

HUMAN VALUES
A Conceptual Model for the
Dynamics of Value Processing

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ABSTRACT

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There are two main approaches in studying human values: the macro-global approach and the micro or individual approach. Within the first approach there are three major models. The first views values as absolute universals that should be; the second views values as the actual relative patterns of behavior; and the third scales values to natural self-actualizing, modern or urban humans. Within the micro-approach, there are four models. The first places more focus on the affective psycho-dynamic part of values; the second views values as cognitive representations. The decision making model views values as independent dimensions which guide decisions, and the action model reveals the built-in discrepancy between the espoused values and values in use. Most of these models lack the dynamic and the comprehensive perspective which combines the micro and macro analytic levels. The alternative model proposed in this thesis suggests three levels for rediscovering value dynamics and four approaches to measure them. The first level is the signification process that triggers global activation spreadings with intensity equal to the significance of the perceived object to the individual's survival and growth

values or their derivatives. There are three kinds of signification: object-signification, values-signification, and self-signification. Self-signification is the core of valuation dynamics at this level and the source of valuepathy and psychological health. The second level in addressing value dynamics may be performed by analyzing the value system as self programming mechanisms. Values and their derivatives, which are the reference criteria in the signification process, are materialized in micro, or intra-system, and macro, or inter-system, programming. On the micro-processing level there are two kinds of dynamic processes: the valuative states formation, like anticipation and familiarity and their specific derivatives, such as attitudes, preferences, and likings. The second is the value programming and packaging mechanisms. Within these packaging mechanisms there are different kinds of internal processing subroutines and algorithms. Within these programming mechanisms there are two kinds of statements: declarative, or non-executable, statements, which are these kinds of abstract universal values, and executable, or command, statements, which are either negative or positive, imperative or conditional self-orders. At this level, values are self-prescriptive programs and algorithms that function to secure a base line of readiness for effective coping. The third

level of addressing value dynamics is the level of real time macro-processing. The individual develops through significating and coping to outside events his network of automated and non-automated personal survival and growth strategies which are dependent on both his valuative competencies and environmental availabilities. Flexibility, which is characterized by the selectivity syndrome inherent in it, is the source of different valuative competencies to plunge, to transcend, to balance, and to automate. Four measurement approaches have been proposed to check the validity and practicality of this model. The first centers on the assessment of valuative maturities and competencies. The second focuses on examining value processing dynamics. The third emphasizes evaluating valuepathy and its manifestation. The fourth combines all the available techniques in a value contextual analysis through task and case studies. Four extensions, or clarifications, of this model have been proposed to extend it to cover and explain macro-analysis, value contents, supernatural and natural belief systems, and to develop it to be more specific through sub-modeling of the specific areas of behavior.

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CHAPTER 1

Human Values' Theories and Research:

A Critical Review

There are two main approaches in describing value theories and research. The first main approach, which is more general, social, and global, is called the Value Macro-Analysis. The other is more specific and individualistic and is called the Value Micro-Analysis.

This chapter reviews some of the main theoretical trends within these two approaches and identifies the main points of criticism addressed to each. In the first approach, three models of thought and research are reviewed. The first views values as what ought to be, the second focuses more on the values as what is going on, and the third is the models of man paradigm which offers a dialectical synthesis of both. The analysis of the second approach (Micro-Analysis approach) includes a review of four different perspectives. The first deals with values as emotive or affective expression; the second focuses more on them as cognitions or cognitive representations; the third views valuating processes as a separate dimension in personality which is critical in decision making processes; and the fourth perspective emphasizes more the dialectical role of values in action and behavioral level.

The Value Macro-Analysis Approach

"What ought to be" perspective. Most of the theories in this section emerge from philosophical and religious tradition which views values as central, universal, absolute, and divine commandments which ought to govern behavior and society. Within this focus, it does not matter what is going on, but what values should be or what is desirable or preferable.

Allport, Vernon, Lindzey, Parsons, and Rokeach represent that kind of theory and research. For example, Rokeach's theory and research (1972, 1973, 1979) represent a refined version of this perspective. For him, values are more or less universally present. Individual values are socially shared conceptions of the desirable. They constitute a cognitive representation of underlying needs that have been transformed to institutional goals and demands and became standards for evaluation.

The function of values for Rokeach (1979) is to provide a set of standards to guide us in all our efforts to satisfy our needs and to maintain and enhance our self-esteem by making it possible to regard ourselves and to be regarded by others as having satisfying societally and institutionally originated definitions of morality and competence. Self-conceptions have a self-reflective quality and are activated

in virtually every situation a person may find himself. One's performance in every situation is more or less routinely judged for its bearing on self-conceptions. The ultimate function of values, thus, is to help maintain and enhance one's total conception of the self.

Rokeach (1973) distinguishes between two types of individual values: terminal or end state values, and instrumental or means values. The former refers to beliefs or conceptions about ultimate goals or desirable end states of existence that are worth striving for, e.g., happiness, wisdom, freedom, justice. The latter refers to beliefs or conceptions about desirable modes of behavior that are instrumental to the attainment of the desirable end states, such as behaving honestly or responsibly. Individual and institutional values are restricted to a relatively small number of values (18 terminal + 18 instrumental) which are assumed to be more or less universally present on the same grounds that the basic individual needs and that basic social institutions are assumed to be universally present.

Humans and institutions are differing from one another, not so much in terms of whether they possess particular terminal and instrumental values, but in terms of how they organize them to form value hierarchies or priorities that enable humans and institutions to choose

alternative goals and actions and to resolve conflict.

Eighteen terminal values can be ordered in many different ways to account for variations in values among individuals, groups, organizations, institutions, societies, and cultures of the world.

A Value Survey designed by Rokeach (1973) is a measuring instrument that identifies major end states of human existence, the behavioral modes for achieving them, and their personal and institutional variations. This Value Survey consists of one alphabetically arranged list of 18 instrumental values and another alphabetical list of 18 terminal values. The subject is instructed to arrange each list in order of their personal importance as guiding principles to him in his life. Institutional terminal and instrumental values can be revealed by analyzing the non-contaminated contents of institutional documents and the perceived values of their gate-keepers along these 36 categories of terminal and instrumental values. Rokeach (1973, 1979) found six factors in these identified 36 values which he interpreted as immediate vs. delayed gratification, competence vs. religious morality, self-constriction vs. self-expansion, social vs. personal orientation, societal vs. family security, and respect vs. love.

For Rokeach (1979), the most distinctive property of the social institution is its complex of values, and its most distinctive functions are the implementation and transmission of values. Social institutions emerge through the process of historical development and social evolution as a consequence of a differentiation of functions, or values specialization and integration. The total spectrum of human values has been divided up and assigned to the several institutions for their specialized implementation and transmission. The hypothesis that basic social institutions are frameworks allowing for specialization in the implementation and transmission of values presupposes both competition between them and their integration.

Rokeach's perspective has been highly appreciated for its originality and internal consistency (Cohen, 1985; Kitwood, 1985). However, this perspective has also undergone a barrage of criticism. Cohen (1985) and Kitwood (1985) argue that the arbitrary separation between terminal and instrumental values, the artificiality of the rank ordering of items, and the very abstract and generalized nature of values used may prevent any knowledge about the whole real priorities of the individual. They also noticed that the Rokeach Value Survey is ipsative in nature. The values used were selected on an intuitive basis and its reliability

coefficients are low, which provide little basis for use in individual assessment, in counseling, psychotherapy, and selection (Cohen, 1985; Kitwood, 1985).

Values in this kind of perspective, as have been noticed by many theorists, are general abstract entities, or a priori cognitive representations, and thus more static and less specific. Theorizing values as entities or cognitive representations and separating them from the whole multi-dimensional valuating processes are some kind of nominalization which results from replacing real working processes for names and abstract a priori ideas (Stephenson, 1946; Ayer, 1949; Frankena, 1963). The principles of universality and generalizability of values which have been postulated in this perspective are questionable on both a theoretical and empirical basis as will be explained later by the theorists of the other two perspectives (Dewey, 1939; Pepper, 1958).

On the other hand, the very broad definitions which this approach produced tend to equate value with preference, desire, liking, or satisfaction (Fallding, 1965), thus passing over the most distinctive feature of valuation, that is, the partial autonomy of criteria of desirability from desire or wish. Furthermore, values may be reference criteria for significance, judgment, decision making, and

action rather than of desirability. However, values may activate desires, feelings, and cognitive processes, or may be activated by either one of them. Others argue that there is no established relation between criteria of desirability and actual behavior. This simply means that we cannot predict or influence behavior by using this kind of theory. As Robin (Rokeach, 1979), one of these value theorists, put it himself:

If we could simply deduct such behavior by deontic logic from the a priori relevant values, it would follow that we would be dealing either with a world of fanatics and psychotics, or else with a set of astonishing simple and nonresistant situational realities. In a world of continually varying realistic exigencies and of multiple values, only a maniac or a saint will always act consistently in terms of (1) simple, (2) prearranged, (3) hierarchy, or (4) fixed desiderata (p. 25).

The master function of values in this perspective is to maintain and to enhance positive self-conceptions. The values, rather, function as adaptive strategies to helping the individual's overall adaptive effectiveness for survival and growth. Self-conceptions are, more or less, emotional by-products of this continuous self-valuation and their accompanied feedback and feedforward processes to correct or stabilize the whole processing strategies in the psychosystem (Pepper, 1958).

"What is going on" perspective. The second perspective in this global approach views values as what

people actually are doing or their behavioral patterns (not what they should do). As Dewey and Taft (1932) put it:

Reflective morality demands observation of particular situations rather than fixed adherence to a priori principles. The business of determining the good or the bad cannot be done once and for all by making out a table of values arranged in hierarchical order (p. 347).

There are huge descriptive empirical findings, such as those of anthropologists, historians, psychologists, and sociologists, about the different behavioral patterns which represent different value systems. The goal of this approach is to describe or explain the phenomena of morality or to work out a theory of human nature which bears on ethical questions. Study of history and culture provides a wide spectrum of various valuating behaviors which lend supporting evidence for value relativity and contextuality; what is right here may be wrong there across different times and places. The most common theme behind this bulk of scientific work across disciplines suggests strongly that values are by-products of the human adaptive strategies to different physical and social environments. Individual and group survival is the core and reference criteria of these adaptive strategies. These adaptive strategies evolve historically on a global basis and develop locally with emerging societies.

Some theorists (Ayer, 1949; Gilligan, 1976; Stevenson, 1946) go even further to deny, on the same

grounds, that men possess values and argue that what were called values were man-made cognitive illusions. The behaviorist Skinner (1971) argues that "the reinforcing effects of things are the province of behavioral science, which, to the extent that it is concerned with operant reinforcement, is a science of values" (p. 104).

Pepper's theory of values (1958) provides a sophisticated example of this line of empirical thinking. The pivotal hypothesis of Pepper's empirical theory of values is that human phenomena are composed of selective systems and selective processes. Since these selective systems and processes institute natural norms for the values that are generated from them, the lines of legislation by which some of these systems operate selectively over others are of cardinal importance for empirical evaluation. For Pepper (1958):

A selective system is a structural process by which a unitary dynamic agency is channeled in such a way that it generates particular acts, dispositions, or objects (to be called trials), and also activates a specific selective agency (to be called the norm) by which some of the trials are rejected and others are incorporated into the dynamic operation of the system (p. 667).

Pepper identifies seven principal types of selective systems bearing on human decisions:

1. The structure of a purposive act which is either appetitive or aversive.
2. The consummatory and riddance field.
3. The personal situation.

4. The personality structure.
5. The social situation.
6. The cultural pattern.
7. Natural selection.

There are two basic instigating sources of dynamics for these selective systems. One is the instinctive purposive drive, and the other is the vital forces of evolutionary selection. The dynamics of individual behavior, which involves the first four selective systems, is carried on by the purposive drive. The dynamics of social behavior is a combination of both the dynamics of the purposive drive and natural selection.

A natural norm generates values in the sense that it evaluates value facts by its selective actions. A natural norm is also a fact in that it performs a normative function and can be described and classified. There are seven kinds of values which are generated by the seven principal selective systems. The connative achievement values are generated by the structure of the purposive act. The affective values are generated by the consummatory field. The prudential values are generated by personal situation selective systems. Character values have been yielded by the personality as a selective system; these character values, such as responsibility and adaptability, may be acts or dispositions for acting and function as the human way for survival. Social values have been yielded by social

situations and are the results of the prudential values of all the persons involved in a social situation. They are subject to modification by the dynamics of natural selection. The tensions in a social situation are the dynamic selective agency. An act which increases or fails to relieve them will be rejected and another is sought until the tensions are reduced. Social values in this sense include both moral and economic values. Cultural values are generated by cultural patterns and include values that are either selected for their conformity or are selected for their integrative capacities and function to keep the cultural institution in harmony with other institutions in society. The dynamic interaction between these two kinds of cultural values explains the rise of nonconforming reformers. Survival values are generated by natural selection as a natural norm and function to evaluate organisms and social structures as objects of selection. These objects are naturally judged as adapted or adaptable when positively selected.

Different ethical theorists identify different selective systems as the systems to be dominantly legislative over all the others. However, on occasion, each of the principal selective systems can be found to operate in this controlling manner. Observing the empirical dynamics that determine the legislative dominance of one selective system

over another suggests sequence of overlapping hierarchy of control in which the dynamics of natural selection and survival values have a legislative dominance over all the others. The selective system for achievement values is legislating over that of affective values in the consummatory field and are dominated by the legislative dominance of prudential values in the personal selective system. Social values are legislatively dominant over prudential values. The pressures of a cultural pattern is legislatively dominant over social situations. The cultural system is required for the survival of the group in its particular environment, and, thus, the legislative dominance of the dynamics of natural selection is an inescapable result. The survival value of natural selection as a natural norm is determined by the dynamics of the adaptation of the species to its life zone. Survival values find their way all the way down to the personal situation. The affective values represent the only level which is free from the dynamics of natural selection; however, when the survival of a group is at stake, the dynamics of survival values legislates over that of affective values.

For Pepper, values are as much open to description and empirical inquiry as any other objects or events. The guiding maxim for any empirical approach to values is to seek

out the natural sanctions of values and to follow their dynamics wherever they may lead, for it is only the dynamics of values that can guide the scientist to the natural norms and show him the lines of legislation running through them. This line of descriptive empirical thinking about human values, though seemingly scientific, attractive, and convincing, has several strong criticisms.

Hare (1959), Turiel (1980), Habermas (1982), Kohlberg, Levine and Hower (1983) argue that conceptions of value and morality cannot themselves be morally or value free. Any definition of moral concept (e.g., survival) takes a stand on morality, justifying or not justifying it. Moral relativism is an unjustified normative stand. Some values and norms are needed not only to select a person or event for study, but also to guide inquiry and to build theories and hypotheses. Any interpretation or theoretical analysis of cultural facts cannot be value neutral.

Other theorists (Kant, 1949; Hare, 1963; Kohlberg, et al., 1983) argue that reducing moral experience to its underlying natural states constitutes the naturalistic fallacy. When we equate or derive a value such as good or bad from a fact word, we can always ask the further open question, "why is that good?" or "by what standard is that bad?" The postulation of cultural survival as an ultimate

value raises a similar open question, too; "why should a particular culture survive?" Moral discourse is fundamentally prescriptive and not descriptive. Moral prescriptions are not only commands to perform particular actions; they are categorical or conditional imperatives which constitute the duty and the right or legitimacy to act and are derived from some rule or principle of action.

Another point of criticism argues that making moral or value judgments has a universalizable intent in any culture for any individual. Individual development in moral reasoning is a continual differentiation toward moral universalizability (Hare, 1952; Turiel, 1980; Habermas, 1982; Kohlberg, et al., 1983). On the other hand, Brandt (1961), Frankena (1973), and Kohlberg, et al. (1983) argue that moral relativism is based on a set of confusions. Moral relativists confuse between customs or cultural conventions which are culturally variable and relative, and morality which is universal and prescriptive. The variation of customs and cultural conventions does not imply differences in basic values or in the ways of moral judging. Moral relativists also confuse between moral impartiality or fairness and value neutrality which is an untenable position. They also fail to understand the distinction between the belief in relativism and the belief in the liberal principle

of tolerance and respect for the liberty of conscience of others. The principle of tolerance and fairness in judging other persons and cultures is in itself a prescriptive and universalizable moral principle.

Moreover, the phenomena of morality and valuation, as interdisciplinary challenge, are so complex and dynamic that description fails to give us its ultimate causal dynamics. Interpreting values as the existing behavioral patterns, the reinforcing effects or the social institutions, and judging them as relative and contextualistic did not contribute so far to understanding the functional and causal dynamics of valuating phenomena, or to explaining either ideological conflict and historical change, or individual pathology and health.

"Models of man" paradigm. The third paradigm in this global approach is what may be called the models of human perspective (Maslow, 1968; Inkeles, 1969; Inkeles & Smith, 1974). Such models are mostly multidimensional as they include cognitive, affective, and personal characteristics, besides values.

This paradigm may date back to Carlyle's heroes worship perspective (1928) which identifies the worship of heroes as one of the most important sources of human values. Humans do not only imitate others, but also tend, at least

some of them, to set examples and precedents for new principles and behavioral patterns and to idealize them. Imitating and identifying with a real or idealized hero who exemplifies some honored new or old principles or patterns of actions are deemed as critical sources to new ideologies, religions, value systems, and historical movements.

The values in this paradigm are scaled to an ideal or actual self-actualizing or modern man in the advanced civilized western societies, or to the urban sophisticated man as reference criteria. What ought to be here is an actual living model. The theorists in this paradigm prescribe what is normal, what is healthy, and what is the trend of the future; in other words, they prescribe evolution and history their own way and try to pioneer future societies or future international cultural systems through defining the actualizable ideals and values of humans.

The main difference between models of the human paradigm and the "ought to be" model is that what the former is asking is not what should be the values of man, but rather what are the existing values of the best human being (the self-actualizing or the modern or the urban man), and what qualities the best men or women have that should be prescribed and used as reference criteria for others. These qualities are objectively observable, describable, and

measurable as they characterize the healthy human specimen and can be descriptively studied as a naturalistic value system with which the hopes and the values of the observer have nothing to do.

For Maslow (1968), self-actualizing values include also goals which are real, even though not yet actualized. The human being is simultaneously what he is and what he yearns to be. Such qualities are embryonic potentialities belonging to man's species, just as his arms, legs, and brain. Self-actualization is the process of striving to fulfill one's talents, capacities, and potentialities for maximum self-realization, ideally with integration of physical, social, intellectual, and emotional needs. It is the need for growing in a direction toward psychological health. Maslow (1968) states some of the main characteristics of such a human being:

Among the objectively describable and measurable characteristics of the healthy human specimen are: 1) clearer more efficient perception of reality; 2) more openness to experience; 3) increased integration, wholeness, and unity of the person; 4) increased spontaneity, expressiveness, full functioning and aliveness; 5) a real self; a firm identity, autonomy, uniqueness; 6) increased objectivity, detachment, transcendence of self; 7) recovery of creativeness; 8) ability to fuse concreteness and abstractness; 9) democratic character structure; 10) ability to love (p. 157).

The contrast between "what is" and "what ought to be" is in part a false one. Descriptive naturalistic science of human values studies which values human beings' stand and struggle for to improve and potentiate themselves and which values they lose when they get sick. This paradigm suggests a measurement strategy to scale a subject on a continuum with two extreme points such as self-actualizing vs. alienated, or modern vs. traditional, or urban vs. rural (or tribal).

The study of social change dynamics cross-culturally brought about the similar concepts of modern humans, urban humans, individual modernity, and individual urbanity. Modernization theorists, such as Lerner (1965), Bendix (1967), Inkeles (1968), Inkeles and Smith (1974), Dawson (1975), Schnaiberg (1970), and Kira (1978), view modernization as global historical mechanisms which tend to change individuals and societies worldwide from traditional to modern, and communities from tribal to rural to urban. The models of modern and urban persons are natural models which characterize modal men or women living in advanced societies or urban communities. The study of this dialectical movement includes both "is" and natural "ought" and describes values as dynamic individual, societal, cultural, and historical evolutionary processes.

For Lerner (1965), empathy, which is the source of values in some other theories, is what separates the modern from a traditional individual. For Inkeles (1969) and Inkeles and Smith (1974), individual modernity constitutes a syndrome somewhat similar to the syndrome of self-actualizing individuals. It includes characteristics such as openness to new experiences and technologies, readiness for change, independence from traditional and religious authorities, belief in the effectiveness of scientific methods, high aspiration for mobility and growth, planning for personal life, participating in the community activities and politics, and interest to follow world and national news.

Kira (1978), for example, finds, in an empirical causal study on tribal and rural communities and in the city of Fes in Morocco, three distinct causal models of individuals and communities. The first is "Ouzaga" causal model which represents a primitive or simple individual or community which is characterized by a dominant strong extended family. The constant or dominant variable in the model is the family value of socialization, and the most active variable which allows for the change in the model is participation in community activities and family life. The second model is a "Boulawan" model which represents a tribal, rural, or traditional individual or community. In this

tribal model, ethnic solidarity is the most constant variable and communication, e.g., mass-communication, is the most active variable which allows for future change in this model. The third is a "Fes" model which represents the urban model. The constant variable here is "tension management mechanisms," and the most active variable, which allows for future change in it, is the political attitude of ideology.

Kira suggests a multilevel, multistage sequence of development from tribal to rural to urban on a local or national level, and from traditional to modern in an international or global level. The mechanisms of core-periphery, of centerpeting, and centrifuging help in accelerating or inhibiting these evolutionary processes. The urban individual is characterized by displaying increasing interest in the national and international ideologies, and in the political process in his new urban life, and is more inclined to adopt different mechanisms to manage the increasing tensions in this urban environment.

