor analysis was decided upon as the procedure to use for the grouping of items primarily on the basis of attributes of this procedure cited by Horst in comparing factor analysis with "rational" and "criterion" procedures.[9] Factor analysis was also considered appropriate for the identification and grouping of items developed for the inventory because this procedure facilitates the reduction of a large number of variables to a fewer number of more meaningful factors, thus identifying in a more precise manner the underlying order of the variables being investigated.[10] A nine factor solution, including 53 of the 98 items, was finally decided upon as the most appropriate to examine for the purpose of determining those items to be retained in a second form of the instrument. On the basis of an examination of the item clusters which comprised the nine factors, it was decided that an additional seven items should be written and included in the second

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[8]Rensis Likert, "A Technique for the Measurement of Attitudes," *Archives of Psychology,* No. 140, 1932.

[9]Paul Horst, *Personality: Measurement of Dimensions* (San Francisco: Jossey-Bass, Inc., 1968), pp. 71-94.

[10]Louis L. Thurstone, "The Factor Problem," in *Problems in Human Assessment,* D. N. Jackson and S. Messick (eds.), (New York: McGraw-Hill, 1967), pp. 279-287.

inventory form, with the items to be based on the content of the nine identified factors.

A sample of 217 students enrolled during the Spring 1971 semester at New Mexico State University, and 73 government professional employees at White Sands Missile Range was selected to respond to the 60 items included in the revised form of the instrument. A series of factor analyses were performed on the data obtained from the sample of 290 respondents, and a five factor solution using 28 of the 60 items was selected as the best solution on the basis of criteria established prior to the analyses. These criteria included the attaining of an acceptable total amount of variance accounted for by the solution, the semantic "fit" of the items included in each obtained factor, and a rotation whereby items received a loading of .40 or above on only one factor and close to zero on all other factors in the solution.[11]

The 28 "key" items on the PADI clustered into five factors which were then named on the basis of the content of the items comprising each factor. The five factor names selected were *Individualism, Gnosticity, Conditionality, Nonreferability* and *Positivism.* Items included in each of the five factors are identified below:

Factor #1: Individualism

1. Individual happiness should be the main criterion in developing a personal code of behavior
2. A person should not have to do things he dislikes
3. Finding personal happiness is an acceptable aim of life
4. The seeking of personal happiness is an acceptable end in itself
5. A person should do whatever feels good
6. A person should be able to do whatever he likes to do
7. Any form of behavior is acceptable as long as it does not harm anyone else

Factor #2: Gnosticity

8. The Christian Bible provides the best explanation of the creation of the universe
9. Christianity is the only true religion
10. Heaven and hell do now or will in the future actually exist
11. Questions concerning the purpose of life are better left to religion
12. Some truths are revealed to man rather than discovered by man
13. There is no final authority concerning moral values[12]

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[11]A. L. Comrey, "Factored Homogeneous Item Dimensions: A Strategy for Personality Research," in *Measurement in Personality and Cognition,* S. Messick and J. Ross (eds.), (New York: John Wiley & Sons, 1962), pp. 11-26.

Factor #3: Conditionality

14. Our present understanding of the universe is always subject to question and change
15. There are fixed natural laws which govern the operation of the universe
16. The external world provides the most adequate basis for our understanding of reality
17. Knowledge can only be accepted on a conditional basis
18. Each person must create his own personal interpretation of reality
19. Man's perceptual senses create a shield between man and reality

Factor #4: Nonreferability

20. An individual's motives can never be fully determined
21. A person's knowledge of the world can never adequately be conveyed to another person
22. Personal happiness cannot adequately be defined or described
23. Knowledge is open-ended and tentative rather than certain
24. Questions concerning the ultimate meaning of life can never be completely answered

Factor #5: Positivism

25 Science provides the best method for explaining the world in which we live
26. The better something can be measured the more certain we are of what it is
27. With increasing scientific sophistication the need to rely upon a supernatural power to explain the world begins to diminish
28. There is a discoverable explanation for all human behavior

It should be remembered that the 28 items reproduced above were randomly mixed throughout the total 60 items included in the PADI questionnaire format. A complete listing of the items as well as the varimax rotated factor loadings for the 28 key items is available for examination in the original study.[13]

The initial factor, *Individualism,* consists of items which all connote some reference to self-interest of the individual. The factor seems to

[12]scored negatively

[13]Eddy J. Van Meter, "A Study of the Relationship Between Philosophical Attitudes and Educational Decision Making," (unpublished Doctor's dissertation, New Mexico State University, 1971).

tap an attitudinal domain which includes components of hedonism,[14] personal self-interest and orientation, and existentialism.[15]

The second factor, *Gnosticity,* suggests something of a traditional Christian religious orientation. The term religiosity was considered as a possible label for this factor, but was finally rejected because of the implication of excess or sentimentality which might be attached to the term. Since the factor content does imply an attitudinal adherence to faith, rather than to proof or evidence, the term Gnosticity was considered the more appropriate title.