The urban individual has most of the characteristics of the modern individual. The concern of the post-urban or post-modern individual goes beyond his national and limited ideological boundaries to the international community of his human species at large. The urban individual represents a significant shift from the tribal individual who is more

concerned for ethnic solidarity with his tribe or with his limited local community or group. He represents a significant shift, as well, from the primitive individual who is more concerned for the values of his extended family. The individual urbanity model is a natural dynamic changing model with specific different values.

While models of the human paradigm have more explanatory power and are more comprehensive and consistent, they do not use, so far, this theoretical richness to innovate new techniques for psychological and social interventions. However, this paradigm has undergone a thorough-going barrage of criticism; some of the arguments presented against it are reviewed next.

Gusfield (1967) and Smith (1973) reject this bipolar concept which is based on such discrete dichotomies as traditional vs. modern, tribal vs. urban, as they assume the superiority of one model over the other. They emphasize, for example, that what is modern and what is traditional are not necessarily always in conflict and do not represent a contrast between bad and good. The traditional patriarchal authority systems found in most Japanese businesses, for example, proved to be effective and innovative and result in a superior performance.

International modernization and local urbanization mechanisms, which suggest a definite, irreversible universal sequence of convergence with equifinality in the movement toward a seemingly fixed end stage of development, have been challenged on both a theoretical and empirical basis (Guessous, 1967). Bendix (1967) and Riggs (1964), for example, stress the need to evaluate contemporary development in various societies in terms of the unfolding of traditional forces inherent in them, rather than their alleged movement toward a seemingly fixed end stage of development. Modernization, for them, is basically a specific historical process consisting of the spread of the impact of western culture throughout the world. Eisenstadt (1977), for example, talks about breakdowns of modernization in certain societies. Political decay may occur and halt a certain transitory stage.

There are ideological biases always involved in such models. Dependence theorists, such as Nettle and Robertson (1968), Amin (1970), Galtung (1971), Frank (1972), Heinz (1972), Wallerstien (1974), and Caporaso (1978) argue from different perspectives that the modernization model is a western cultural bias and is a part of an existing international power and ideological struggle to dominate the world. For them, the world must be understood as basically a

single integrated unit with cores and peripheries at certain moments of its ongoing history. The mechanisms of core-periphery work to accumulate in the center, enhance its control, and increase the dependence of the periphery. This assumed development from tribal to urban and from traditional to modern is highly dependent on the dynamics of political institutions in the center which, mostly, are different forms of state capitalism or internal imperialism and which are controlled and dependent, in their turn, on the international advanced centers of capitalism or communism which are competing for the control of the peripheries. Modernization for them is an existing global mechanism that works to insure cultural and structural dependence of the peripheries. Marxist theorists have their similar version of such stages and their equifinal conversion model from feudalism, to capitalism, to socialism, to communism, to which similar critical points may apply as well. It may be concluded in this perspective that the ideological and international value conflict, which is part of the overall power struggle in the world system, is an empirical fact which is highly significant to value theory and should be evaluated extensively.

The sources of values here are mostly the patterns of power and control inside the system, such as the authority

patterns of parents over their children in the family system, the patterns of control of the central state over their institutions and communities in the national system, and the patterns of control of international cores over their peripheries in the international system.

These three global macro-models: "ought to be," "what is going on," and "individual modeling," seem to form a dialectical movement from thesis, antithesis, to synthesis in the last model, in our scientific endeavor to discover value domain from its differential parallax. However, each of these three different perspectives captures some different angles of the same phenomena and need not to be considered so paradoxical as they seem to be. While these macro-models have more global scopes that overview the phenomena of human values, most of them are less precise, less specific, and less useful than the micro-models.

The Value Micro-Analysis Models

Affection and arousal (or energy level) theories. To value something, or to favor or not to favor it, is to be in an emotional state of liking and disliking and not in a cognitive state. The emotionalist position ignores rationality as the source of moral or value judgment; the emotional stability and self-control are central to morality and moral development.

Some theorists, such as Hume (1930), Smith (1949), and Hoffman (1984), try to derive moral judgments from the sentiments of empathy and sympathy. The psycho-dynamics of personality, which include arousal affection, desires, motivation, and need satisfaction, are considered by several psycho-analysts, political psychologists, learning and socialization theorists as the basic source of values and morality. While Freud (1933) and his followers put more emphasis on the superego, Erikson (1964) and others put more emphasis on the ego development as the source of values and morality. While political psychologists, such as Eysenk (1954), Adorno, Frenkel-Brunswik, Levinson and Sanford (1950), and Kira (1978) argue that personal dispositions, like authoritarianism, conservativism, or liberalism and changeability or adaptability, are crucial in defining the individuals' attitudes and values, educational psychologists, and learning and socialization theorists, such as Baumrind (1980) and Henry (1983) stress more the importance of structural patterns on motivational environments and the different styles of energy and aggression management within the environment rather than within the individual.

For Freud (1933), values and morality are products of the superego which is developed out of the child identification with his parents and the assimilation of their

standards regarding what is bad and what is good. This internalization of parental authority enables the child to control his behavior in line with their wishes. The parent within the child functions as a kind of internal monitor which tells him whether his behavior is right or wrong and punishes him when he transgresses. It is because the superego is the heir of parental authority that it entails feelings of worth or worthlessness and guilt.

The superego is made up of two sub-systems: the ego-ideal and conscience. The ego-ideal corresponds to the child's conceptions of what his parents feel is morally good. Conscience, on the other hand, corresponds to the child's conceptions of what his parents feel is morally bad. Ego-ideal and conscience are opposite sides of the same moral coin. Superego is created and conditioned by parents' punishments and rewards which are either physical, such as painful assault, or giving objects that are desired by the child, or psychological, such as giving love and approval or love withdrawal. The bestowal and withdrawal of affection derives its power by virtue of its connection with the satisfaction or dissatisfaction of the child's basic needs. Rewards and punishments are conditions that reduce or increase inner tensions. Like parents, the superego enforces its rule over the individual's ego by physical or

psychological rewards and punishment. The inner psychological rewards and punishment are, for example, feelings of pride or self-love, or feelings of guilt and inferiority (or self-hate).

The superego is the representative in personality of the traditional values and the ideals of society as they are handed down from parents to children. In this connection, it should be borne in mind that the child's superego is not a reflection of the parent's conduct, but rather of the parent's superego. An adult may say one thing and do another, but it is what he says backed by threats or gifts that counts in the shaping of the child's ethical standards.

Freud believes that the formation of the superego is most intimately linked to the resolution of the Oedipus complex at the age of five. In terms of Freud's theory, the first and most important source of moral authority in the child's developmental history is the parent, however, Freud (1933) makes it clear that the particular aspect of the child's superego does undergo change:

In the course of development, the superego also takes on the influence of those who have stepped into the place of parents: educators, teachers, people chosen as ideal parental figures; it becomes, so to say, more impersonal. Nor must it be forgotten that a child has a different estimate of his parents at different periods of his life. At the time at which the Oedipus complex gives place to the superego, they are quite magnificent, but later, they lose much of that (p. 64).

In the Freudian analysis, the morality of the parent is gradually replaced after the resolution of the Oedipus complex (at about the age of five) by other different authority figures; then the superego may be said to be the product of socialization and the vehicle of cultural tradition as functions for controlling and regulating those impulses whose uncontrolled expression would endanger the stability of society.

The prohibitions of the conscience are inhibitions that block the discharge of instinctual energy. A person who has a strong conscience is constantly on guard against immoral impulses. He spends much of his energy for defense against such impulses. The ego-ideal strives for perfection. A person who had a lot of energy tied up in the ego-ideal is idealistic and high-minded. The dynamics of personality consists of the changes in the distribution of energy throughout the personality. There is only so much available energy and no more. This means that if the ego gains energy, the id or the superego, or both, have to lose energy. The energizing of one system of personality means the de-energizing of other systems. The conduct of a person is determined by these dynamics. If the bulk of energy is controlled by the superego, his conduct will be moralistic; if it is controlled by the ego, his conduct will be

realistic; and if it is retained by the id, which is the source of all psychic energy, his actions will be impulsive. What a person is and does is inevitably an expression of the way in which the energy is distributed. However, it is not enough by one way or the other to have specified rules of conducts or concentrated energy if you do not have the ability to inhibit, to restrain, and to control whatever energy or contrary impulses may come up. According to one theory, this ability to inhibit, which is central to moral behavior, is one of the functions of the ego rather than of the superego.

Erikson (1964) developed a theory of moral development based on the development of ego functioning. The development of ego strength is the development of human virtues. Human virtues are certain qualities or inherent strengths which are related to the process by which ego strength may be developed from stage to stage and imparted from generation to generation. The strong ego is the precondition for freedom of choice, a sense of wholeness, and a sense of centrality in time and space which are the source of morality and values. The emergence of the basic virtues seems indispensable to an appraisal of the process man partakes. Hope, will, purpose, and competence are the rudiments of virtue development in childhood. Fidelity is

the adolescent virtue. Love, care, and wisdom are the central virtues in adulthood. These qualities depend on each other. Love cannot be reciprocal until fidelity has proven reliable. Each virtue is vitally interrelated to other segments of human development, such as the stages of psycho-sexuality, the psycho-social crisis, and the steps of cognitive maturation.

Alternative psycho-dynamic views of the development of morality have been offered by a number of theorists, especially in the fields of political and education psychology. In political psychology, two main trends have been emerged in discovering the basic personal dispositions underlying human attitudes, beliefs, and values. The broad underlying hypothesis for these theorists is that the political, economic, and social convictions of the individual often form a broad and coherent pattern which reflects a deep lying trend or disposition in personality. The first theoretical trend is characterized by suggesting theoretical concepts or constructs such as authoritarianism (Adorno, et al., 1950), which is a pattern of personality characteristics that predispose the individual toward prejudice, fascism, and anti-semitism, or tolerant personality (Martin & Westie, 1959) and dogmatism (Rokeach, 1956, 1960), which is expressed as ideological irrational beliefs. Such concepts are defined

first by theoretical analysis and then substantiated by research.

The second trend in political psychology tradition is characterized by using factor analysis to find the underlying factors of the whole attitudes domain, and then theoretically interpreting these factors. Thurston (1934), Ferguson (1941), Eysenk (1954), and Wilson (1973) are examples of political psychologists who follow this trend. Most of them find, similarly, two different factors underlying attitudes and values domain. Eysenk (1954), for example, finds two orthogonal factors; the first is conservatism/radicalism, and the second is interpreted as toughmindedness vs. tendermindedness. He also finds that authoritarianism is an oblique factor on his two orthogonal factors. Kira (1980) argues on both an empirical and a theoretical basis that the resulting concepts from both trends are culture specific, as they are highly saturated with urban and modern western culture in its historical contexts and do not apply, for example, to tribal or rural communities. He provides, from his studies on different tribal, rural, and urban communities, an empirical evidence that the concept of dynamic adaptability of changeability (plasticity) is a more generalized dimension in personality as it underlies the factors proposed by both trends and is the source of values

and valuation processes. He finds that this dimension underlies a broader syndrome which includes political attitude (conservatism/liberalism), ethnic solidarity (group feelings), and empathy.

In Educational Psychology, learning theorists put more emphasis on the liberal or authoritarian environmental arrangements in child rearing techniques and in the whole socialization process. Hoffman (1970), Baumrind (1980), and Henry (1983), for example, review a huge body of research on the different effects of love withdrawal, reasoning, and other techniques of child rearing which may be labeled as authoritarian or liberal. Flanders (1970), Donaldson (1978), and Bantock (1980), for example, study the effects of teaching styles and classroom liberal or authoritarian climates. Though the conclusions of these studies are beyond the scope of this review, most of them suggest that these dispositions are mostly culturally transmitted characteristics and have crucially differential effects on developing both cognitive and social skills of the student.

Criticisms of emotional psycho-dynamics models are provided by the theorists of the other models, especially those of the cognitive model which will be elaborated in the following section. However, emotional models may fail to explain convincingly generational conflicts, the revolt of

youth, or the bio-social cycles of value change over a life span. The raw energy, the dispositions, and the emotions may not be that important in themselves in defining values and morality, but rather that dynamic process by which the individual controls releasing or inhibiting his emotions and disposition, or generating, mobilizing, or concentrating his energy, which seems to be basically a non-emotional process (and may be a non-cognitive, as well), that is a part of a basic life process which triggers the individual's valuating mechanisms and generates his values.

The cognitive model. The cognitive model refuses the assumption that values are mainly affective or energy products. For the theorists of this model, values belong more to the cognitive domain. Evaluative and moral judgments are part of the whole cognitive domain and develop through the whole cognitive maturation process. To feel bad or good is a result of a cognitive evaluation.

There are two main trends emerged within this cognitive model; the first is horizontal and more general as it focuses more on the structure of evaluative judgment as a part of the cognitive domain basically in the mature adult who already reached the formal operational stage, and the second trend is developmental and more specific as it puts

more emphasis on the development of moral evaluative judgments across life spans.

Mandler (1982) is one of the theorists of the first trend. He analyzes the structure of values and provides a detailed model for the valuation processes which focuses more on the non-developmental aspects of value judgment. He identifies three sources for value judgments. "The sources are the innate approach avoidance tendencies, the cultural predictions, and the internal structure of the target-event/object" (Mandler, 1982, p. 3). He differentiates between descriptive and evaluative cognitions. Values are cognitions that are incorporated in subjective emotional states. Structural valuation requires access to stored descriptive cognitions. Structured valuation is based on a relationship between the structure of the target event and some stored mental representations. New encounters are evaluated against existing schemas. The congruity between an event and the relevant schemas' relational structures is suggested to be the basis of some judgment of values. Such congruity gives rise to valuation of familiarity, acceptability, and a basic sense of liking. The positive valuation of the familiar is based on congruity and assimilability; while incongruity and accommodation pressures

lead to arousal and to evaluative states that may be positive or negative.

It appears that evaluative judgments cannot be reduced to some objective attributes of the object or the event that is judged, but is more properly addressed by the internal structure of the target-event. They are influenced more by prior experience and by structural relations that are descriptive. Structural descriptions lie in the heart of practically all evaluative judgments and actions. In other words, judgments of values arise out of the structural congruity between event and schema.

More complex mental activity is required in the case of incongruity. Whether a conscious judgment of value occurs at all will depend on a host of factors. Most of them are contextual and related to the intentions of the actor and the demands of the contexts. Incongruity may lead to the activation of a new schema that fits the new information. The interruption of current tendencies and expectations caused by incongruity is an important condition for the initiation of autonomic arousal. The evaluative cognitions that accompany arousal determine the quality of its emotional state. "The emotional intensity depends on how much of discrepancy (or incongruity) exists between what is encountered and what is expected" (Mandler, 1982, p. 22).

For Mandler (1982), to make positive value judgments involves:

- 1) An inspection of the reference event that initiates automatic processing, through various levels of schematic representation, of the evidence it presents.
- 2) A schema of the reference event that is activated both by the intentions of the actor, and by the evidence present in the environment.
- 3) The evidence generated by the reference event, and the generic schema that has been activated by the intention/instruction produces some degree of congruity.
- 4) A constructive process generates a conscious state that incorporates schema congruity, intentional states, and other relevant schematic evidence (p. 20).

Piaget (1962) and Kohlberg (1976) represent the second trend which is more interested in the development of moral judgment than in the evaluative judgment per se. For Piaget (1962) and Kohlberg, et al. (1983), the justice domain is the structure of conflict resolution for a dilemma of competing claims between or among persons. The justice operations of reciprocity and equality in social interactions are parallel to the logical and mathematical operations of reciprocity and equality in science and mathematics and in the physical world. In both the logical and justice domains, the use of operations implies equilibrated or reversible systems which are called hard structure.

Piaget (1962) suggests that there are two broad stages in this hard structure development. The first stage (age 3-10), which he calls the period of moral realism, is

characterized by believing in the absolute fixity of moral rules, by judging others' behavior on the basis of consequences and not on the basis of intent, by thinking that a given action is either completely right or completely wrong, and by assuming an absolute connection between wrong doing and punishment. The second stage of morality, which characterizes children age 9 or 10 and older, is called the morality of cooperation or reciprocity. By this time the child understands that rules are established and maintained through social agreements and that they can be changed. The child's egocentrism has declined and he begins to make moral judgments about others' behavior, namely on the basis of their intentions rather than on the consequences. The child can understand that there may be several points of view on a given issue and that punishment and reward for a given action do not automatically signal the badness or goodness of that action.

Kohlberg (1969, 1976) is dissatisfied with Piaget's initial formulation of moral development; however, he finds that the most solid and replicable of Piaget's work is the suggestion of a connection between the child's moral development and his overall cognitive development. Kohlberg's studies have dealt primarily with children from age 10 through young adulthood. Using moral dilemma

techniques, he concluded that there are three main levels of morality development with two sub-stages within each level which form a hierarchy of increasing adequacy:

Level 1: The pre-conventional or pre-moral level (typical of children up to the age of 9) - At this level the child's moral judgments are based on such external criteria as whether the person is punished or not. The standards of right or wrong are absolute and are laid down by authority such as parents.

Stage 1: Punishment and obedience orientation - In this stage, the physical consequences of an action determines its goodness or badness. The child's own actions are governed by a desire to avoid punishment. He obeys because adults have superior power, not because they are right in some abstract sense.

Stage 2: Instrumental relativist orientation - This is a kind of naive hedonism; things that bring pleasant results are good and those that bring unpleasant results are bad. There are some signs that the child is attentive to other people's needs, but that attention seems to be conditional. The child will help someone else if that person will help him in return.

Level 2: The conventional level (typical of nine to twenty year olds) - At Level 2, the consequences of actions begin to be less important. The individual's judgments are, instead, based on the norms and expectations of the group.

Stage 3: The good boy - nice girl orientation - The focus in Stage 3 is on the smaller group to which the child belongs (family-school-peers). Good behavior is that which pleases others. In addition, the child begins for the first time to make judgments based on intentions.

Stage 4: The law and order orientation - In Stage 4, the focus has shifted away from personal and local groups to the larger society. What is right is what the law says is right, and the law is seen as fixed. Doing one's duty, respecting authority, and maintaining the social order as it already exists are all seen as "good." There is no recognition of the arbitrariness of the laws of a particular society, or of the changeability of those laws. Religious laws, too, may be appealed to as absolute in this stage.

Level 3: The post-conventional, autonomous, or principled level (usually reached only after the age of twenty and by only a small proportion of adults) - At this level, the child (actually a young adult at this point) recognizes the arbitrariness of social and legal conventions. Laws are arbitrary and can be changed. The person attempts to define moral values that are separate from the group norms.

Stage 5 - In Stage 5 the adult recognizes that the laws of a given society are arbitrary and changeable, but at the same time there is an emphasis on the need for orderly change and for working within the system. For aspects of behavior which are not governed by laws, right and wrong are personal decisions, but emphasis is placed on the importance and binding quality of personal agreements and contracts.

Stage 6: The universal ethical principle orientation What is right in Stage 6 is a question of the individual conscience; judgments are based on fundamental and universal principles. Each action to be judged is analyzed in terms of the network of basic principles (Kholberg, 1969, pp. 164, 165).

Kholberg, et al. (1983) admitted that he no longer claims that the empirical work has succeeded in defining the nature of the sixth stage, and the existence and nature of such stage is still a matter of theoretical and philosophical speculation. Kholberg's research and theory emphasizes that these stages do develop sequentially without skipping and represent a rational reconstruction of the ontogenesis of justice reasoning. They are hard structural stages with the assumption of the primacy of justice as the basis of the moral domain.

In recent works, Kholberg, et al. (1983) postulated a soft hypothetical seventh stage which characterizes the

development of the ethical and religious orientation of the adult. The seventh stage is larger in scope than the justice orientation which the theory of the six hard stages addresses. This is based on constructing a sense of identity or unity with being, with life, or with God, and appears after the attainment of post-conventional justice reasoning. To answer the questions "why be moral?" and "why be just?" in a universe filled with injustice, suffering, and death requires one to move beyond the domain of justice and derive replies from the meaning found in metaethical, metaphysical, and religious epistemologies. The development of soft stages toward such cosmic perspective informs us of trends in human development which cannot be captured within a conceptual framework restricted to the study of justice reasoning per se.

Kohlberg has found that the level of moral judgment correlates moderately with the child's measured IQ which underlines the relationship between his overall cognitive development and the development of moral judgment. He has also found evidence that this sequence occurs in widely different cultures. However, the specific cultural experience does make a difference in both the rate at which the child goes through the stages and the final end stage reached.

Kohlberg has emphasized that the ability to control and to inhibit develops with age and is related in some ways to the child's cognitive development. The ability to control requires some ability to anticipate, to focus attention for periods of time, and to understand causal relationships. Children with higher IQ's are more likely to show resistance to temptation and ability to control. The cognitive developmental thesis has structured and channeled virtually most of the research in moral theory for almost the last two decades. However, there is a widespread concern that there may be things wrong with this cognitive developmental viewpoint.

Henry (1983), for example, argues that her empirical findings contradict Kohlberg's main thesis that people with more advanced moral reasoning are likely to be more advanced in general cognitive competence. She argues also that her findings contradict the characterization of the stages as hierarchical integrations in the sense that each stage incorporates, modifies, and extends the distinctions and the discriminations made at previous stages and that at each stage people make differentiations that they previously did not. Moreover, she concludes that Kohlberg's hierarchy is differentiated not by structure or form, but simply by the ascribed source of moral authority in each stage.

Blasi (1980) argues that the relationships between moral judgment, resistance to temptation (self-control), decision making, and actual behavior are not consistent. Situational factors proved to be very strong. Therefore, it is difficult to use this model to predict or to adjust behavior; however, Kohlberg and Candee (1984) suggest that the relationship of moral stages to action is a monotonic one. In other words, the higher the stage, the more likely action will be consistent with the moral choice.

Simpson (1974), Sullivan (1977), and others challenge, on both an empirical and theoretical basis, the universality of the model. They argue that it is culturally and ideologically biased as it implies a scale for grading some cultures as morally superior to others. Besides, it includes a hidden liberalism bias.

Sullivan (1977) argues that the model is insufficient as a theory of moral development. The model ignores such factors as emotions and moral imagination which are basic to moral development.

Gilligan (1979, 1982) points to the possibility of bias against females and suggests a second moral orientation different from justice orientation based on the ethic of care and response which fits better female morality. She distinguishes between three levels in care orientation: a

pre-conventional level which is primarily egocentric, a conventional level which is primarily concerned with caring for others, and finally a post-conventional level which balances care for self and care for others. She argues that care and responsibility orientation do not rest on abstract principles, but rather on contextually relative perceptions of the factual moral situation and its psychological implications. Gilligan's perspective may be very close to Erikson's theory. However, Kohlberg, et al. (1983) states and accepts the main biases of stages theory which represent his metaethical assumptions:

- 1) Value relevance of definitions of the moral (as opposed to value-neutral definitions);
- 2) Phenomenological definitions of morality implying moral judgment (as opposed to moral behaviorism);
- 3) Moral universality (as opposed to cultural and ethical relativism);
- 4) Prescriptivism as the use of moral judgments (as opposed to descriptivism or naturalism as interpretation of moral judgments);
- 5) Cognitivism as the reasoning element of moral judgment (as opposed to emotivism);
- 6) Formalism as defining the nature and competence of moral judgments (as opposed to definitions in terms of content);
- 7) Principledness as the rule or (principled) governance of moral judgment (as opposed to act theory);
- 8) Constructivism (as opposed to either empiricism or apriorism);
- 9) To this metaethical starting assumptions, we must add a more normative or substantive assumption, the assumption that the justice is primary, that moral problems as dilemmas are fundamentally problems of justice (pp. 66-67).

Decision-making and conflict resolution models.

While most of the theories reviewed incorporate values and valuitive processes, either in the arousal-affective (energy) level or in the cognitive or information processing level, most of the decision making theorists do make a clear distinction between the cognitive, the valuitive, and the affective-arousal (or stress) levels. The valuitive process in this perspective seems to be a distinctive dimension and separate, at least theoretically, from the cognitive and affective processes. There is almost a consensus among them that there are two components of the decision making process: information processing, which includes assessment of the probabilities associated with the occurrence of particular events in the environment, and the valuating processes, which result in different kinds of decision making.

In the decision making literature, two kinds of models emerged -- the prescriptive models and the descriptive models. Prescriptive models, like those of Simon (1976), Gelatt (1962), Katz (1966), Krumboltz, Mitchell and Jones (1976), and Janis and Man (1977), are basically logical or conceptual models that try to specify the heuristics or the ideal steps of decision making that should be followed to maximize the expected gains and minimize the anticipated losses. Clarifying one's values and stimulating his

valuating processes, besides gathering sufficient relevant information about the alternatives, are critical to such maximization.

The descriptive models, on the other hand, are attempts to specify how people actually make decisions. People rarely make decisions in accordance with the elaborate rational methods. Usually more people comply to the ongoing trend or the others' advice and pressures, or make it on their own impulsively or on an intuitive basis. They may postpone the decision or accept the event in a fatalistic way, or simply take the indecisive position. The requirements of the prescriptive decision model usually far exceed the decision maker's time, energy, and information processing capacities.

The literature from politics, law, and organizational management suggests that many individuals, even those who plan in a similar way prescribed by the optimizing models, tend to adopt a variety of time saving strategies, like a single golden rule or a "satisficing" strategy. An example of single rules, according to Schwartz (1970) and Bedau (1979), is the ethical or moral imperatives (categorical imperatives) which the individual perceives or adopts as behavioral principles and often makes his decision according to them with almost no consideration for alternatives.

Another example for this kind of strategy is following a pragmatic or generalizable (conditional imperatives) rule, such as "if it has worked before, do it again, or do the opposite if it has not."

A "satisficing" strategy, according to Simon (1979), is one in which a search is conducted until an alternative that is good enough (not necessarily the best one) is discovered. Because alternatives are usually considered consequentially, the decision maker has only to compare the new alternative to the present state of affairs to see if it significantly improves the present situation. A series of "satisficing" decisions may lead to what Braybrooke and Lindblom (1970) have called "disjointed incrementalism," or "muddling through"; it is to move in small and incremental steps as problems arrive rather than through a comprehensive plan. Such strategies are used, not only because they do not over burden the limited information processing capacities of humans, but also because they may avoid the risk of radical decisions in an uncertain environment and in an incomplete or insufficient information processing situation.

Etzioni (1967) argues that individuals or organizations are using mixed scanning strategies, which means that they use more optimizing strategies when they are facing or making strategic life time decisions and more

"satisficing" or other time saving strategies in their implementation and in the less important decisions.

Information processing theorists, such as Sternberg (1985) and Shiffrin and Schneider (1977), suggest two levels of experiential information processing: the automatized and the non-automatized levels. They also differentiate between strategy-free tasks and strategy-intensive tasks. These studies seem to be relevant in this context, as the former kind of information processing and also the kind of tasks, most likely, require more optimizing decision making strategies, while the second may require other kinds of time saving strategies. Some decisions are automatized as a part of daily life strategies to deal with recurrent cycles or expected routines, and others are new and need some kind of optimizing strategies.

Dinklage's (1968) study of the types of strategies that adolescents use to make decision shows that 25% of all reported decisions were made using a planning (or optimizing) strategy. The remainder of the decisions were made using impulsive or compliant (each accounting for 18% of the reported decisions), delaying (11%), fatalistic (10%), or agonizing, intuitive, or paralytic (5% to 6% for each) strategies. Two-thirds of the students used the same

strategy consistently, while the remaining one-third tended to switch strategies on different decisions.

Research on persons who are chronically indecisive suggests that anxiety is often involved in different decision making, and underline the affective-arousal dimensions of this process. Janis and Man (1977) hypothesize that excessive stress or anxiety seems to result in avoidance of decision making or inability to decide. Attribution theory (Ross, 1977) and self-efficacy theory (Bandura, 1977) suggest that much of this anxiety may be due to inaccurate cognitions about causality (faulty information processing) and personal ability, or to accurate attributions and negative cognitions about self-efficacy (faulty self-valuation).

Decision making approach has to be credited for making clear distinctions in most of its models between information processing (cognitions), valuation, and stress (arousal) dimensions. However, most of these models tend to interpret values as only static reference criteria or standards for decisions and not as valuating adaptive processes as well. The relation between judgment, decision making, and decision execution (behavior) is still not clear in their theory and research.

Action level. The problem of the perceived discrepancy between the values declared by an individual,

institution, or even a nation, and his actual behavior is one of the most challenging dilemmas in value theory and research. This discrepancy on the individual level applies to the child as well as the adult, and to the typical individual as well as the leader.

Hartshore and May's (1930) classical studies discover that many children who were able to describe right kinds of behavior in hypothetical situations indulged in wrong behavior in real life situations that call for moral judgment. Even the child who was rated as among the most honest in a group would behave in a dishonest way under certain circumstances. Lickona (1976), reviewing research carried out in the forty-five years since Hartshore and May published their findings, reported that "a huge and ever expanding body of research . . . has replicated Hartshorn and May's basic findings: variation in the situation produces variation of moral behavior" (p. 15).

In the study of corporate values, leadership, and organization culture, the same theoretical problem emerges. Argyris and Schon (1974) note that most managers and leaders whom they have observed operate from two different "theories": (a) an espoused theory, consisting of the goals, assumptions, and values that the person says guide his or her behavior, and (b) a theory in use, consisting of the implicit

assumptions that actually guide his or her overt behavior. Espoused theories vary widely from autocratic to participative, but when leaders are actually observed in groups, it turns out that their theories in use almost uniformly reflect what Argyris has called "model one." This model of behavior is built on four basic assumptions or "governing variables": (a) that one must achieve one's own goals as one sees them; (b) that one must win rather than lose; (c) that one must minimize eliciting negative feelings in relationships; and (d) that one must be rational and minimize any emotionality.

These governing variables, Argyris claims, lead to behavior which is controlling of others, which maximizes one's own safety, and which leads to minimal confrontation of any emotionally charged issues. The net result is what he calls self-sealing process, or single loop learning, in which one sets up the situation to confirm one's own premises but never learns whether or not those premises themselves are valid. In the end, the basic assumptions upon which the model is based will never be tested in public, thus preventing the leader from learning potentially more effective behavior.

Argyris and Schon (1974) studied leaders' espoused and "in use" theories through analysis of tape recordings and

scripts in which both overt verbal behavior and the private thoughts which accompany the overt behavior one elicited are categorized. The striking thing in these protocols is the degree to which the overt behavior is in direct contrast to the person's inner feelings. They found also that changing the espoused theory through training does not follow by changing the actual contextual behavior.

Shein (1980) argues that Argyris' initial assertion that virtually everyone operates according to model one and the validity of his critical assumptions has not yet been demonstrated by any broad scale research program. However, the discrepancy between elicited verbal values, judgments, decisions, and action is well documented in several research results. "Espoused values" and "values in use" hypothesis adds up to value contextuality and relativity hypothesis and posts new challenges for understanding the realities and dynamics of human values.

These different micro-models which have been reviewed provide different perspectives about the sources and the nature of human values. While some models consider values as basically either affectional disposition or part of the emotional dynamics and emotional development, either in the superego or the ego level, other models consider them as part of the cognitive syndrome, and thus they display their own

cognitive dynamics and development. However, much of the decision making models theorize them as separate and distinct dimensions in personality which may have their own specific dynamics and development. Action models, on the other hand, give us a real theoretical challenge which has yet to be met and solved. These models discover this startling empirical fact, which is what the other models are arguing about, are not our actual values or our values dynamics by which we act and live. This applies to children as well as to leaders. Values at these emotional cognitive levels may represent social, political, and economic patterns or pressures which the society would like to program us to be, but, as a matter of empirical fact, this is not the way we act. In other words, human values, at these levels of analysis addressed by these models, may guide some of our thoughts, feelings, verbal behavior, and sometimes our decisions, but not our real actions, which may even display the opposite. They also seem to fail to explain the conflict of generations and the radical change in individual and social life which seems to be epidemic in our contemporary societies.

Any valid model for human values should explain the dynamics which produce the whole gamut of human behavior and elucidate this perceived discrepancy between verbal and actual behavior. This is exactly the problem which will be

addressed and the challenge to be met in the model which will be proposed in the rest of this thesis.

CHAPTER 2

The Meta-Model:

The Theoretical Assumptions of the Model

For the Dynamics of Value Processing

Each of the macro and micro models display various perspectives which view the same phenomena from a different angle and thus do not necessarily conflict with each other. However, this single viewpoint never encompasses the composite whole or the panoramic scene.

Clear distinctions and an adequate global overlook at this value parallax from inside and outside are needed to integrate the valid perspective of each in a unified theoretical, dynamic model that is useful and testable. Any model which may add to our theoretical insight and advance the present state of knowledge in value domain should be applicable to both micro- and macro-analytic levels. It needs to address aggressively and creatively the controversial issues which the other models raise or fail to raise or solve. In other words, the good conceptual model that needs to be presented should be more comprehensive, explicit, internally consistent, parsimonious, testable, and useful.

The discrepancy between verbal and actual values and the problem of relativity and contextuality vs. universality

and prescriptiveness of values seem to be some of the crucial challenges which have yet to be met in any theoretical endeavor in human values. In this introductory chapter, the basic assumptions (or biases) that cut deeply into the core of a model for the dynamics of value processing will be stated and discussed. These assumptions define the nature of the relationship between the environment and the individual. On the individual, or micro, level, they identify the structural sources of valuation (the self, the superego, and the biological and neurological maturities) and their functional value processing mechanisms (signification, self-programming, and value execution mechanisms). On the global level, they identify the different structural and functional hierarchical levels of value processing within this global "individual/environments" life system. This global power field or life system is governed by power relations which are developing through the historical evolutionary process. The assumptions also address the psychological and social pathology as basic kinds of structural, functional, and developmental valuepathy. They include, as well, a proposed tentative solution to the problems of universality vs. relativity of values and to the observed discrepancy between the espoused values and the values in use.

The individual and the environment constitute a single life system. That means that the relations between them are based on systemic (intra-system) and not on inter-system interactions. One cannot isolate human values and valuations from this whole life system in which they constitute the core of its dynamic life processing. Whenever the focus is placed on the individual within this life system, there are two levels of analysis; the structural componential level and the dynamic functional level (within the structural level).

There are at least three solid sources or structural components of valuating processes. First is the active mature free self and its ego strength. The development of strong ego is the precondition for a sense of survival and purposive growth which is the prime source of our valuations. The sense of wholeness, the sense of centrality, and the freedom of choice are some of the basic maturities that are of central importance to adequate value processing (c.f. Erikson's theory of virtues). The active strong self is the central processor, the organizer, the decision maker, the mobilizer, and the coordinator which is in charge of the whole bio-psycho system. She/he programs and executes personal self programming and life plans (or values programming) and the whole adaptive strategies.

Valuating maturities are pre-conditioned to ego-strength and to developing adequate valuating skills. Valuating maturities are basic competencies and integrities required to deal effectively with life tasks. They demonstrate themselves in the abilities to set goals, to pursue purposive behavior, to select, to initiate, or manipulate values, and to execute them adaptively, to specify the specific values, to discriminate, to identify, to differentiate, to organize, to systematize, to automatize, and to stop automatizing, and to bear the responsibility of self-survival. The valutive abilities (skills) are quite different from both the pure cognitive, or information processing, abilities and the emotional and arousal qualities as they control and activate (or inhibit) selectively both kinds of abilities and qualities. The self is the prime source of these valuating maturities and of their by-products.

The superego is the second source or kind of component, as she/he is the processor, the organizer, the storekeeper of social values, social valuations, and social programming. The superego unit contains the main storage of different societal programs (values) which were encoded by society through different socialization mechanisms, applied on the individual from different social groups and units to

program or to stabilize the individual's behavior within accepted thresholds as part of a continuous social organization process.

The third source or kind of structural component of values and valuating processes is the hierarchies of biological (or bio-social), neurological, and ultra-neurological maturities. Biological or bio-neurological maturities, such as reproduction, respiratory, or circulatory systems, are innate or constitutional. Their associated need satisfaction activities are interactive as they deal with specific areas of the environment. While biological maturities and their derivatives, such as needs or avoidance-approach innate tendencies, are not values, each has to be valuated and assigned a certain relative value in every situation or environment. Assigning differential importance and relevance (significance) to each biological maturity and to each need satisfaction strategy, and putting it within a list of priorities in specific situations, are important valuating processes. These valuating, or value processing, mechanisms control needs and the associated pain or pleasure, negative or positive emotions, and arousal processing.

The example of the drowning person may clarify this point. The person who is drowning will value his respiration or breathing the air and put it at the top of his

valuable biological needs in this situation because it is the most significant thing for his immediate survival in this specific case. The most significant and valuable skill at this moment, which he will value most and try to use, would be swimming. His IQ maturities and skills are important for him, but probably not relevant and thus not significant. His reproduction system is important, too, but probably neither of these will help him survive at this moment and in this specific situation. People who live or work by water, e.g., fishermen or island inhabitants, usually value swimming skills more than those who live in the desert. This does not mean that desert people are not mature enough to swim or that water people are more mature than desert people. This may apply to the use of all kinds of biological and neurological maturities which are a matter of differential adaptive valuations for different tasks and different environments.

The individual's maturities and skills are routinely valuated and prioritized against every task or environment for their significance and efficacy. In the drowning person example, the survival value, which is directly involved, activates, besides different cognitive searches, all the emotions and arousals to mobilize all the available energy of the individual to find a way out. An extreme panic or shock, which is an extreme negative arousal, may paralyze the person

in such cases and be, possibly, the medical cause of his death before drowning. The cause of death in such cases is a valuation failure or a valuation short.

Basic neurological maturities, such as memory, information processing, and the logical centers in the brain, are innate and constitutional maturities and not values, valuating processes, or skills. They become cognitive skills when these specific value processing or valuation mechanisms selectively auto-generate, set, and execute them to deal adaptively with specific areas in the environment or with specific situations. The significance the individual assigns to the use of each in a specific domain of the environment or in specific tasks or situations is an adaptive strategy which constitutes a valuative process or a value processing regulative mechanism. Using it effectively is the relative cognitive skill.

The significance assigned, for example, to the use of mathematics in handling numbers (a specific area in the environment) as a possible successful technique to deal with this kind of environment is an adaptive valuating strategy and value processing mechanism. Using them is an interactive cognitive skill (interaction between maturities and this specific domain of the environment). This regulative valuating technique has an implied selective decision, to use

these kinds of neurological maturities to manage this specific area of the environment. It is based on assigning a degree of significance (relevance and importance) for using them as possible effective adaptive specific strategies. However, assigning significance to and using these same kinds of neurological maturities to handle different areas such as social relations, love, and religion, may be possibly a maladaptive valuating strategy. Using such interactive cognitive skills as IQ in such different domains may produce unsuccessful irrelevant routines. Assigning more significance to other kinds of maturities and to their associated developing skills and executing them may prove to be a better adaptive strategy. Using, or to stop using, IQ skills, in this case, is an implicit decision based on valuating the significance of using or not using each. These kinds of valuations are so deeply automated and regularly executed in high speed that we always take them for granted.

Valuating maturities are central ultra-neurological and meta-processing maturities pertaining to the free active self as the central processor and coordinator of the whole psycho-system and for the entire bio-social survival and growth processes. They are innate maturities which may be pre-cognitive, cognitive, or post-cognitive. They may be pre-affection, pre-arousal, and pre-action, as well.

Valuating skills are generated when the right valuating maturities either address specific domains of its environments or address and control the processing of cognitive, affective, arousal, or other neuro-biological maturities and skills. While valuating maturities are innate survival and adaptive capacities, valuating skills are interactive.

The valutive maturities and skills are meta-processing capacities that operate and coordinate these whole cognitive, affective, and arousal maturities and skills (biological as well as neurological) and direct an individual's behavior to his survival and growth objectives. Neurological research may be coordinated to discover the ultra-neurological centers in the brain and to test this hypothesis of their control of both biological, affective, and cognitive centers and patterns and mechanisms of their control.

On the processing, or functional dynamic, micro level, value processing mechanisms are divided in the individual into three kinds: signification, which is assigning importance and relevance to every valued item; self-programming; and program or value execution mechanisms. These three kinds of value processing operate as the core of this multi-dimensional cognitive-affective-arousal and

active, dynamic adaptive life processing. Values, which are the processed substances in this life process, are kinds of interactive programs, or subroutines, in a whole package (rather than a hierarchy) for adaptive action. They serve to organize, control, and mobilize cognitions, affections, and arousals, and to program and execute adaptive behavior.

If we shift the focus from the individual to the structures and functions of the whole "individual/environment" life system, it will be noticed that there are different overlapping hierarchical levels of valuation and value processing which are in continuous systemic interaction: individual, bio-social, family, group, corporate, institutional, national, cultural, and human species specific levels. In every level, values and value processing function to organize, control, and program the same and the lower levels and to adapt to both lower and upper levels. Social values regulate individuals' needs and organize social systems by programming individuals' behavior to stabilize it within accepted limits and to insure social survival and growth in specific social and physical environments. Personal values try to regulate the individual's self operating sub-systems and to adapt him to his social and physical environment.

However, this multi-level, multi-stage value processing produces huge variability which gives the individual and the group a chance to choose, to adjust, and to change. This multi-level, multi-stage variability is the source of both adaptive flexibility and strainful value conflict. Within this multi-level, multi-stage value processing, the valuations which the individual or the group make generate his values (his interactive strategy) within his level of the environment. Social values and morality are only one kind of the values which the individual may have. An individual behavior is a product of his valuation processes and his complete set of values.

Within this global life field, in both conflict and adaptive flexibility cases, value systems as ideologies and programs for actions are generally by-products and instruments of power relations and energy pressures inside any dynamic system, field, or level of systems. They are power and system building, system and power maintaining, and system and power developing mechanisms. The controlling structures in any system, or in the whole field of value processing, will generate and process their values to enhance their survival, dominance, and growth.

By the same token, the existing cultural valuation mechanisms, within this global context and within the

individual as well, are results of still ongoing societal and historical power processes. The bio-social evolutionary processes are still evolving. The global mechanisms of both societal development (from tribal to rural to urban), and historical evolution (from primitive to traditional to modern to post modern), and the recent historical development from extended family dominating values to corporate and institutional dominating values, result in continuous redefinition of the roles, redistribution of resources and powers, and work to reshape social values of the individual. Such processes are responsible for the present change in the social role of both the male and the female, and for the gradual world dominance of certain cultures. To sum up, social values are historical givens which constitute the individual's changing social environments. Some of them at this level are the human species specific evolutionary universals.

Psychological and social pathology, at any level, may be analyzed and dealt with as structural, functional, or developmental valuepathy. Valuating processes are the responsible part of personality for adaptive behavior and survival. Intervention may be made, either to stimulate the sense of self-survival, self-awareness, and growth, which are the sources of valuations, or to correct faulty valuating processes. The source of morbidity is either a loss of the

sense of self-survival and growth, or a loss of the homeostatic valuative mechanisms which may be leading to hypo- or hyper-valuations or faulty actions, or a loss or lack of valuative capacities, maturities, and competencies. The morbidity may be generated by faulty significations, faulty self-programming, or faulty value executions, or by any combination of them or their complications. Faulty value processing may mean a loss of the control assumed by the valuating processes in the individual over affections, arousals, cognitions, and actions.

In this model, the problem of universality/relativity of values appears to be solvable. The valuation processes and mechanisms and the laws governing them, on the individual and global levels, may have a certain degree of generality and universality. The main characteristics of their structure, though developing, are fairly stable, as well. However, the contents of these components, their processes, and their executions may be more relative and variable. There are different environments across time and space and different alternative strategies for adapting to the same environment, besides a different valuative capacity and skills for different individuals and groups. However, certain values may be proved by eventual research to be human species specific evolutionary universals and certain

automatized value packages be proved to belong to certain individuals or groups.