The third factor, *Conditionality,* includes items which appear to focus around a relativistic concept of reality, and the conditionality of man's understanding of the processes by which reality and the structure of the universe are conceptualized and defined. At first blush it would seem that there is an incongruity between the content of item 15 (as identified in this paper) and the content of other items in the factor. Within the context of the factor, however, it may be suggested that the fixed natural laws which govern the operation of the universe are to be viewed as internally consistent rather than as absolutely fixed. Thus, the concepts of reality which find their impetus in the works of Newton and Einstein can be viewed as "fixed" in the manner suggested above, while still providing perhaps the most obvious example of the conditionality implied in the factor construct! Although the issue of a positive versus a negative orientation concerning the relativistic or conditional nature of man's understanding of reality is not brought to the surface or examined within the context of the items included in this factor, it is interesting to note the potential relationship which may exist between this factor content and the recently articulated concept of Positive Relativism.[16]

Items included in the fourth factor, *Nonreferability,* suggest a lack of reliance which can be placed on man's ability to adequately and effectively communicate his conceptual frame of reference concerning knowledge about any issue to anyone else. The factor appears closely related to the existential concept of human subjectivity discussed by Sartre[17] and Morris[18] among others.

The fifth and last factor, *Positivism,* includes items suggesting an adherence to scientific operationalism[19] and logical positivism.[20] Persons

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[14]Hedonism is defined in *Webster's Seventh New Collegiate Dictionary* as the doctrine that pleasure and happiness is the sole or chief good in life.

[15]Ralph Harper, *Existentialism: A Theory of Man* (Cambridge: Harvard University Press, 1948).

[16]Morris L. Bigge, *Positive Relativism: An Emergent Educational Philosophy* (New York: Harper & Row, 1971).

[17]Jean-Paul Sartre, *Being and Nothingness,* trans. by Hazel E. Barnes (New York: Philosophical Library, 1956).

[18]Van Cleve Morris, *Existentialism in Education* (New York: Harper & Row, 1966), p. 12.

in substantial agreement with the terms included in this factor might be characterized as evidencing a concurrence with the basic precepts of the scientific method.[21]

III

It is interesting to speculate upon the significance which might be attached to the interrelationships of a respondent's scores on the five factors identified above. It may be quite possible to establish meaningful profiles across the five factors which will depict several explicit attitudinal patterns not presently identified in the literature. Thus, for example, it may well be that a predominantly low score on the Gnosticity factor,[22] with concomitant high scores on the Conditionality and Positivism factors, suggests a philosophical response pattern which is very much different than a low score on the former, a high score on the Conditionality factor, and a low rather than a high score on the Positivism factor. In the first instance the pattern or profile might suggest an individual skeptical of religion and committed to a scientific outlook, while in the second instance the pattern might suggest an individual skeptical of both religion and science. Variations of this theme seem open to possibilities limited only by the size of the matrix!

IV

Utilization of the PADI within the context of an educational organization entails, not altogether ironically, several questions of some philosophical importance! As mentioned at the outset of this paper, the instrument may prove valuable in providing insight concerning the extent to which differences in philosophical orientation are a contributing factor in conflicts among educational personnel. In addition, as also noted, the PADI might be useful in establishing relationships between staff philosophical orientations and the "climate" of their respective schools. There are certainly other applications of the instrument which require serious discussion before being initiated. Should, for example, the response scores of an individual to the PADI be used as one criteria for employment, if in future research with the instrument it is determined that a significant relationship exists between an individual's

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[19]John G. Kemeny, *A Philosopher Looks at Science* (New York: Van Nostrand Reinhold Co., 1959), pp. 125-131.

[20]R. von Mises, "Positivism" (Cambridge: Harvard University Press, 1951).

[21]Ernest Nagel, "Patterns of Scientific Explanation," in *The Structure of Science,* Vol. I, Chapter 2 (New York: Harcourt, Brace & World, 1961).

[22]A composite factor score on each of the five factors was computed for each person responding to the instrument. A computer scoring program originally developed by Stanley Mulaik at the University of Utah, and subsequently modified by Don B. Croft at New Mexico State University, was used to compute the factor scores. These factor scores provided, in effect, a "weighted" single score reflecting the individual's response to all of the items comprising each of the factors. Thus, five separate factor scores were computed for each respondent.

PADI factor scores and his or her teaching or administrative ability? Future research using the PADI may also provide additional information concerning several facets of decision making which would be of special interest to education practitioners. The instrument has already been used successfully to establish relationships between PADI responses and simulated educational decision making responses.[23] It is perhaps feasible to suggest that it will be possible in the future to match a person to the kind of school job decisions he can best make, thus placing personnel in jobs and situations where they feel more competent and comfortable. The question of whether or not this would be a beneficial application of information which might be obtained using the instrument remains open to debate and discussion.

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[23]Eddy J. Van Meter, *op. cit.*