The discrepancy between values in use and espoused values may appear, as well, to be solvable in the proposed model. Analyzing the interactive process of self-programming and the signification mechanisms which activate them may help to discover the automatized values package of the individual (or the group), and to predict his responses and behavior in a specific situation. Discovering the exact execution mechanisms and the value packages needs conducting different lines of research. Task analysis, recurrent cycles, and script analysis may help to discover such mechanisms for each individual and group.

To sum up, the objective of this introductory chapter was to state and explain the main biases or postulates of a model for the dynamics of value processing. The individual and his environments constitute a single life system (or field of systems) and the relationships between them is, thus, a systemic one. If one focuses on the individual, he will find, on the structural level, three basic sources or components of values and valuations: the active mature self, the superego, and the biological and neurological maturities and competencies. The valuative, or the supra-neurological, maturities and competencies control the whole system by

valuation processes which focus on valuating, controlling, using, and processing the other biological and neurological maturities and abilities by the selectivity syndrome inherent in them to enhance survival and growth.

On the functional dynamic level there are three kinds of valuation processes: signification, self-programming, and program or value execution, that constitute the core of the psycho-system and operate the whole personality. Values are kinds of interactive programs or algorithms in these whole valuative mechanisms.

On the global or life system level, there are different overlapping hierarchical levels of valuation and value processing which are in continuous interaction: individual, family, group, corporate, institutional, national, cultural, and human species specific levels. In every level, and in the whole system (or field of systems), valuation and value processing are the controlling mechanisms in a multi-level, multi-stage process, which functions to channel energy and power dynamics of the system. These existing individual and global mechanisms are results of developing and still ongoing social and historical evolutionary processes.

On the other hand, psychological and social pathology, at any level, may be evaluated and dealt with as

basic structural, functional, and developmental valuepathy. In this model, the problem of relativity/universality of values may be partially solvable, as these valuative processes and mechanisms may be more universal while their contents and executions are more variable and relative. The problem of discrepancy between the espoused values and values in use may appear to be solvable, too, within this dynamic model of human values.

CHAPTER 3

The Signification Paradigm:

The Structure of Significance and the Function of Signification Processes

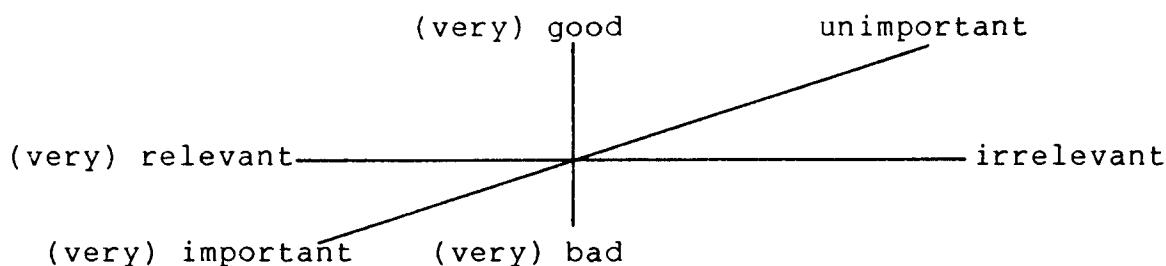
In this chapter the main concepts of the signification paradigm will be developed, the sources of significance will be explored, the controlling homeostatic valiative mechanisms will be described, and the three different kinds of signification processes (object signification, values signification, and self-signification) will be identified and discussed. This will be done with special focus on self-signification (or self-valuation), the patterns or activation spreading that it generates, and the sources of valuepathy and psychological health.

There is almost a theoretical consensus that outside objects or events have no meaning or significance in themselves. To assign specific meaning to objects, then significance, then attached affection and arousal, is a human species specific process. While this process integrates different components which are precedents to response and action, assigning significance to any perception or idea seems to be one of the most significant steps for determining an individual's response. Significance involves relevance to specific reference criteria or criterion and placing

different degrees of positive or negative importance, depending on the status of this reference criterion in the operating package of value programming. Figure 1 explains the three dimensions of this intuitive, spontaneous, mostly automated process which monitors and defines the relevance of the event and the degree of its relevance. If it is relevant, it will be accessed for more processing to determine if it is bad or good (negative or positive) and the degree of its positiveness or negativeness to specific reference criteria. The degree of importance will be considered accordingly and triggers an activation spreading with equal or parallel degrees of intensity. The event may be cognitively important (such as an international event), but not that much relevant, and thus will not trigger that intensive processing in the individual who is not concerned or involved.

FIGURE 1

The Three Dimensions of Significance



The capacity of information and value processing of the individual (or the organized group) as an energy or power system is limited. To avoid the overload, and to use the available energy efficiently and effectively to enhance adaptability, the self has to select and process only the relevant and important information (significant) to his/her survival and growth objectives. The individual signifies anything differentially according to its vitality to his survival, growth, well-being, and to the network of their implicit and explicit derivatives (explicit derivatives include goals and subgoals; implicit derivatives include valuative states such as intentions, anticipations, expectations, aspirations, longing, motivations). This dynamic process of signification is the core of the real time value processing mechanisms. The significance paradigm involves different kinds of comparisons, attributions, feedbacks and feedforwards, and judgments about the significance, and is more sophisticated and dynamic than the oversimplified linear models of consistency or congruity (Osgood & Tannenbaum, 1955; Piaget, 1953; Mandler, 1982).

The significance of stimulus controls and stabilizes (by activating or restraining with differential intensity) the different kinds of cognitive processes, e.g., encoding, retrieving searches, logical processes, the emotional

processes (toned negative or positive feelings with different intensities), the arousals (negative inhibitive or positive mobilizing), and the possible alternatives of reaction or action initiations. This activation or inhibition spreading process may start from any of these five dimensions and generates a whole processing unit, taking any single sequence of their algebraic alternative combinations. However, the signification and the other valuative processes control, in the normal individual, these processing mechanisms. Signification processes control cognitions, emotions, and arousal production and their intensity. The more significant the event, the more intensified the emotions and arousals; the more relevant and important the fact and the more involvement of the self, the more intensive activation spreading. The activation/inhibition spreading process proposed in this perspective, unlike those proposed by other models (Anderson, 1976; Bower, 1981; Clark & Isen, 1982), which are either affective or inferential, is a global chain reaction which spreads homeostatically across the five components of a psycho-system.

The literature on the relations between these five components (valuation, cognition, emotion, arousal, action) is fragmented and inconsistent, e.g., there is a great deal of controversy in the literature of cognition and emotion,

about who activates whom, or which is the precedent or the antecedent of the other (Arnold, 1960; Simon, 1967; Mandler, 1982). The hypothesis in this model is that any of these five components may trigger a complete processing unit, but the signification process is the controlling variable on any level of processing, at least in most cases. More comprehensive research and experiments to discover the mechanism of this process and the patterns of activation are needed.

Most of the traditional cognitive theorists (Arnold, 1960; Lazarus, 1968, 1982; Mandler, 1975; Plutchic, 1980) hold that some kind of perceptual cognitive process, probably intuitive, non-reflective, immediate, automatic, direct, or based on a sense of judgment, is a prerequisite to emotion. However, this intuitive process does not meet the basic definition of cognition and is found in the young baby as well as in the adult. This process may be precognitive, cognitive, or post-cognitive. It may be based on classical or operant self conditioning, or both, or on other kinds of self-awareness mechanisms. It may also be present in different patterns, being directly related to the interaction between self-awareness and stimulus. It is an independent valuative process which is not either affective or cognitive as will be elaborated and demonstrated.

This example from our daily life may clarify this process a little. Mrs. X, a retired senior citizen, just yesterday put all her life savings in the stock market. The salesman gave her a rosy expectation about the stock market performance and told her about the projected 50% capital appreciation this year for the money invested in that stock. That afternoon, while she was watching the news, she heard that the stock market lost 60 points, which equalled 8% of her savings (just in one day).

In this example, Mrs. X watched this news event and signified only one item of it (the stock market) as very relevant negative and very important as it related directly to either her financial security (survival value), or financial growth (growth value), or both, depending on the whole package of her values. Putting her savings in this stock market is an execution of adaptive strategy which is achieving or maximizing her financial security or growth. This signification is highly intensified by both the strength of these initial values, the strength of the event, and by her high expectation (her valuative state which is a value derivative). The money, her savings, is an outside extension which may be valued differentially against their relative relevance and importance to her survival or growth. She signified the event according to its relevance and

importance to these objectives (financial security) which are derivatives of her values.

This signification generates an activation spreading sequence as follows: disappointment, shock, feeling trapped and tricked by the salesman (feeling and emotions which their intensity mostly equal the degree of significance of the event to her), and she thought about the alternatives to maintain her savings. However, after thinking over the possible alternatives, including pulling her money back out of the market to avoid further losses (cognitive processes), she got overwhelmed and full of panic about the expected consequences (negative arousal) and became indecisive for a while (stop action). However, after she pulled herself together, she called her salesman who managed to alleviate her feelings and to resignificate the event for her by explaining the correction mechanisms of the market and that it should bound back. At this moment she decided to stay in the market, at least for a while.

This activation spreading sequence pattern (signification - feeling - cognitive processes - negative arousal - stop action - positive arousal - intermediate action [gather more information from the salesman] - resignification) may vary according to the kind and intensity

of signification processes which have activated this sequence.

To better understand the signification process and the homeostatic mechanisms it activates to control the other personality components, it is important to focus on a large scale modeling of the whole personality in which the signification and the other valuating processes are the central part. Analyzing the structure and function of both the memory and the mood demonstrates this point as well.

The psycho-system is structured into five major components or subsystems which are functionally related and structurally differentiated:

1. The cognitive (or the information processing) subsystem, which works mostly on the facts, the meanings, and the descriptive data and objective causal dynamics.
2. The affective subsystem which helps, if needed, to create either an interruption (or slow down) or an acceleration in the ongoing activations, working either as an energy accelerator or as a natural system of self-rewarding or self-punishing (or as an alarming system). This is based on self-attachment or self-detachment that helps in conditioning and commissioning the whole psycho-system. Emotions may follow or trigger either arousal or cognitions or one of the other five components. A feeling of love may

trigger or stimulate a lot of cognitive searches, arousals, and executive mechanisms to reach the object of love.

3. Arousal subsystem, which functions either to mobilize for behavior execution (positive arousal), or for stopping or inhibiting an executive action (negative arousal).

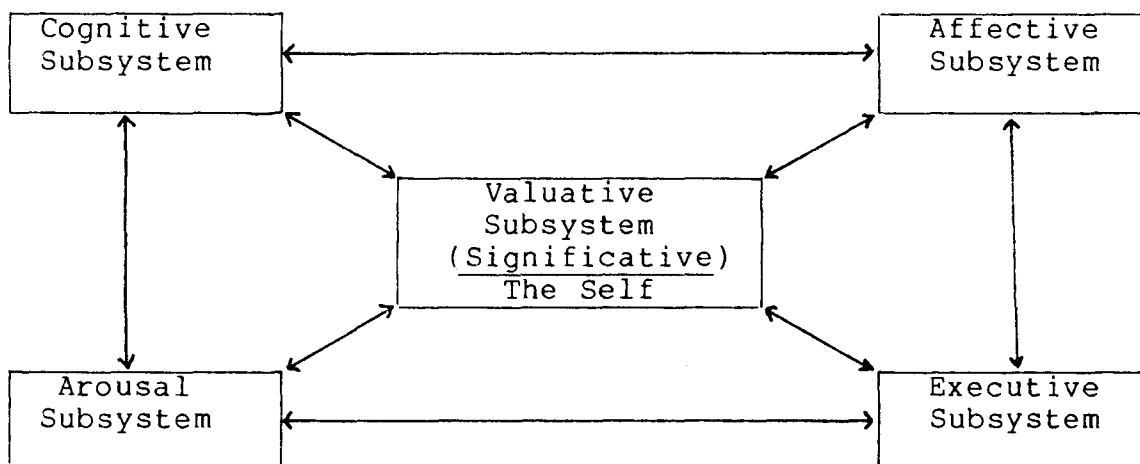
4. The executive subsystem which functions to execute the behavior.

5. The valiative (or significative) subsystem which is the central part, as it is directly related and operated by the self to control, organize, and coordinate the whole activation or inhibition spreading homeostatic adaptive mechanisms. The valiative dimension combines, coordinates, and virtually operates all the other four subsystems to serve the essential survival adaptive goals and their derivatives and to relate every object in the environment to them.

Signification processes at this level dramatically bias thought production and control the whole cognitive domain by triggering at least six interrelated control mechanisms. First, it controls selection of the perceived objects as it generates filtering mechanisms which admit only the material significant (directly or indirectly) to self survival and casts aside nonsignificant material. This filtering is important insofar as it determines what gets

encoded and retrieved and the quality of the encoding and retrieving. Second, even these selected cognitions are differently signified. This signification process controls by releasing or restraining affection and arousal, both the cognitive and the executive sub-systems. The more significant the stimulus (positive or negative), the more arousing, the more activating affections, and the more activating deeper information processing and selective focusing.

FIGURE 2
The Psycho-System



It also controls differential selection and activation of the cognitive maturations and skills which are significant (relevant and important) and more appropriate for

handling specific domains, tasks, or situations in the environment. It, too, generates the specific cognitive style of the individual which automates and controls the differential mode of information processing, e.g., field dependence/field independence.

The encoding process and the memory storage unit are similarly structured to store the five dimensions of every information bit (its meaning, its significance, the associated toned affections, arousals, and actions). These five dimensions constitute the capacity of every storage unit in the memory. The valuative dimension of the storage unit, however, seems to have the strongest tone in normal cases, as it is related directly to the controlling valuative homeostatic mechanisms and to the self-survival. While the cognitive processes utilize the five dimensions of the storage unit with a different calibre for each to encode the new stimulus and uses the five modes of search to retrieve it, the most powerful mode of encoding and retrieving is the valuating mode. This controls and defines the quality, the intensity, and the tones of affection and the selectivity of cognition and action according to the significance principle.

The mood of the self, or the stream of consciousness, which includes the stream of continuous sequencing of

activation spreading and expresses the dominant spreading patterns, is a by-product of both self-awareness and space-time awareness. It is also structured into these parallel five major components. This consciousness state, with its different manifestations and levels, is a pre-condition to any kind of processing. Losing consciousness means to stop processing. This conscious state of the self is the source of the homeostatic mechanisms, valuations, cognitions, affections, arousals, and actions processing and control.

The valuative significative processes function to create the state of emotional stability by stabilizing the mood's other four dimensions homeostatically within certain thresholds and by generating different control mechanisms appropriate to each dimension. They are ready to work if any of them went beyond the limits (e.g., tension management mechanisms to control arousal, filtering mechanisms to control cognitions, anticipatory and goal setting mechanisms to control action, and self-defense mechanisms, if needed, to regain self control). These homeostatic mechanisms have one purpose, which is to control for keeping the personality effectively adaptive, healthy, and free from valuepathy.

There is a fine balance among these five dimensions. In every mood time dependent state it is important to maintain fairly stable (neutral) mood conditions to enhance

encoding, retrieving, and information receiving and transmitting on the same tones and to ensure adaptive reaction and initiation. This importance of maintaining stable mood conditions is comparable to the importance of maintaining stable temperature and metabolic rates within certain ranges for the body. Loss of such mood stability is one etiological source of valuepathy. Hypo- or hyper-valuation will result in excess high or low arousal or affection which affects the quality of the required adaptive action. Value-failure may result in loss of cognitive filtering mechanisms and of its homeostatic controls. The valuative dimension has to function properly to control and to stabilize the whole adaptive process which keeps the individual adaptive and healthy.

The mood tones contribute to controlling information processing. Similarly, toned material and those toned within certain ranges are more accessible in memory. The neutral stabilized mood is more able to retrieve the similarly toned material with a wider range. The more the dominance of the stabilized mood, the more chances he has to retrieve more information and to enhance cognitive and logical processes as well.

The literature on memory and cognition provides various lines of evidence on the mood state dependent

retrieval and selective filtering (Isen, Shalcker, Clark & Karp, 1978; Bartlett & Santrack, 1979; Teasdale & Fogarty, 1979; Bower, 1981; Bower & Cohen, 1982; Clark & Isen, 1982) and on the selective judgment and decision making based on the available mood states (Tversky & Kahneman, 1973). The neutral tones of any of the five dimensions do not mean that they are value, affection, or tension free. No value free encoding or retrieving process is possible. Neutrality is just the midpoint between the negative or the positive tone on the same continuum. Every stimulus has to be toned on the five dimensions to be encoded or retrieved.

There are three kinds of signification (and valuation) processes which interact with each other through different kinds of feedback and feedforward loops and through self-programming strategies to ensure effective self-regulated, self-motivated self. The first is outside objects and events valuation which centers on significating objects and events in the environment. This kind of valuating process involves the outside specific values processing and combines value behavioral executions. The second kind centers around valuating the valuating adaptive strategies themselves (the values and value processing mechanisms) and the extent of their effectiveness for their maximization. The third kind, which is the self-valuating, centers on

valuating the self and its effectiveness as the central processor, coordinator, and operator of the whole psychosystem.

FIGURE 3

The Nine Kinds of Valuation Processes

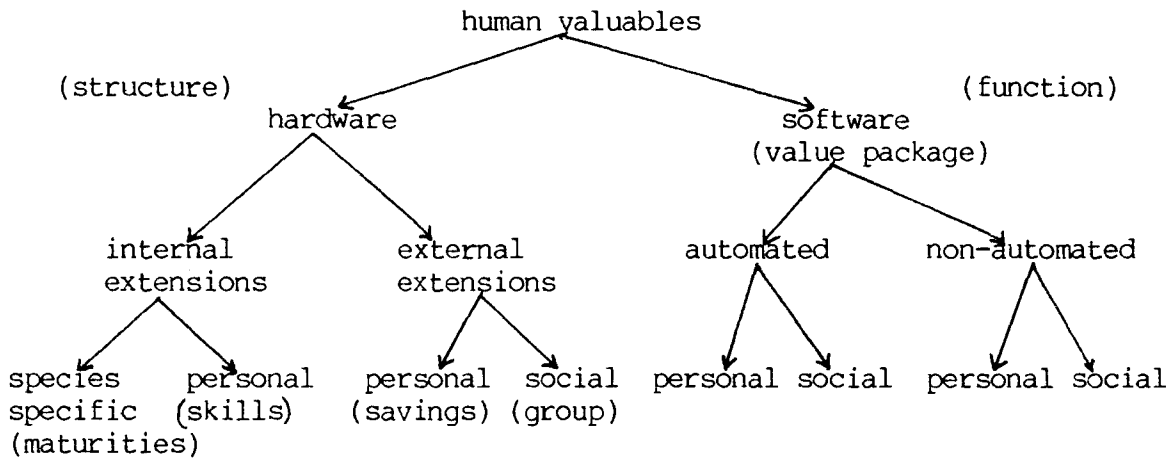
	Self-valuation	Values valuation	Object valuation
Signification	Self-signification	Value signification	Object signification
Self-programming	Self-self-programming Micro-programming	Value programming Value packaging	Object programming Goals - subgoals objectives (macro programming)
Values execution	Self-execution Self values execution	Value reprogramming Micro-executions (micro processing)	Macro program execution (macro processing)

Values valuations are homeostatic continuous feedback and feedforward mechanisms which may be either automated valuations or non-automated valuations generated either by failure of the existing values or by new tasks or radical

changes in the environment. The first kinds, the automated values valuations, operate as periodic specific monitoring and checks for a certain task, or they may be as a general check for a whole interval in the life span. These automated checks include the valuation of the main values, the related achieved and not yet achieved objectives, and the appropriateness of the means and skills used to achieve these objectives. In the novel non-automated tasks, these specific valuating mechanisms function to assess and select the appropriate assets of the individual which may help him to better handle this new task or situation. Such significant or valuable assets which are to be valuated and measured against every new specific task, mission, or situation are of two kinds.

First are the individual's extensions and integrations which his species had developed and transmitted to him through the evolutionary course and those which his society had developed (and socialized him on) through the social historical experience, and also those which he personally developed through his personal experience across his life span. These personal significant valuable assets include his biological and neurological maturities and skills (his hardware) and his personal and social values which are significant to task performance (his software).

FIGURE 4

The Structure of Human Valuables

Second is the individual's external extensions and integrations, such as his property, his savings, his family, his social group, and all that he either considers his belongings or identifies himself with as an active part of them as they help his survival or and he helps their survival (Hall, 1976). The individual's valuative and cognitive skills and his values package are generally, in most cases, his most valuable assets in dealing with his life task performance. His cognitive skills are some of the most important instruments he has ever developed; however, his valuative skills are the most crucial for the effective use of his other skills for survival and growth.

The process of value signification releases a series of activation spreading sequences that targets to put him in the state of readiness for the new task. The dynamics of these continuous automated and non-automated processes generate the valuables and values valuation sub-package (as part of the operating values package). These specify, through the continuous experience, his negative and positive personal assets and his net worth, and contribute in defining his perceived self-worth, or self-cognition, and the whole self-valuation mechanisms.

These mechanisms of values valuation function to program, or to reprogram, this values sub-package and prepare the individual for dealing with the new task effectively. They help in automating such kinds of successful valuations and developing positive assets by limiting stabilizing or generating and obtaining new personal extensions, integrations, and skills (both his hardware and software), which give him more adaptive capacities and maximize his potentialities. In the case of failure or change in the environment, the failure or the change generates attribution searches (Weiner, B., 1980, 1982) to pinpoint the cause of this failure and reevaluate the available assets for dealing more successfully with the task. The individual has to

reshuffle his assets, match them against the task, and apply the winning strategy.

Let us consider an example which may clarify some of these ideas. A wife of a diplomat from an Afro-Asian country who was given the assignment to work in his country's embassy to Moscow had just arrived to join her husband. The first day when she awakened in the morning she felt that everything inside her new house had an odor. The air, after sleep, was too polluted and full of carbon dioxide to tolerate. She opened all the windows to get fresh, non-polluted air as she used to do in her own home. The temperature outside was 50 degrees below zero, and she caught severe bronchitis and died.

In this true story, this wife died, so to speak, by her values or by the routines of her value executions. As a way to keep the air inside her house non-polluted and fresh (to maintain and enhance her health and the health of her children), she used to open all the windows early in the morning; she could do that safely in her country, because it was sunny and warm most of the year. The basic value here, which was to keep herself healthy by keeping her environment clean and pollution free, had been executed in her specific environment through behavioral automated routines. She became programmed to execute this value in this environment

this way. The change of environment from warm to cold makes this routine in direct conflict with the basic survival value which is much stronger.

The conclusions here are that it is not easy to change these automated subroutines of value execution, which sometimes we call habits, ways of life, life styles, or cognitive or affective patterns. Some of them are more rigid than others; some individuals are more flexible than others, too. The individual in this simple example must reevaluate her values and her value executions in order to survive and to adapt effectively. Failure to reevaluate may cause extension transference to develop or other kinds of valuepathy (Hall, 1976).

Self valuations, on the other hand, which are regularly at different levels, create self-regulating, self-motivating, and self-significating mechanisms. At the pure biological, reflexive, organic level, or classical conditioning level, it generates sensual pleasures and peak experiences (Maslow, 1970) associated with direct survival needs (arousal level), happiness syndrome associated with success in meeting environmental challenges (affective level), and neutral stabilized mood on the global level, which are examples of this rewarding side of this self-rewarding, self-inhibiting (or self-punishing), self-

programming mechanism. Those kinds of self-reflective, self-conditioning (inhibition-generalization-discrimination) mechanisms, even at this biological, pre-cognitive organic level, are parts of the global self-valuative processes.

The self generates, at another precognitive level, the level of self-operant conditioning, similar mechanisms to commit, commission, value, and correct herself/himself (Bandura, 1977). Note that activation spreading at these levels does not directly involve cognitive activations.

Self-valuation processes at the conscious or the sub-conscious levels (or cognitive and post-cognitive levels), utilize, activate, and control cognitions, affections, and actions through activation spreading mechanisms. Self-transcending, self-valuation, and sometimes directed introspections serve as monitors that scan and generate self-correcting, self-stabilizing, self-validating, self-essentiating, and self-substantiating homeostatic mechanisms that stimulate, adjust, change, or stabilize self-presentations, self-awareness, self-esteem, self-efficacy, and self-confidence (self-affections and self-mood states) (Gergen, 1971; Epstein, 1973; Markus, 1977; Goldstein, 1978; Kuiper & Derry, 1981; Rogers, 1981; Linville, 1982; McGuire & McGuire, 1983).

Self-valuation is a central device in the psychosystem that allows the self to check and double check itself against its main survival values and vital strategies and to continuously adjust itself according to changing situations and environments. Self-transcending (or self-valuating) is the ability of the self to signify and to redirect itself in such a process of which it will be object and subject in the same time. It is one of the basic valuating abilities and skills which may be measured to assess the overall personal valuative capacities.

There are three kinds of self-valuation processes: self-signification, self-self-programming, and self-executive processes. There are at least two kinds of cognitive processes which are usually triggered by self-signification (within the activation spreading sequences it triggers). The first is the comparative processes; the second includes the attributive processes.

The process of self-signification generates, at least, four lines of comparisons: the comparison between one's personal components (values, cognitions, affections, arousals, behavior) and the others' personal components; the comparison between one's performance and the anticipated or the targeted performance or standards (or personal values) of others; the comparison between one's behavior and his social

values; and the comparison between one's self-valuations (self-concepts and self-cognitions) and the others' valuation of him. These comparisons revolve mostly around two main poles of value endeavor, the personal values and the social values, which constitute two different valuative strategies that should be balanced and integrated in any self-valuative formula.

Personal dimensions include one's valuative, affective, cognitive, and arousal maturities and skills. It includes, also, his performance (actual behavior) and his success or failure to achieve and execute his personal values and goals which are at stake at this level. Personal dimension cognitions activate mostly different syndromes or self-affections which are more related to self-efficacy (Bandura, 1977, 1982), self-confidence, and self-awareness. Social dimension includes one's physical and social image, socioeconomic status in society, national, regional, ethnic, racial, and religious identities. It includes also his sexual, generational, occupations, marital, and parental roles. Social dimension activates certain syndromes of self-affection that include self-respect and self-esteem (Rokeach, 1979).

While the positive comparisons between one's performance and his personal values and their derivatives

generate mostly self-efficacy feelings, the positive comparison between one's behavior and his social values generates mostly self-respect. The positive comparison between oneself's personal components and others' personal components activates mostly a self-awareness syndrome which includes the sense of self-boundaries. The positive comparison between one's self concepts and the others' conceptions of him activates mostly self-confidence. These different syndromes of positive self-affection (self-esteem, self-efficacy, self-awareness, self-confidence) constitute the cluster of self-conception which is activated by comparative cognitions and which activates, in its turn, self-arousal mechanisms and self-executive (self-adjusting or stabilizing) mechanisms.

It is reasonable to assume that people have need to evaluate the information they acquire about themselves by comparing the self with corresponding information about others (Festinger, 1954; Bandura, 1977). The purpose of such evaluations or comparisons is not necessarily to imitate or to conform arbitrarily to whatever may be the normative values of one's positive comparison groups, but rather to serve as points of departure for self-signification. The discrepancy based on these kinds of comparisons is not necessarily a dissatisfaction inducing one, as the

differentiation from others is the basic mechanism of self-evolving.

Cognitive consistency and schema congruity theorists (Piaget, 1960; Mandler, 1982) and cognitive dissonance theorists (Osgood & Tannenbaum, 1955; Festinger, 1957; Heider, 1958; McGuire, 1960; Rokeach, 1962, 1972; and Greenwald & Ronis, 1978) deal with similar concepts, but from different perspectives, and from static or linear points of view. Consistency in these theories is defined either as consistency with self-esteem or consistency with logic and reality or with beliefs. While a person will typically strive for all these kinds of congruity, incongruity (positive or negative) with the significant survival and growth values and their specific derivatives is probably a more compelling and comprehensive consideration.

Self-awareness and similar loop or non-linear models (Miller, Gelanter & Pribram, 1960; Duval & Wicklund, 1972; and Greenwald, 1975) provide more dynamic and better insight of this basic comparative process. Duval and Wicklund (1972) assume that inward focus of attention causes a person to compare his or her ongoing behavior or state with whatever standard has been made salient by the person's behavioral context. If a discrepancy is perceived between ongoing behavior and a standard, then negative affect is assumed to

be generated; one potential result of which is a tendency to alter the behavior so that it conforms more closely to the standard regulating it. Thus, self-focus is presumed to cause a close correspondence between ongoing behavior and salient standards.

The matching to standard hypothesis has found repeated support in a great many studies (Carver, 1975; Greenberg, 1980). Scheier and Carver (1982) argue that the negative feedback loops work as cybernetic control and discrepancy reducing mechanisms and that self-focus is a precursor to the operation of the comparator of such loop. Bandura (1977, 1980), concerned with what he calls self-referent thought or self-knowledge, focuses on persons' conceptions of their personal effectiveness. According to Bandura, Adams and Howells (1979, p. 2):

Such self-percepts (valuation of self-efficacy) affect the courses of action people pursue, their thought patterns, and their emotional arousal. Self percepts of efficacy influence choice of activities and environmental settings.

Maladaptive self-percepts about efficacy cause negative arousal and anxiety and activate the vicious loop of indecision. Evidence from Bandura (1977, 1980) indicates that persons' observations about their efficacy determine their ability to perform certain behaviors and how much effort they will exert to achieve certain goals.

Rokeach (1979) and others (Hopkins, 1973; Greenstien, 1976) provide evidence that induced self-confrontation, using feedback mechanisms, leads to a long term cognitive and behavioral change. This available evidence indicates that the basic psychological mechanism that generates such a sequence of enduring change is the arousal of a specific state of self-dissatisfaction. On the other hand, critical situations, crises, or failures trigger different patterns of activation spreading which include cognitive attribution searches. Attribution searches are activated on both values valuation and self-valuation levels.

Theories and research on the attributional search processes have direct relevance for self-valuation theory. They have focused mainly on the effects of specific types of attributions on behavioral and emotional responding. For example, in research primarily on achievement behavior, Weiner (1980, 1982) and others have proposed that when people experience achievement related success or failure experiences, they attempt to explain the causes for these outcomes, and their explanations affect the subsequent affective, as well as behavioral, reactions in concurrent and future achievement related situations. Specifically, the expectancy value theory, as proposed by Weiner (1980, 1982), suggests that attributional explanations for success or

failure experiences may be taxonomized into three dimensions: stability, internality, and controllability.

Stable causal attributions are thought of as long-lived recurrent and/or characterological, while unstable factors are viewed as short-lived or intermittent. Internal attributions place the locus of causality within the individual; external attributions implicate others or the individual's environment as causal mechanisms for success and failure experiences. Weiner (1980, 1982) hypothesizes that these attributional dimensions are orthogonal and that attributions to internal or external factors tend to be associated with affective reactions. Similarly, Seligman (1975) and Abramson, Seligman and Teasdale (1978) have proposed a reformulation of the learned helplessness model of depression that places a strong emphasis on the role of causal attributions in predicting the chronicity and generality of helplessness deficits. The reformulated learned helplessness model predicts that when people acquire an expectancy that they have little or no control over important outcomes of their lives (the crucial determinant of symptoms of learned helplessness), they will tend to search for causal explanations and to explain their perception of helplessness. These explanations will determine the chronicity and generality of resulting deficits and

concurrent self-esteem levels. The chronicity of motivational and cognitive deficits of helpless depression will depend on the stability of the attributions people use to explain their perceived lack of control, while self-esteem deficits will be determined by the internality of their attributional explanations. A third dimension (globality) will determine whether or not motivational, self-esteem, and cognitive deficits will extend to other situations. Learned helplessness theory suggests that the affective, motivational, and cognitive deficits that often seem to be symptomatic of depression result primarily from the attributions people use to explain why they are helpless.

The comparisons and attribution processes are cognitive processes and they constitute the cognitive part of the activation spreading sequence activated by self-signification. This process results in self-conceptions on the affective level, and self-cognitions on the cognitive level, and arousing the self toward the self to be mobilized to take decisions or to execute changes or to stabilize her values and strategies inside and outside. This arousal toward the self in this activation sequence results in the whole syndrome of narcissism/masochism and in other kinds of symptoms (Freud, 1933, Raskin, 1980).

The action toward the self results in different kinds of direct and indirect self-rewarding and self-punishing mechanisms. While self-conceptions are the activated (or automated) emotions toward the self, self-cognitions are the activated cognitions about the self. Self-cognition includes the knowledge of personal limits and advantages, weak points and strong points, and helps to use them effectively by valuating them against every task or situation. Self-cognitions combine both value valuation and self-valuation processes and are crucial for the whole adaptive process.

There are at least three inter-related hierarchical levels of self-valuation: specific self-valuations which are performed in certain tasks or situations, generalized self-valuations which are performed to judge the efficacy of the conformity of certain behavior across similar or different branches of human endeavor, and global self-valuations which are a very abstract judgment about the self, e.g., self-helplessness or self-competence.

Automated significations are activated in virtually every situation a person may find himself in. One's performance in every situation is more or less routinely judged for its bearing for self-cognitions and conceptions. A positive and generalized (or global) self-conception may be generated from a high frequency of positive (reinforcing)

specific self-valuations. A negative self-cognition or self-conception may be viewed as the converse, that is, as many negative specific valuations and few positive ones. Values and self-valuation come to be consequential components of the processes of self-definition and self-adaptation (the adaptation of the transcending self to his existing self). The person's global valuations of himself are an organization of all these kinds of valuations, negative as well as positive, personal as well as social, conscious as well as subconscious or unconscious, which are different depths of the self. The importance and relevance of every kind of valuation, personal as well as social, is contextual. However, personal values and personal efficacy seem to be more critical, even in handling social situations.

Whenever the self is the object which the transcending self has to be adapted to, we expect more intensive and deep processing. The chain reactions of the activation/inhibition spreading process have in this case the same components and rules as in the outside object signification. However, the direction of the activation is spreading more toward the self with more intensified and longer duration tones. The objectives of the process are still the same, that is, to control, stabilize, adjust, and change. The filtering mechanisms here are probably more

active, especially in persons with low self-valuative abilities. Different cognitions about the self come to be signified from different kinds of comparisons and attributions. Their significances activate self-affective, self-cognitive, self-arousal, and self-executive mechanisms, which handle the self by adjusting, changing, rewarding, or punishing.

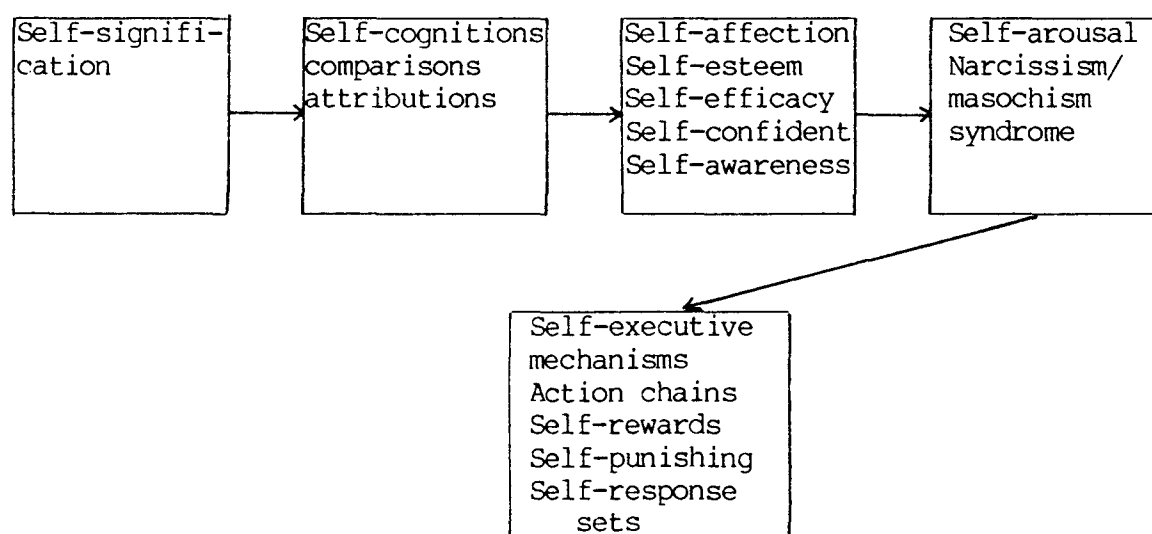
At this level of intensive and deep processing, self-cognitions hardly meet the same criteria required for regular object cognitions, and so the concomitant affections and arousals. Self-valuations, and cognitions, when they are deeply reinforced, turn to be intuitions and insights. Positive or negative affections, e.g., self-esteem, self-respect, self-efficacy, self-confidence, self-awareness, which are triggered by self-valuations, turn to be self-beliefs and self-fulfilling prophecies. The arousals toward the self are accompanied with either narcissistic or masochistic tendencies. The executive actions toward the self are very deep and strong as well.

The whole self-valuation processes, which include self-signification, self-self-programming, and self-self-program execution, generate and manage different kinds of homeostatic mechanisms to shape and reshape and to control and automate the whole valuation, cognition, affection,

arousal, and action domains through creating dominant meta-processing automated cognitive, affective, arousal, and action styles and patterns.

FIGURE 5

One of the Possible Sequences of Activation Spreading
Toward the Self Which May be Triggered by Self-Signification



In the valuation domain, they generate the adaptability patterns for survival and growth. These patterns have to put up a formula of compromise and balance between social and personal values, empathy with others, ethnic solidarity, and personal adaptability. Tolerance of ambiguity and uncertainty will contribute in determining the

adaptability patterns which may govern and automate values processing and which may be labeled in modern cultures by "isms," such as individualism vs. communism, conservatism vs. radicalism, or authoritarianism vs. liberalism (Adorno, et al., 1950; Eysenk, 1954; Kira, 1980).

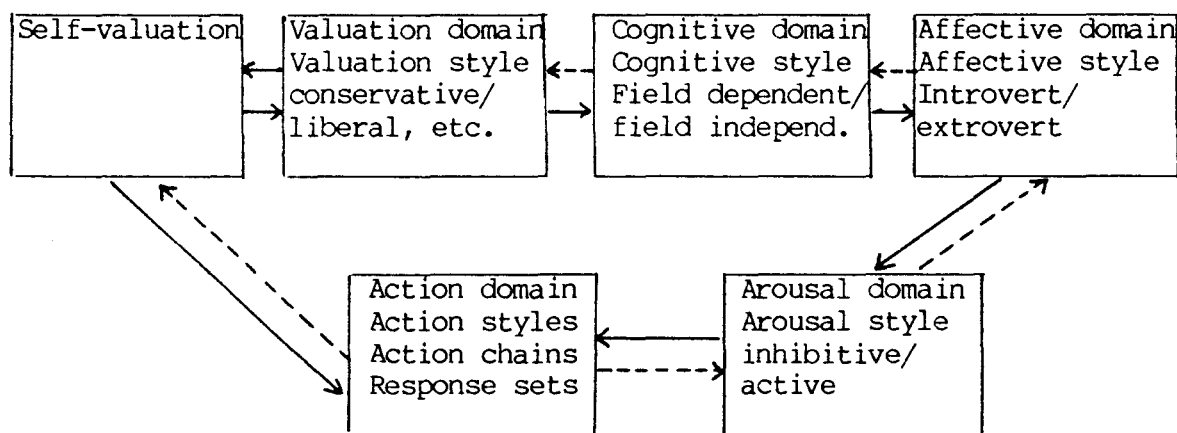
In the cognition domain, they generate different formulas of cognitive styles which may govern and automate information processing. The nature of the balance between autonomy and conformity, between self-respect and self-efficacy, between personal and social values as achieved by self-valuation homeostatic mechanisms in valuation domains, would generate the cognitive set or the cognitive style of the individual. In other words, self-valuation style will determine and control the cognitive style of personality, e.g., field dependent vs. field independent, reflection vs. impulsivity, conceptualizing vs. categorizing, and such other proposed cognitive modes and sets (Witkin, 1978). This means that the lopsided balance toward self-efficacy (rather than self-conformity) would generate more field independent, reflective, and conceptualizing cognitive styles and vice versa.

In the affection domain, the same meta-affective mechanisms work for controlling it along the reached formula of compromise and generate the whole personality automated

balance between introversion and extroversion. These feedback and feedforward mechanisms contribute also to controlling, shaping, patterning, and automating arousal domains, e.g., active vs. inhibitive, arousal toward the self vs. arousal toward outside objects, along action chain patterns. On the action or behavioral response level, they contribute the same by shaping and automating response patterns or response sets (Soueif, 1968). The all over relationships between these styles and patterns which automate and coordinate these five domains still need research to be conducted to determine their exact dynamics.

FIGURE 6

The Automated Styles of Processing Generated by
Self-Valuation Mechanisms in Every Domain



Self-signification is one of the most important sources of both valuepathy and the whole adaptive healthy personality. The discrepancy in self-signification, which may be negative or positive, may exist along either the relevance dimension or the importance dimension, or both of them. One's adaptive strategies may be successful but not that relevant to his real survival process, and it may be relevant but not that important. The complete failure or success is ultimately relevant and completely important to one's survival or growth. To have your college degree, e.g., in business, may be important but may not be relevant if your chances of finding a job within this degree are minimal due to the job market situation.

Etiological factors which may result in valuepathy at this self-valuation level may be one or more of the following:

1. Inadequate valuative or self-valuative maturities and skills.
2. Failure in the basic homeostatic mechanisms, such as:
 - a. failure in personal-social values balancing mechanisms which causes polarization;
 - b. failure of tension management or self-defense mechanisms;

c. failure in the cognitive filtering mechanisms.

3. Failure in the activation spreading mechanisms which may result in different kinds of hypo- or hyper-valuation and affect the whole signification process.

4. Unprecedented, or unexpected, sudden environmental change beyond the existing valuative skills of the individual, e.g., grief, due to the loss of a parent in an accident or other environmental factors which affect the individual valuative skills (drugs, toxics).

Generalized negative self-valuations may produce sudden or gradual failures which may cause functional interruption in the activation mechanisms. Such critical self-valuation failures associated with loss of homeostatic mechanisms controlling and automating them are typical examples of valuepathy. Critical self-valuative failures result from failures in personal values processing; while failures in social values processing may result more in criminal and delinquency behavior. Hypo- or hyper-valuations are the common basic symptoms in valuepathy.

The results of these critically negative self-valuations, e.g., self-cognitions, self-conceptions, may be any one or more of the following positive or negative coping strategies.

The first kind of strategy is the initiation of major adaptive effective change, either by converting to a new value or by executing the same value differently or shifting to a new context or environment that fits his original life strategies, e.g., immigration, starting a new relationship after the death of a spouse.

The second kind of strategy is shifting the focus from personal survival or growth to social survival or growth, or vice versa, at least for a while. If the politician failed, for some reason, he may shift his focus to his private life, and if an individual failed a relationship, he may shift his focus to work more actively for political or religious groups or work organizations.

The third kind of strategy is activating either self-defense (or self-deception) mechanisms (e.g., denial, rationalization, or repression), or tension management mechanisms (e.g., drinking, drugs addiction, indulging in religious or sexual activities) to alleviate the intensive arousal which causes interruption in the homeostatic valuative mechanisms. This may help to give the self more time to reprogram itself in a more adaptive way. However, such mechanisms may endanger self-authenticity and integrity and may turn to be pathological addictions.

The fourth kind of strategy is eliminating the self, which includes different kinds of valuepathy (e.g., self-torment, self-violence, self-offence, masochism, self-surrender, self-alienation, self-repression, self-destruction, self-annihilation). This negative kind of strategy includes different levels of neurosis and psychosis in which the self is partially or completely eliminated from its responsibility of effective valuation and adaptation to outside environment. The valuation here, which is a negative valuation, is focused on the self, and the execution mechanisms are, in these cases, heading and dealing with the self and constitute different levels of negative self-valuation and self-execution.

The fifth kind of strategy is physically eliminating the self (suicide). Suicidal strategies may be combined with psychological elimination strategies. Executing the self physically as a shortcut strategy, to terminally punish the self, or to stop the extremely negative arousal once and for all, is a result of extremely negative valuation of the self, mostly due to failures of its ultimate values or life strategies. Suicidal or self-execution strategies may be indirect, such as involving the self in high risk situations which have great probability of bringing the physical self-execution.

Values and valuating mechanisms are the controlling processes in human personality. Self-valuation is the center of these value dynamics which are operating the psycho-system. Loss or failure in these operating mechanisms means psycho-pathology or valuepathy.

In the case of the non-critical negative discrepancy which is always expected and normal, adjustment may be initiated or not. In the case of critical and non-critical positive discrepancies, appropriate self-feelings and self-cognitions will be activated. However, critical positive discrepancies may result in hyper-valuating the self with different degrees of self-inflation or pretensions, e.g., unexpected success equals self-esteem plus pretensions, and it may even, in some cases, cause interruption in the valuative mechanisms. However, the individual with high self-valuative skills should be able to handle such situations effectively. Developed self-valuations, e.g., conceptions and cognitions, function as reference criteria for the self domain and as a specialized subroutine in the personal value self-programming package that works by the same homeostatic automated mechanisms which are operating the psycho-system.

To sum up this discussion, signification paradigm postulates that this process of signification relates every perceived item or event in the environment to the

individual's own goals, subgoals, and to his adaptive strategies which constitute the network of his values and their derivatives. Signification of any event generates and controls the activation/inhibition spreading to emotions, cognitions, arousals, and actions. The global signification and activation spreading processes include significating the self and its programs and adaptive strategies (its values and their derivatives) besides significating the outside objects and events, and generates the whole homeostatic mechanisms that correct, modify, change, or stabilize the automated and the non-automated styles of emotion, cognition, arousal, and action.

However, signification processes are causally dependent on other kinds of indirect processes which establish, define, and execute the standards and values or the adaptive strategies, and that programs the individual to significate and automate his patterns of signification and his cognitive, affective, arousal, and action styles. These self-programming processes are very powerful valuation techniques that constitute a central processing device that contribute to operating and commissioning the whole psychosystem.

CHAPTER 4

Values as Self-Programming Processes

Theorizing values (personal as well as social) as self-programming processes, and as a package of social and personal programs, subroutines, algorithms, and not as abstract cognitive concepts organized in hierarchies, provides us with a more useful, realistic, and testable approach. This chapter will discuss the structure and function of value programming and value packaging and will explain how values, as self-programming processes, function to put the individual in a state of readiness to respond and initiate adaptive actions, and how personal values combine with social values to constitute a whole package of personal self-programs and subroutines. It will also explain how these different programs, which are encoded in the central value programming (or processing) unit, CVPU, control, generate, and execute meta-processing mechanisms and the whole adaptive strategy.

Self-programming is a basic psychological process. Values and their derivatives, which are the reference criteria in the signification process, are materialized in two interrelated kinds of self-programming processes. The first kind, which is the mega (or macro or inter-system) programming, is materialized in a network of specific goals

and subgoals which are significant to the individual's survival and growth in specific physical and social environments. The second kind, which is the micro (or the intra-system) programming, is materialized in the intentions (Findlay, 1961), anticipations, expectations, predictions, injunctions, imperatives, self-commands, self-awareness, and the other valuative states and commands that function to enhance the level of an individual's readiness to respond or to attack his significant goals. While this second kind includes the whole dynamic package of value self-programming, the first kind functions more as program executive mechanisms. Both kinds are combined to constitute the whole dynamic value system and function together as the dynamic software of the whole personality. While the first kind will be discussed in the next chapter, the second kind is our concern here.

Within the micro-programming processes, there are two kinds of dynamic, automated, and non-automated mechanisms. The first kind is the valuative states formation (or attitudinal states), which work as interfaces between CVPU (the central value processing unit which stores and processes the value package), the self, the mood, and the other subsystems of personality. There are three modes of valuative states: the significative mode, which includes

valuative states such as anticipation, antecedent-consequent expectancies, implications, optimism, pessimism, and familiarity; the programming mode, which includes valutive states such as intention, deliberation, inclination, disposition, commitment, and responsibility; and the executive mode, which includes valutive states such as volition, aspiration, willingness, alacrity, voluntariness, free-will, determination, obligation, necessitarianism, resolution, discretion, potency, decided readiness, selective focusing, shifting attention, and spontaneity.

These three modes of valutive states are the source and the base of human attitudes, interests, preferences, desires, as well as stereotypes. Attitudes, interests, and stereotypes are valanced valutive states which are directed and centered on certain subjects. The qualities of valutive states and their extensions, e.g., attitudes, interests, preferences, are activated or determined in most cases by either multiple injunctions (more than one value), or by a single injunction or algorithm (by one value). These valutive states are among the basic components and connections of the whole valutive process. They are regularly activated and automated by the global processing in the CVPU which are automated according to the valutive

styles of the individual, e.g., authoritarian, conservative, rigid, liberal, radical, adaptive, etc.

When some of the values or routines (values as injunctions or imperatives as will be elaborated) are in conflict, incongruent, or paradoxical, they may generate paradoxical injunctions, paradoxical categorical and conditional imperatives, infinite loops, and faulty iterations on the programming level, and paradoxical intentions, paradoxical anticipations, paradoxical predictions, and double binds on the valuative state level (Grossman, 1964; Watzlawick, Beavin & Jackson, 1967; Steiner, 1971; Frankel, 1975; Rosenbaum, 1982; Riebel, 1982).

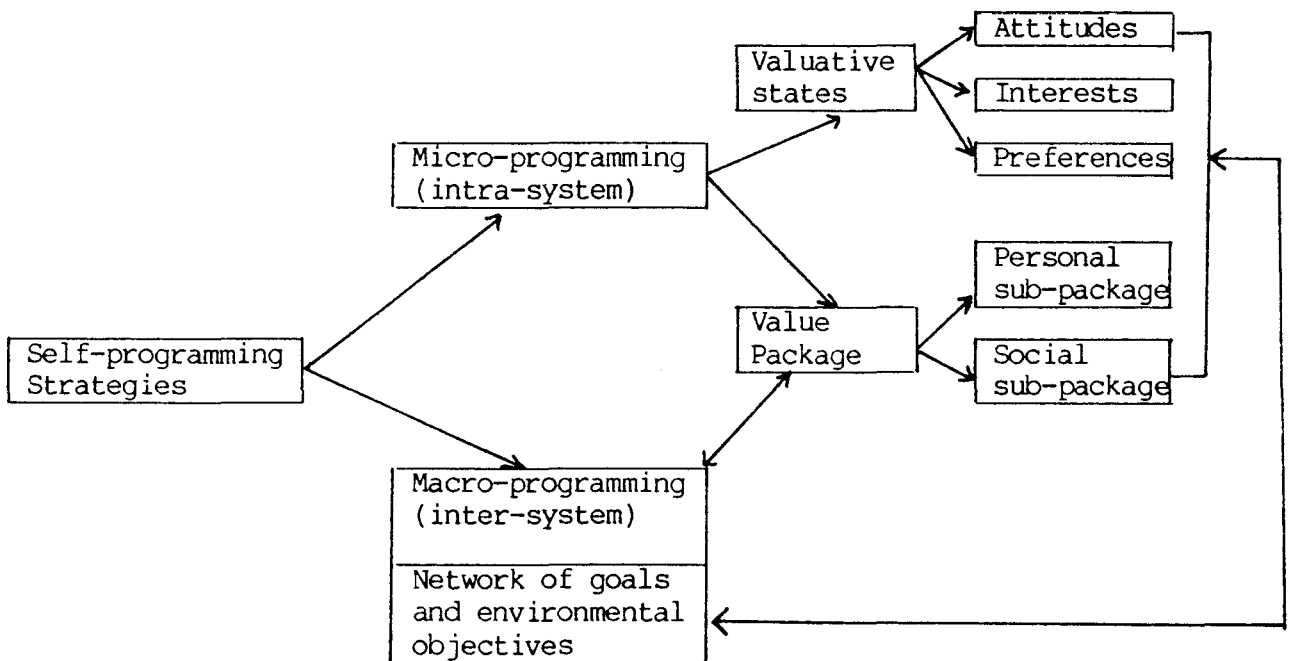
Significative valuative states, such as expectancies and anticipation, contribute in triggering the signification process and instigate the activation spreading, which includes activating cognitive processes such as attributive searches (Roth & Bootzin, 1974; Pyszczynski & Greenberg, 1981; and Rothbaum, Weisz & Snyder, 1982).

Programmed values and value derivatives are predetermined (pre-constructed) but are a flexible and interactive dynamic automated network of scripts, schemata, behavioral patterns, or action chains (algorithms) in a whole homeostatically adaptive package of self-programs. A single value may be a complete program or subroutine, or it may be

even a single statement or command in a complete programming strategy. The concept of value packaging, or programming strategy, proposed here is more dynamic, functional, and specific than the concept of value hierarchy proposed by most of the value theorists (Rokeach, 1979; Pepper, 1958), which is more structural, static, and general, and thus less useful.

FIGURE 7

Self-Programming Processes (Categorized)



This interactive automated package includes two integrated sub-packages: personal sub-package, which deals more with valuating the self and the effectiveness of its valuating strategies, and social sub-package, which deals more with social values and morality. This dynamic package has units or sub-units for dispatching (scheduling of the CVPU for use by the various active programs), input/output control, interruption control, debugging, continuous and periodic automatic checking, automatic switching, dichotomized search, demodulation, or automatic conversion and attentional shifting mechanisms, e.g., from social to personal sub-package and vice versa. These processes are controlled by the self-program generator (see Figure 8).

These programs or subroutines are pre-event, or pre-informational, and may be activated by any specific significant stimulus. They control the whole adaptive behavior by turning on the signification process which triggers, in its turn, the activation/inhibition spreading processes and the other feedback and homeostatic mechanisms as has been elaborated.

There are two main kinds of data which get to be stored in the memory storage, or two kinds of memories. The first is the hierarchical level of data and schemata, which are stored in the main storage and function to secure a data-

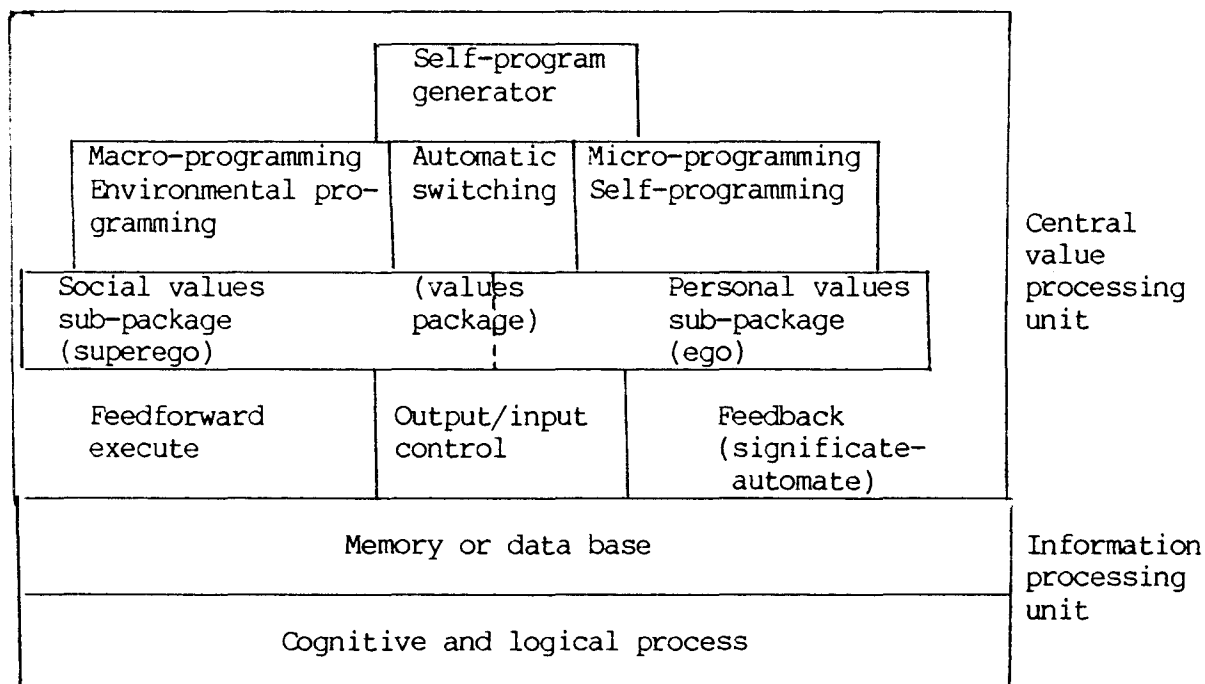
base significant to the individual's coping and readiness for dealing with his survival and growth. The second kind is the reference criteria, or the values and their derivatives, which constitute this package of self-programs. This package of self-programs is stored in the central value processing unit (CVPU) and includes a different kind of data which requires deeper encoding and functions to organize and control the information processing and the other personality subsystems. This CVPU linked to the memory operates and stores a huge number of subroutine and programs (values) which are interactive, or automated, and sometimes are incongruent and need direct handling by the active free-self through the program generator sub-unit to reprogram or reorganize them (eliminate - add - modify - combine, etc.). This CVPU contains, within different sub-units, all the personal values which were self-programmed, and all other bio-social, species specific, and societal subroutines and algorithms (values) which are encoded and stored in the superego or social values processing sub-unit.

A values package includes different kinds of programs which are divided into arrays, algorithms, subroutines, and statements. A program is a logically arranged set of programming statements. There are different kinds of statements in the value program. The declarative statements,

or scalars, are non-executable statements, examples being the abstract, universal and absolute precepts, and rules and principles for the individual, such as justice is essential, freedom is the ultimate end, there is only one God, etc. All these kinds of values have heavy weight but are not directed to specific situations.

FIGURE 8

The Structure of Central Values
Processing/Programming Unit (CVPU)



The command statements, on the other hand, are self-instructional, executable statements which are more specific and have direction (vectors). They take the form of injunctions, imperatives, orders, and commandments, which may be either negative, positive, categorical, or conditional, e.g., do, do not do, if..., do, if..., do not, stop, interrupt, end. Some of these orders, or processing algorithms, are more generalized to be covariated or applied to a pattern or recurrent events; some of them are more specific. The Ten Commandments are examples of such social generalized orders.

Value algorithms and subroutines are sets of statement orders to covariate or deal with recurrent cycles and action chains. These kinds of prescriptive commands and injunctions, which are directed either from the self or from the others, and which function to control any of them, constitute an important non-factual part of any language.

At this level, values are self-prescriptive and may be associated with valuative states, such as the sense of duty, commitment, or responsibility, and work as categorical or conditional imperatives (Kant, 1949; Parsons, 1968; Rokeach, 1979; Kohlberg, et al., 1983). They are prescriptive at this micro-programming (internal processing) level in the sense that they have in themselves the power of

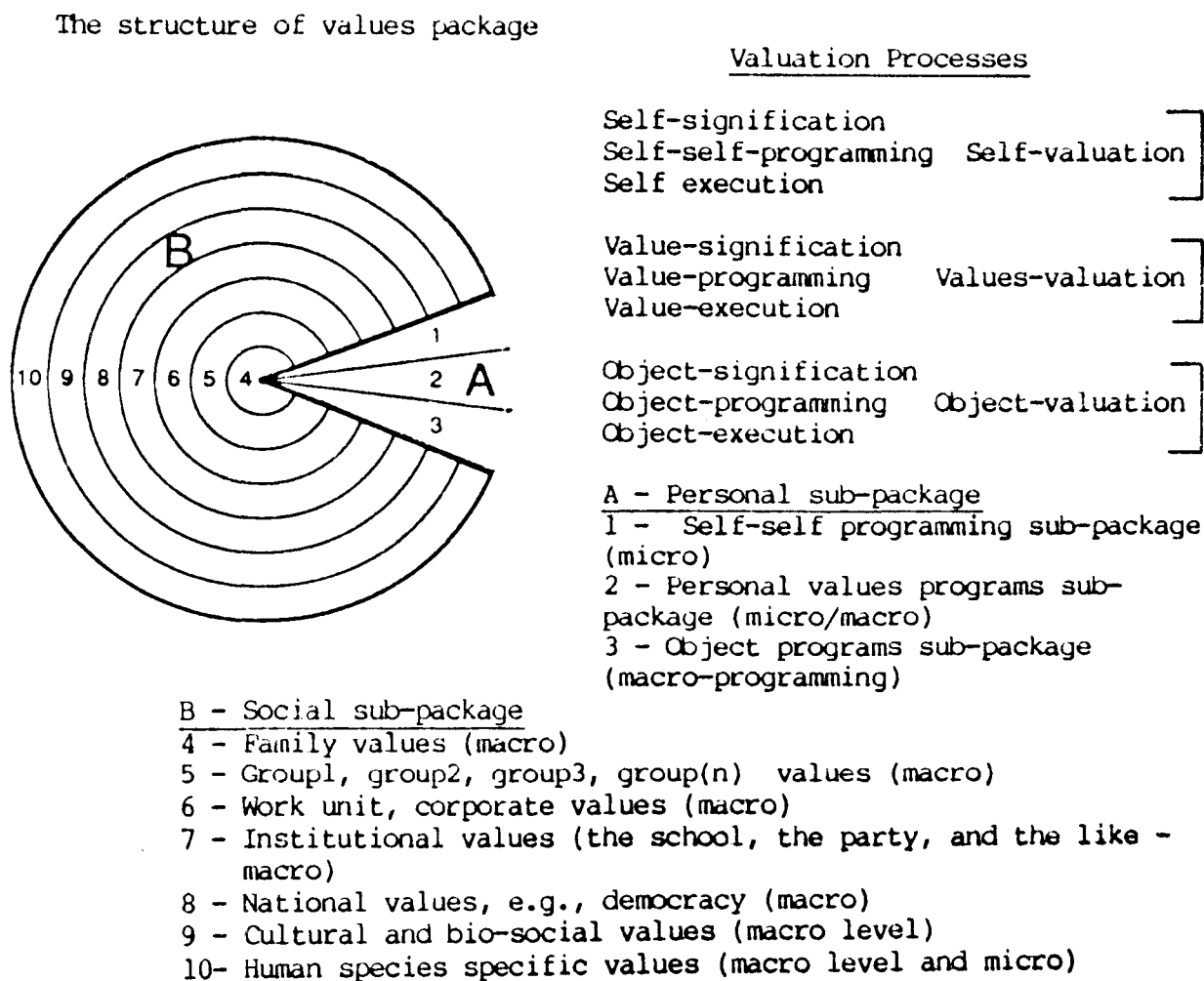
non-conflicting automatic execution once they are processed, as they are directly related to the self which exercises this unquestionable self-command. In other words, the individual prescribes for himself his values, and the social unit prescribes for its sub-units and for its individuals their values. This prescriptive programming mechanism triggers signification processes which trigger the activation spreading processes which yield the feeling of duty and imperativity on the affective level and rationalization on the cognitive level, then arousal and behavior execution. However, value programs and packages, as part of an open, dynamic, interactive, adaptive system, include a huge number of subroutines and algorithms. These include different prescribed kinds of imperatives which make the automatic execution or interruption of any statement or subroutine contingent upon the exigencies in the situation of the environment according to the whole coordinated value processing mechanisms which are managed by the input/output control sub-unit. In other words, values are prescriptive on the micro-programming level but not on the macro-programming level.

The main program execution mechanisms at this programming level, besides these homeostatic feedback mechanisms, are feedforward loops which operate value

executions. The principle of feedforward is conceived as information on a task to be performed which is commonly supplied in the form of instructions and have a directive function (Bjorkman, 1972; Hettema, 1979).

FIGURE 9

The Structure of Value Programming Package



This analysis of this dynamic model may suggest, at least on this level, that it is a pure mechanistic approach to human values. It is necessary, at this point, to emphasize that the dynamics of human beings is different from computers, at least in two aspects. Humans have the self-programming capacities, and they are value processors rather than information processors as they control and manage information by value processing. The human being is also different from animals who are primarily instinct processors. Value processing capacities helped him to control and process, in high speed, the amount of information most needed for his survival and growth. Value processing is the real controlling capacity within his nervous system.

As the human being is biologically programmed by his genes to grow up and to perform in a certain genetically innate way, he is also self-programmed by his personal values and socially programmed by the different levels of social bodies in which he is participating, to grow and perform according to certain predictable patterns and standards. While social programming is globally randomized for individuals, self-programming is specific and works according to a defined logic and sequence. Crude or rough personal values, which are tailor-made, differ from person to person

according to one's different changing hierarchy of biological and neurological maturities and skills, and to his differential environments. These crude personal values, which are the strongest imperatives for the individual, interact with the other different kinds of values and with the requirements of the situation to produce the refined level of personal specific values. The individual develops his self-programs (or personal values) through his experience and through the interaction between his growing innate valuating maturities, his environments, and the social programs encoded by social agencies in his CVPU.

Personal programming functions to perform the individual's personal life strategy by selecting from a wide range of available different kinds of values only those behavioral subroutines that make sense to him, or those that generate the best adaptive strategies which he can perform in a specific situation, task, or environment (Lerman, 1968; Williams, 1967; Smith, 1969; and Sikula, 1971). The available lists of values may be not quite understood, even for the sophisticated person. The most dominant values may not be the logical optimizing values, as they are the result of both the power relations between the individual and the authority systems represented by different kinds of significant others and the degree of his readiness defined by

the degree of the sophistication of his value programming system. While personal values are the operating programs on the top of the CVPU, species specific are in the deep bottom, and bio-social and societal values are in-between.

The reference criterion (which is the crude value) in the signification process develops from childhood to adulthood in three or four developmental stages. The first stage (early childhood, age 1-5) has two sub-stages. The reference criterion in the first sub-stage is always the basic biological need satisfaction (biological maturities and skills to satisfy them). In the second sub-stage, both biological and neurological maturities, and the developing skills to satisfy them, are used as reference criteria. In the second stage (late childhood, age 6-12), the reference criteria starts to build up along the behavioral patterns of the significant others. These behavioral patterns center around both biological and neurological skills and represent a huge variability of different kinds of values. The third stage (adolescence, typical age 13-18) emerges by the individual's personal revolt against traditional significant others as he turns to develop his selectivity syndrome and to be more independent. Personal self-programming and self-valuating skills start to emerge and to develop a tailor-made personal programming strategy. The reference criteria here

are a developed whole of personal self-programming which will continue developing with developing self-valuating abilities into adulthood.

In the adulthood stage, the development centers more on changes in his valuating style and valuating skills and the degree of sophistication of his value package rather than on his valuative maturities. However, biological and neurological maturities do undergo changes in the adulthood, especially in the last phases of the life span according to his biological curve. The developed self-programming strategies and other valuating skills which emerged through adolescence and adulthood, or even through the whole life span, may still have remnants of the kinds of the reference criteria of the first stages which may be insignificant in a normal individual.

The emerged personal value system is associated with the emerging independence and autonomy of personality through the power struggle across generations inside the family and the other social agencies. An individual's independence is the key for developing his valuative skills and his self-programming capacities and to reach the state of autonomy (Erikson, 1968). In this epigenetic multi-modal, polyphasic development, every stage is characterized by generating different intensity levels for each need, and, thus changing

its relative significance, and for the global level of tension and stress control (the available energy for the individual). Every stage is also characterized by different challenges in his environment which require developmental behavioral and role changes. Internal changes, biological, neurological, and psychological, interact with environmental factors which challenge his developing maturities and skills to initiate each stage.

The most important dimension of his social environment is his social values. There are different kinds of social values: species specific values, bio-social values, and societal values. Species specific values are generalized human valuations and value programming strategies for controlling, changing, and developing personal and social systems. They provide the ultimate foundation for all value judgments and actions. It may be reasonable to extend this perspective to say that even the factual, logical, mathematical, and relational judgments (cognitions) are based on basic programs to respect realities, to be objective, to understand, to search for causal relationships and natural laws, to develop maturities to maximum potential, and to program yourself accordingly as the best adaptive way to deal with realities and to control or to reshape the environment. These ways of dealing are valuative executions that get

generalized and reinforced through the human species experience, as they had been proven to be general effective adaptive strategies. These kinds of values, or subroutines or injunctions, such as read, write, speak, work, communicate, respect realities, control, grow, understand, develop, plunge, transcend, balance, self-value, excel, survive, etc., which had become routinized and deeply encoded in the nodes of our CVPU, must be assigned greater importance. Human values, at this level, are not an accident but rather a natural consequence of bio-psycho-social evolutionary, ongoing processes. They are so deep that they are taken for granted.

Though bio-social programs are less deep than species specific programs (values), they are deeply encoded, probably in the unconscious nodes of CVPU. They may be expected to be biologically encoded as an innate disposition through the evolutionary course of the future (at least some of them). They are that deeply encoded and associated with the core of the belief system which always rationalizes them in a way different from their original functions, so they are liable to change only intergenerationally through historical modernization and institutional strategies. These kinds of programs and algorithms had been developed historically through bio-social selection evolutionary process, as they

had been proven to be more effective bio-social selection strategies. Examples are incest avoidance, monogamy/polygamy, masculinity/femininity, fidelity/promiscuity, heterosexuality/homosexuality, and other kinds of bioethical injunctions. Such values are liable to emerge with some innate connection to both autonomic needs and the developing social experience, such as social power distribution, and/or social division of labor and the selective consequences of them on the biological and social selection for survival and growth (Opp, 1983; Axelrod, 1986).

Incest avoidance subroutines are established patterns, or programs, which inhibit sexual arousal and their associated emotions for close relatives and activate sexual arousal and their associated emotions only to the outside subject. Such programs, or algorithms, might include, in their activation spreading and execution, autonomic arousal and inhibition patterns, valuative states and attitudes, beliefs, interpretative schemata, and behavior patterns. Such programs function to enhance biological selection processes, as the historical experience had proved that incest (in this example) produces weaker biological qualities. Incest avoidance values had passed the cross-historical and cross-cultural variability test (over

different times and cultures) before being almost established as a widely accepted adaptive strategy.

Masculinity/femininity programs, subroutines and algorithms (behavioral patterns) are other examples of the bio-social programming. The bio-social division of labor between male and female is a historical evolutionary adaptive strategy which had generated a complicated subroutine (pattern of actions) peculiar to every gender. This sub-package of programs and algorithms, which specifies the pattern of division of social labor between genders, had been proven to be effective adaptive strategies across time and space variabilities. However, the environment and the division of social labor, at this present time, is radically changing, and so is the division of labor in modern society. The existing traditional programs (values) do not perform any more the same effective adaptive strategies which they used to perform in the past (Adler, 1957).

Fidelity vs. promiscuity is another example of these kinds of bio-social values. Fidelity as a behavioral algorithm had proven to be a more effective bio-social adaptive strategy, as it limits the fatal sexually transmitted diseases (e.g., Syphilis, AIDS). The fidel partners have, at least in the long run, more chances to survive and to live healthily and to grow than the

promiscuous partners. Fidelity is also a more effective social strategy to build the quality healthy family which forms the atom of the social structure.

Variabilities exist for every kind of values, and between them. There are always dominant values, sub-values, and counter-values. Values plurality and variability mechanisms generate a full range of alternatives which help open a wide evolutionary path and give a more adaptive change potential to the individual and society. Bio-social values are not exempted from these plural valuative adaptive qualities.

Societal values, such as family values, group values, institutional values, corporate values, and national and cultural values, are social adaptive strategies which program a society or a group as an autonomous system and not necessarily the individual per se (Parsons, 1951; Morris, 1956; Smith, 1969; Williams, 1967; Rokeach, 1979). They are not designed in this open system to execute stabilized rigid patterns of behavior, but to shoot for establishing normally distributed patterns of behavior with definitely expected or designed full range of variability, which allows for and enhances adaptive evolutionary change through an individual's initiation and creativity. Societal values do not program the individual, as he is self-programmed. However, different kinds of social subroutines (values) are transmitted and

stored (through socialization processes) in the individual's CVPU at his disposal to execute from them those that are activated by his personal values and/or by the current values involved in the specific tasks or situations.

Societal values program society as a power system to be organized, mobilized, controlled, stabilized, and developed. They are generated by the interactive, intra- and inter-societal power structure to define the allocation and transformation of powers, roles, labor, and resources between individuals, groups, and societal sub-systems (Lasswell & Kaplan, 1950; Parsons, 1951; Lenski, 1966). Group solidarity (sense of identity or group feelings) or the social system autonomy, is the source of its valuative adaptive strategies (Ibn-Khaldoun, 1958). Societal programs, as society organizing and controlling mechanisms, function to perform certain objectives for the system and for the individual. They generate adaptive global mechanisms through time and space to control individual needs and personal values within the accepted range of normal distribution and regulate ordered inter-individuals and inter-groups interactions. They organize the available resource allocation to create a social motivational network. They reflect the established power structure and the realistic interests. They also

create, in most cases, counter-values, sub-values, alienation or isolation of certain groups and individuals.

While personal values are more simple, societal values are more complex. Every societal value encoded in the CVPU is composed of at least two values, one personal and one societal, as toned personal commitment has to be added to any societal value to be legitimized for the individual as a working societal value. Social values and their derivatives are the central part of the environment of the personal values and they work together in a single interactive unitary system of action.

Societal values and their derivatives are differentiated according to the different power structures and relations inside every social unit. In other words, every societal unit is differentiated by the form of its power structure and by its relative power inside the whole system. Examples of these kinds of units are: family, ethnic, race, and class groups, institutions, corporations, organizations, and different kinds of work units. The power structure, for example, inside the family defines its micro and macro-programming strategies. It defines the degree of equality (or justice) and freedom, or tolerance and love, and the related patterns, or chains of executable actions inside and outside the family. Different kinds of power structure,

e.g., the structure of authority and influence, means different kinds of values and executable algorithms. The unit which has more power or influence on the individual has more compelling encoded programs in his CVPU.

Cultures, ideologies, and belief systems are global multi-dimensional life and power strategies. They are institutionalized, rationalized, and mostly routinized global societal programming based on common and historical experience. However, they include, besides value programming, cognitive (rationalization), affective (conditional reinforcement, rewards, and sanctions), tension (conflict), and actions (social movements). Their rationalizations and the associated practices may be different from their real operating functions. Ideologies have institutionalized programs to propagate themselves on micro and macro levels. They, as multi-dimensional reinforced and institutionalized programs, are more general than their value dimension. However, valuating programs are the core functional strategies which control such multi-dimensional belief systems as they are directly related to its survival and evolutionary growth objectives (Lane, 1962, 1966; Miller, 1972).

As the fields of power structure and the environment are changing, ideologies and belief systems may turn to be

non-functional. However, if they became non-functional, they are very difficult to change and adjust, as they are deeply institutionalized and differently rationalized (Hall, 1977). Valuating dynamics, which operate the social activation spreading homeostatic mechanisms, are the responsible core power to reprogram and to generate the necessary adjustment or changes in any belief system. The belief system is the core component of the superego sub-unit in the CVPU of the individual (social values sub-package).

The individual, by virtue of his sophisticated CVPU, is ready to assume his assigned roles and responsibilities for his individuality, his society, and his species' survival and growth, and to pursue his effective adaptive strategies. Values, at this level, function to transmit human race, evolutionary, accumulative experience to its members, and to continuously enrich and develop that collective experience with the individual's personal, creative experience. In other words, values function to open new evolutionary adaptive paths through this interaction between the existing social values and the creative personal values.

This state of readiness, with all this personality software behind it, is derived from the experience of his society, of his species, and of that which he is developing, and is built on long-acting valuating and self-programming

processes. As the individual is the effective part of his social system and the representative of his species, and a result of ongoing millions of years of a bio-social evolutionary process, he has inside his CVPU all the experiences which his species has gained so far to be better adapted. Values, at this level, function to secure a baseline of readiness and self-confidence necessary for effective coping. The more the individual has valuative abilities and sophisticated value programs, the more he is ready to cope effectively.

The chances of successful coping are partly determined by the speed, the timing, and the efficacy of coping response. Most tasks are time dependent and have to be performed according to prearranged schedules of deadlines or itineraries. Readiness to respond is essential, especially for the significant events which cannot wait. The value system, as a self-programmed package which is encoded in the CVPU, is, at least partially, an ingenious device to ensure an appropriate state of readiness to respond effectively and in a timely fashion, and is a unique characteristic of our species. Adequate anticipatory preparation by self-programming is, in itself, an effective coping strategy, and is, in the same time, part of the homeostatic tension management mechanisms, as the expected

events are generally less disruptive and distressful (Baltes & Danish, 1980; Pearlin, 1980; Taylor, 1982). The degree of stress here is overdetermined by both the significance of the event and the degree of readiness for it.

Through long range biological evolution, human beings developed inherited biological and neurological short range hard structure of readiness to escape danger and to approach need satisfaction sources by automatic and autonomic immediate reactions, e.g., approach-avoidance reactions, tropisms, and reflexive reactions to painful sensations, which constitute a prototype of hard structure self-programming. On the ongoing stage of his whole bio-psycho-social evolution, he is developing his software structure of values (as a full range of anticipatory preparation) to enhance his intermediate and long range state of readiness, to react or to initiate adaptive actions. This software structure functions to strengthen his pre-event anticipatory and post-event active functioning by enriching his coping repertoire and achieving such states of preparedness. The coping process will not be set into motion by events that are totally unpredictable or uncertain. The individual, probably, will not bother developing contingency plans for such an event, especially if he is not in the high risk environment.

Developing a technology of behavioral change requires that both the strategies that people use to achieve such a state of preparedness and the system of occurrence and non-occurrence of life events be identified. Stimulus, response, and response consequences, generalizations, comparisons, and attributions will generate a self-instructional strategy consisting of self-command statements and a whole programming strategy. Natural reinforcers and inhibitors in the natural environment tend to program the behavior by specifying and prescribing the range of behavioral patterns. Reprogramming the reinforcers in the environment (Kasdin, 1980), or reprogramming the self by self instructional training (Craighead, 1979) are strong techniques in behavioral therapy. Auto-suggestion is an old technique which may have some relevance here as well.

Human environments are mostly structured in predictable recurrent cycles and sequences of scheduled routines, reactions, and action chains (Hall, 1977), and ripple effect expectancies, and are governed by fairly stable physical and social mechanisms and laws. The individual builds his readiness to react to such expected routines and scheduled events by using this complete package of values, which functions to widen the circle of control the individual (and society) may have over his self and his environment.

The individual's personality is mostly controlled and operated by automated continuous self-valuation (self-check) processes to allow for durable effective coping strategy, as has been explained.

Brown and Heath (1984) propose a theoretical and clinical model for coping with critical life events based on the concept of preparedness. They hypothesize that predictability and expectedness are a necessary, but not sufficient, condition for preparedness, with preparedness being a joint function of the predictability and the expectedness of the event and the type of coping and preparatory strategies employed during the anticipatory period. They argue that expectational strength is a function of, and is mediated by, not only the stability of the attributions people generate to explain why specific consequences are materialized, but also by (a) their past enactive mastery experiences in similar situations, (b) their current mastery experiences in attempting to gain or regain control of the outcome, and (c) the availability of their social networks and the guidance giving others and successful controlling models. The strategies that people use to achieve such a state of preparedness is a critical aspect of the anticipatory preparation.

While readiness is a more general valuative state, which indicates adequate value programming, preparedness is a more specific quality which is relevant to specific tasks or situations and is part of value execution and macro-programming states. Both readiness and preparedness are essential for effective coping. Uncertain or unexpected events, or expected but so critical to survival that the individual tends not to expect them (nuclear disaster), may provide individuals with little opportunity to engage in necessary preparatory activities, and as a result their life may be affected in a number of unanticipated ways. The problem is that most of the existing value systems prepare the individual to be ready to respond with reasonable effectiveness to the expected and routine events and not the unexpected or to the very risky situations. Individuals tend to hypo-value the expectedness and the seriousness of these events, and thus are bound to lose the chance to be adequately prepared to cope or to prevent them.

Adequate real time processing requires sophisticated value programs and meta-processing strategies. The psychosystem must cope with all conditions and contingencies; even if failure happened, recovery procedures must be built in. Efficiency is crucial. The time span of control is almost

immediate, and rapid response is essential. If the system responds slowly, it may cease to contribute.

Total system operational reliability is the probability of the system breakdown and its likely impact. Meta-processing mechanisms function to build system reliability on the micro-level and system efficacy on the macro-level. There are different kinds of meta-processing mechanisms at this operation level. Signification and activation spreading, which results in transaction or response modes, is one kind of these global meta-processing mechanisms. Another kind is discovery, initiation, inquiry, verification, and reality testing. This includes hypothesis generation and hypothesis testing. Such processes are mostly meta-cognitive and a prerequisite for adequate information processing and for global and local planning (Sternberg, 1985).

Research methods and heuristics are kinds of prescriptive meta-cognitive models which may be different from the descriptive models of inquiry which individuals actually use in their real time processing. Monitoring and attention switching are other kinds of meta-processing mechanisms. They include different kinds and levels of operational checks, reviews, audits, interruptions, stand-bys, corrections, recovery, and restart procedures. Levels

of operational monitoring include monitoring the processing level (self and program monitoring), the output and implementation level (program execution), and post-implementation level. Monitoring is either global or local, periodic for low uncertainty and automated tasks, or continuous for high uncertainty and non-automated tasks. Self-monitoring devices, automated and non-automated, global or local, periodic or continuous, provide essential inputs to reviews, corrections, and to both strategic and local planning. They maintain standards for use in post-implementation and periodic reviews and for directing and switching attentions to perhaps more significant problems.

Monitoring systems function to enhance adaptability and to minimize sub-systems failures, a whole system breakdown, and to activate the contingency plans for recovery. The elaborate monitoring system includes checking the efficacy of the monitoring system itself; it activates, in coordination with the other meta-processing mechanisms (signification and inquiry) the whole homeostatic feedback and feedforward loops (Galbraith, 1973; Brown, 1978; Schiffrin & Schneider, 1978; Snyder, 1979; Sternberg, 1985). Signification and activation spreading and the value package are the core controlling components of these meta-processing mechanisms.

To sum up the basic ideas developed here, values and valuations on the micro level are basic self-programs and self-programming processes which feedback through signification and valuative states, and feedforward through value execution mechanisms. Valuative states, as kinds of value derivatives in the micro level, are the sources of attitudes, preferences, and likings and serve as interfaces that connect all the sub-systems to the self and to each other through the self's conscious and mood. The individual stores inside the CVPU (the unit that processes the values and generates the programming) the different kinds of personal and social values, which may be either a general abstract and non-executable statement, or specific and executable statements and algorithms. These two kinds of statements form a full package of adaptive interactive strategies which prepare him to be ready to respond adaptively to the expected and to the unexpected events in his environments. This package is a product of maturation and epigenetic development across the individual's life span and is the core of the meta-processing mechanism.

CHAPTER 5

Object Valuation and Values Dynamics

at Macro-programming and Program Execution Levels

Object valuations, which are real time processes, center on significating and adapting to the outside social and physical environments. The individual develops, through significating and coping with outside events, his personal survival and growth strategies which include a network of personal goals and sub-goals, and different behavioral modes and algorithms to attain them. This whole network of goals and behavioral routines is directly or indirectly generated and operated by his values and by his valuative competencies and skills, and constitute a central part of his value derivatives. Valuative competencies of the individual may be synchronic and deal with the automated tasks, or diachronic and deal with the non-automated activities and challenges.

The individual, in this fight to adapt successfully, pursues three master strategies to advance his readiness and self-efficacy: the first is to translate his personal values into missions, goals and objectives in his social and physical environments; the second is to automate his reactions to the similar, recurrent and expected events and cycles, and to routinize the activities which he creates or

controls, e.g., work procedures, red tape, etc.; the third, by generating a state of self-plasticity to enhance his readiness, especially to cope with the unexpected, the uncertain, and the ambiguous, and his preparedness to react to specific changing environments and new situations. Discovering these three main value executive mechanisms, goal setting, behavior automating, and plasticity inducing, is the focus of this chapter.

Goal setting is part of object valuation processes that generate the whole package of macro-programming, which includes setting the rules of the game, and the networks of goals, objectives, tasks and activities which the individual pursues to enhance his survival and growth. Increasing specificity characterizes the adult development, as it is a better adaptive strategy. Increasing involvement, independence and personal responsibility for survival and growth means that the individual has to deal with specific challenges and has to solve specific problems in specific situations. Every individual develops through this process a large set of background goals or missions derived from his survival and growth values, as well as more specific goals and objectives derived from them, and activated out of them.

The range of life conditions is either the result of individuals creating goals and opportunities for themselves,

which should be realistic and achievable to match the available resources, and their available abilities, or it can be imposed on them by unintended developments. Values-valuation ensures the match between individuals' abilities and environmental availabilities. Personal goals may be activated by characteristics of the environment, e.g., availability, or by individuals' personal programs. When two or more goals are activated, they may conflict with one another if their satisfaction cannot be pursued by the same course of action. This results in either inhibiting action or resolving the conflict.

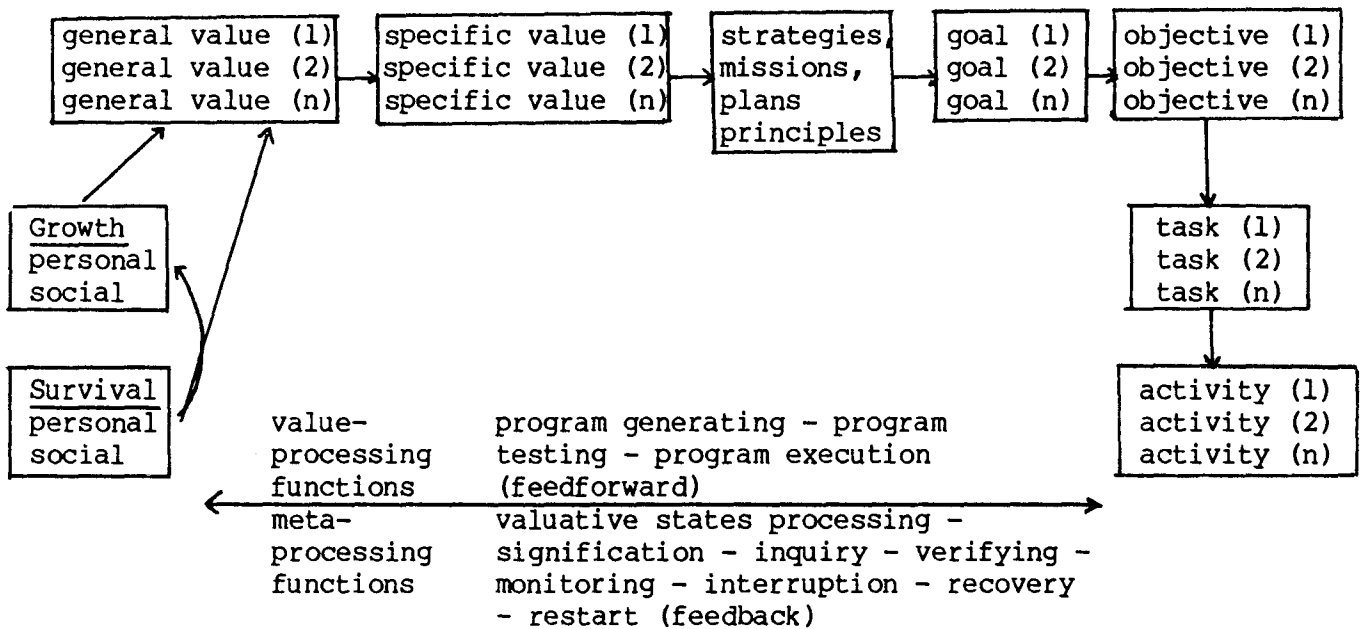
In this object valuation sub-package, the same two types of statements which have been found in the main value package, are also found here: the declarative, non-executable statements (scalars), which are here more specialized as principles for action, norms, rules of the game, strategies, missions, global plans (e.g., norm (1), norm (2), norm (n); principle (1), principle (2), principle (n); rule (1), rule (2), rule (n); strategy (1), strategy (2), strategy (n); mission (1), mission (2), mission (n), etc.), which are either values or value derivatives, on one hand, and commands and algorithms in the form of goals, objectives, tasks, moves, and activities, on the other hand

(Miller, et al., 1960; Newell & Simon, 1972; Gelman & Gallistel, 1978; Siegler, 1984; Sternberg, 1985).

Object valuations in real time interactions are always organized around principles and missions that specify the goals or the adaptive purpose and the significance of the behavior. The significance of any activity or task is counted against its relative contribution to the goal; every background goal is counted against its relative contribution to the mission or the specific strategy, each mission is counted against its relative contribution (or significance) to a single value or to a group of values (specific or general). The significance of any specific value or group of values is counted against its relative contribution to either personal or social survival or growth, or both. Values generate or inhibit, and coordinate the relevant missions, strategies, goals, objectives, tasks, and activities, and their other derivatives which build up this network which generates personal and social goal attainment behavior (Maslow, 1954; Pepper, 1958; White, 1959; Gellerman, 1963; Odiorne, 1965; Graves, 1974).

FIGURE 10

The Network of Macro-Programming



Object valuation at this real time level is the process of assigning significance that generates activation spreading modes and results in activating or inhibiting certain patterns or repertoires of behavior. The object here, which is time and space dependent, may be goal, event, others' intentions, anticipations, mood states, or their actual behavior. Object specific valuation may center on past, present, or future consequential conclusions or anticipations, and help to stabilize one's state of readiness or preparedness. Specific values are patterns of automated and non-automated actions or action chains which

deal adaptively with both the certainties and the uncertainties of the environment.

The intensities of information processing, of post-event self and object feedback processes, e.g., comparison searches, attributional searches, hypotheses searches, selective generalizations, and of emotions and arousals, are scaled for both the significance and the expectedness of the event (activation inhibition intensity). Unexpected failure to achieve more significant goals will trigger more intense spreading than the expected or the less significant will do. Activation spreadings are automated and patterned for stable routines and their expected ranges, while unexpected significant events would cause unprecedented activation spreading.

The change in life circumstances may have a variety of consequences. It may change the position of a goal and its significance; it may also affect the activating potential of the environment for a certain goal or goals. Staub (1984) argues that individuals' goals can usually be arranged in hierarchies according to their importance, but such hierarchies are abstract, and living under certain conditions may be a result of, or influence the position of goals in the hierarchy, or both. Behavior, according to Staub's model, is a joint function of situational influence

and people possessing goals that might be activated by the situation.

For most individuals, as has been discussed, there is no general abstract prefixed hierarchy of operating values and goals which deals the same way in every task, but rather a package of dynamic interactive alternative adaptive strategies which is situational or task-specific. However, automatized subroutines of values and their relevant goals and tasks which deal with the expected routines and cycles, constitute this relatively stable part of this package.

This homeostatically adjustable package interacts with the significant events that represent social or others' personal values and goals in the situation. The individual achieves a good fit with his environment by maintaining such flexible adjustable package of alternative strategies. The significant events activate self-valuating and self-regulatory homeostatic mechanisms that tend to stabilize and/or to recalibrate the value programming strategies. These homeostatic mechanisms function to maintain, to modify, or to induce a wide range of timely changes in the alleged hierarchy of valuating criteria. The degree of risk to survival loaded in every event, would activate or restrain appropriate personal value processing. Survival and growth and their general and specific derivatives are

always the major sources of values and value processing as has been discussed. In an ethnic group meeting, for example, ethnic group values are more likely to be activated by the meeting in the member attending, than any other congruent or non-congruent group values. In war and violence situations, where the survival of a society or a group is at stake, the individual may sacrifice his values of personal survival for the survival of the whole group, e.g., suicidal car-bomb attacks, kamikaze-type attacks, etc. The war which directly endangers group survival, would activate group values intensively enough to overwhelm even the strongest personal values in the alleged hierarchy.

Bower & Cohen (1981) make a distinction between conjunctive goals, that must all be achieved for a plan to work, and disjunctive goals, any of which will allow a plan to work. In a disjunctive tree of goals, the importance of any sub-goal success increases with the number which previously failed. In a conjunctive tree, the failure of any sub-goals has equal importance, and has to be avoided; whereas the importance of a sub-goal success increases with the number of the sub-goals previously achieved.

Danish, D. Augelli & Ginsberg (1984), propose a framework for psychopathology prevention by personal competence development. The focal point of this framework

is to develop the individual's abilities to identify and set his life goals. Setting goals involves specifying goal achievement alternative courses or plans, goal blocking (or plan interruption), goal abandonment, and goal conflict.

Specific values, which are the executable statements in value programming, act either as constraints or as generators of goals and goal attainment behavior. Adding unnecessary constraints, or deleting necessary constraints (hypo- or hyper-valuating) would cause improper value processing and maladaptive behavior.

Specific values in this real time processing level, are time and space dependent; they are dynamic interactive programming for time sequential, goal dependent behavior; day-to-day, automatized and non-automatized decisions, judgments and problem-solving behaviors are activated by multiplicity of these stored specific values, triggered by certain events or objects which are significantly value overtoned.

The example of speed limit may demonstrate how specific values work in simple daily life situations (real time processing level). Let us suppose that Mrs. X is commuting from Danville to San Francisco, California, going to a business meeting (corporate sub-goal, or intention). This situation involves different levels of specific values,

goals, and activities. Examples of these specific values are:

1. As a law-abiding citizen, Mrs. X has to respect the law which specifies the speed limit (a social specific value "A", which specifies a pattern of consequential behavior); "respect or execute the speed limit": this specific value is derived from two other social values, e.g., rationalize gas consumption to enhance survival or growth economy and enhance safety.

2. As an individual, Mrs. X's personal survival is dependent, in this specific situation, on maintaining her personal safety; to maintain her personal safety, she has to drive carefully, within a reasonable speed limit (personal specific value "B").

3. Mrs. X, as a corporate woman, has to be punctual and attend her meeting on time (corporate task derived from corporate specific value "C", which is derived from the value of corporate success).

There may be other specific values involved in the situation, e.g., economy - to be first before others - counter-value against the specified speed limit, etc., depending on the value programs stored in her CVPU. By virtue of such stored subroutines, she is ready to deal adaptively with driving and with the corporate meeting. As

she was running a little late and she was delayed by a traffic jam (event-time-space), and as the freeway traffic was light at this specific moment, she went fast, exceeding the speed limit; in order to make her meeting on time (the corporate value "C", subroutine "Be punctual; if you want to be punctual for this meeting, then go fast," is now executing the behavior and restraining the other subroutines).

After five minutes of driving at 75 mph, Mrs. X noticed a CHP officer citing another car, probably for speeding. The CHP officer activated the social value "A", and restrained the corporate value "C" execution by activating the specific feeling of fear and then the specific state of arousal which automatically executed the appropriate behavioral subroutine. Consequently, she slowed down to the speed limit.

After a while, she checked her watch, or reassessed her obsession about the meeting, so she reluctantly began to exceed the speed limit (corporate value "C" is again in execution mode, after a little conflict, as it is activated by watching the time, or assessing the significance of the corporate goal at this specific time). Moreover, she discovered that most of the other drivers were going fast, breaking the speed limit, and retrieved all the counter

arguments about the practicality of the 55 mph speed limit. Thus, she increased her speed even more (she retrieved selectively the counter values to stimulate, or to rationalize executing this value, in order to resolve the conflict, and to manipulate the situation). While she was driving fast, the car in front of her braked suddenly, and her car was about to crash into it. She was about to be involved in a possibly fatal accident (direct survival is involved), so she slowed down to even less than the speed limit (the personal value "B" executed the new behavior, as this event activated it and put it on top of the alleged hierarchy). After a while, she regained her balance and started to drive within the speed limit.

In this example, Mrs. X, the corporate woman, signified some events in the environment selectively in a way that activated different values' subroutines that executed different modes of activation and inhibition spreading, and homeostatic feedback loops focused on certain specific situations. The significant events around us represent, in some way, different social and others' personal values, which may activate their counterparts stored within us, or may deeply encode some of them, if they are new for us. The value processing context is the basic unit of analysis at this level of object valuation. Every

context includes selective combination of required values for dealing with it.

The space shuttle Challenger accident provides an institutional example which is almost parallel to this individual example. The directors of the program were under the influence of a set of conflicting values:

1. Value "A" is institutional: to meet the deadlines of an accelerated schedule.
2. Value "B" is national: to excel, or to beat the competitors, e.g., the Russian space program, and to achieve superiority over them; this value "B" combined with value "A" and consolidated it extensively.
3. Value "C" is primarily an individual value, and secondarily or indirectly an institutional value as well: the safety and survival of the crew.

There is a host of other specific values and their relative goals and tasks involved in this accident which need extensive study, however, what generally happened was that the added strength of the first two values, "A" and "B", give them the necessary power to win the conflict and to exert the overwhelming prescriptive pressures on the individuals in charge of the program. In other words, the added strength of values "A" and "B" generates activation spreading patterns in the decision makers, which tend to

make them partially, or unconsciously, ignore the significance of the other values involved. When the responsible engineers warned against the possible dangers, they were ignored or pressured, in one way or another, not to insist on their warnings, because delaying the launch and revising the weak points would slow down the schedule and the space program as a whole. Value failure, or the values dynamics of the individuals in charge, who made and executed the decisions to launch Challenger and not to check the design of the rocket booster, is the reason for the accident. If we want to stop such a disaster from happening in the future, our valutive abilities must be strong enough to transcend ourselves, and we must carefully reevaluate and balance our values which we always take for granted. Valutive checks have to be routinized as a part of every institution's dynamics, and as a part of our modern way of life. Automated checks are part of the individual's automated value processing and have to be automated at the institutional level as well. Developing an institutional value processing system, sufficiently automated and sophisticated, is imperative if such a disaster is to be prevented, and this may be one of the most important investments we may be able to have.

Automating values and goals activation and the heuristics of value processing as a whole is a very effective valuative strategy; it is an energy-saving and an energy-mobilizing device. It makes the individual more ready for timely response to the stable environments, and makes specialization, professionalism, and expertise possible. However, it is double-edged, as it may end in rigidity and extension transference.

If we return to the first example to examine it in more detail, Mrs. X, as a matter of fact, used to commute to her office every day. As she used to encounter such types of events on a daily basis, she developed and stabilized automatic patterns of activation spreading and responses to such expected events, and became consequently more ready and more prepared to deal with such typical stimuli. The individual uses at least two different mechanisms to react to specific tasks: the first is to routinize, automatize, or generalize and transfer his valuations and executions to the similar and predictable events (develop ready algorithms and subroutines); the second is to generate a more flexible value sub-package to help him in dealing with both uncertain and unpredictable events, and with the critical and non-critical changes in his environment.

Posner & Snyder (1975) define automatic processes as those that occur without awareness (attention), without intention, and without interfering with other mental processes. However, there are three levels of automation and control according to its strength or depth: conscious, subconscious and unconscious. The degree of awareness defines the level of automation. Any automated algorithm or subroutine, or even a program, has to be released or inhibited and monitored by controlled metaprocesses at one of those different levels of awareness. The format or package of actions defines both the automated algorithms and its automated or non-automated meta-activations.

Individuals exhibit behavioral repertoires and internal processing subroutines and packages that contain standard sets of actions orchestrated with biological and ecological recurrent cycles and action chains, which include the appropriate releasing stimuli to which these action chains and repertoires are adapted to; on the other hand, each culture teaches its members certain social scripts which are almost automatized, and which constitute fairly stable behavioral patterns.

As has been discussed, significant stimuli in the environment would stimulate different values and shift the execution mode from one subroutine to another, changing the

operating hierarchy of values situationally. This shifting strategy from hierarchy to hierarchy according to the expected differential stimulus, may be routinized or subroutinized if the stimulation patterns are stable and the environment arrangements, chains, and cycles of events are fairly predictable.

This kind of value automatization is adaptive insofar as it deals with such environmental regularities. Automatizing activation/inhibition spreading modes and routinizing affective, cognitive, arousal and behavior styles, by channeling them into patterns, formats, standard operating procedures and response sets, function to release the processing overload, to increase the efficiency and the speed of processing, to enhance the state of readiness and preparedness to deal with specific environmental routines, and to stabilize mood states within range. Moreover, the individual tends to reshape and model his environment according to stable routinized patterns to facilitate and enable him to automate his work procedures.

Therefore, there are two kinds of automation: internal or micro-automation, which functions to routinize and manage the self central valuating processes and the homeostatic mechanisms which control the patterns and styles of information, affection and arousal processing, and macro-

or real time automation, which functions to customize responses to the outside routine environmental regularities. These automatized executions (macro-level), may be unconsciously and deeply automated, or subconsciously, or even consciously automated. They are the basis of habituation, transference, and learning, and the source of some valuating states such as familiarity (Mandler, 1984).

Futhermore, there are two sources of automation: the first is the inertia and impulsiveness inherent in psycho-system (and in any system), which tends to generate automated strategies to release the processing overload and to save energy, as automated tasks are executed with less power and less tension, and to free and mobilize the energy sources for dealing with the unexpected, the uncertain, and novelty situations; automation at this level is an energy management and saving device and an efficient valiative strategy. The second is to execute valuation processes with more speed and timeliness to perform the highly complex and sophisticated valiative processes; automation at this level is an energy-mobilizing device and an effective adaptive strategy.

Sternberg (1985) argues that the complex tasks can feasibly be executed only because many of the operations involved have been automatized. "Failure to automatize such

operations, whether fully, or in part, results in breakdown of information processing" (p. 71); he argues that the gifted, as well as the experts, are likely to have higher automatized performance and are more adept at automatization than the non-gifted. Fluid abilities on the cognitive micro-level tend to be activated by novelty situations, and crystallized abilities tend to be activated by automated tasks (Sternberg, 1985; Shiffrin & Schneider, 1977).

On the macro and environmental level, high stability appears to go hand in hand with the individual's tendency to create and maintain a stable context, to the degree that adaptive style changes usually co-occur or co-variate with changes in the context. Many adults, for example, are socialized onto particular roles, which they automate, and whether or not they move out of them may depend entirely on whether they experience a change in context, such as divorce or widowhood, initiating a role shift (Maas & Kuypers, 1974). The context structures of the environment tend to reinforce this process of automated stability; major readjustment can result only from a readjustment in the total social matrix, or in the total physical fabric, as well as from the individual (Bloom, 1964; Waddington, 1975).

Developmental stages are also characterized by a move toward higher spatio-temporal automated stability,

through increasing generalized and automated lines of specialization, and may result in a less intra-individual flexibility over time. Developmentally more advanced systems will require a greater input of information to counteract these rigidity pressures than the less advanced systems (La Bouvie-Vief, 1981).

However adaptive such processes may be at the baseline time, the context may change, and the values, as patterned specialized executions or action chains or the related habits, may stay in a non-functional, non-adaptive way, as they stop performing their initial adaptive functions. Compulsive behavior may be a kind of faulty automatization.

Automatization processes institute the value by conditioning it with strong emotions, arousals, and different kinds of rationalization (activation spreading patterns). Because automated values are so instituted, conditioned and deeply encoded in the individual's central control unit CVPU, they may generate stereotypes and generalized non-functional behavior and attitudes which may cause a high level of rigidity and fixation. This kind of value multiple institution is also responsible for its non-functional continuity.

Generosity, for example, is a very strong and important automated psycho-social subroutine for the individual who lives in a difficult desert environment. It is a strategic adaptive imperative for survival in the nomad desert life. For example, in the nomad tradition, the guest has to be accommodated at least three nights, and the host has to slaughter a sheep in his honor; if he fails to do that, he may be stigmatized. Generosity, here, is a pattern (algorithm), or ritualized routinized behavior in recurrent specific situations. If the same individual went to live in an urban environment, where almost everything is available, generosity, the nomad way, would not perform the same function as an adaptive process for survival. The generosity value and its subroutine will continue to work, and to be executed automatically for a while, or for a whole generation, as an extension transference in a non-functional way (Hall, 1977).

Excessive automatization, on the global level, may represent a high degree of inertia, which may be inherent in the individual or in the environment, and represent a kind of faulty automatization or non-adaptive behavior. The ratio between automatized activities performed by the individual may be indicative of his adaptive valuative capacities, and a function of his personal inertia. The

individual may need, every once in a while, to change his routines or his environment, to keep his valuative capacities intact.

Synchronic and diachronic plasticity, or the general adaptive capacity of valuation, is the main safeguard against excessive automation and rigidity, as it is the source of the individual's valuative competencies and abilities which enables him to stop automatizing and to readapt to the changing situations, and to the non-stable part of the environment. As has been noted, not every chain of events in the environment is that predictable or certain, or has those routinized executive responses. The source of unexpectedness is either faulty information processing, and/or faulty valuation, or unpredictable change or event, and/or predictable but very critical change in the context.

Certainties are present when information processing achieves comprehensive, valid, and reliable list or lists of the existing and potential contextual information, significant to specific value or value derivatives. Risks to survival and growth objectives are always considered, whenever uncertainties, ambiguities or unexpectedness are present.

Environmental variability is the source of adaptability or plasticity. Two main kinds of variations,

and two kinds of related plasticity may be pointed out. The first kind of variation or fluctuation is that which lies within a range around some hypothetical mean values. This kind of variation requires synchronic or dynamic plasticity (or flexibility), to execute the same value using one or different subroutines, to the different, within a specific range, situational variations according to the cybernetic law of requisite variety (Beer, 1966). The second kind of variation is that which entails structural and functional diachronic changes or fluctuations beyond the expected range or beyond the regular thresholds. This kind of environmental variation requires diachronic, creative or strategic plasticity (or adaptability). This strategic plasticity is a different and more global valuating capacity that includes the abilities of automatizing and stop automatizing, of programming and reprogramming, or the ability to develop new effective adaptive strategies.

Variability and parallel selectivity are inherent characteristics in value phenomena. To attribute to individuals a single, shared, fixed system of values is a rather questionable practice. In every known society there is an equal distribution of ideas and a variety of value perspectives; even the automatized value sub-package is very flexible and cannot be understood or separated from the

relevant changing environment, or from the whole package of automatized and non-automatized values. Variability provides opportunities for change, as well as constraints upon its extent and direction. Contradictions, ambiguities, incompatibilities of both the values and the environment, reflect a wide range of conflicting personal and social values and its counter values. This puts the individual in a paradoxical situation which is at the same time advantageous and disadvantageous to him. It is advantageous, insofar as it enables him to chose, to adjust, and to reshape or develop refined personal values which are more convenient and more effective; it is one of the sources of his potential flexibility. However, it may be disadvantageous insofar as it generates conflict and strain, which may cause interruption of internal value processing.

Values do not sprint into being fully instituted, but arise out of the operation of the basic adaptive personal and social developmental and historical mechanisms. This developmental variability is another source of flexibility. The need for flexibility in value commitment as a better adaptive capacity stems also from the findings that loose systems last longer and work better (Beishon & Peters, 1976).

The forces that hamper strategic flexibility may stem from the environment, such as the height of mobility barriers, exit and entry barriers, or from the individual, such as rigidity and inertia barriers. It is important to notice that the shaping of individuals by their social and physical environments, and the shaping of these environments by individuals, are interactive processes which constitute a single dynamic system. A fully contextual account would be needed to specify in detail the kinds of environmental forces that contribute to the shaping of individuals' values, and the individual forces that contribute to the shaping of the environmental or social values which build up the warrants and constraints of both individual and environmental flexibility. Higher degrees of behavioral plasticity will appear in permissive environments, which remove certain selective pressures. The opposite kinds of environments will be associated with reduced amounts of flexibility (Hoffman, 1970; Bantock, 1980; Henry, 1983).

Plasticity increases the potential of timely needed adaptive selective changes in responding to selective ecological and social pressures. This range of potential flexibility may be discovered under conditions that pose challenges to survival.

In the rigidity situations, automatized subroutines, or routinized value hierarchies continue to work while the adaptive goals of subroutines are changing. What the individual retains here, are means to accomplish ends wherein both means and ends have undergone radical alterations. Rigidity, as non-functional routinization, and fixation on means to disappearing goals, affect the whole adaptive strategies and capacities. Some of the by-products of rigidity and over-routinization, in signification level, are stereotypes, nominalization, rationalization, and dogmatism. Some of its by-products, at value programming level, are paradoxical injunctions, intentions, and expectations, and non-adaptive behavior. There is a body of evidence that shows high correlations between rigidity and dogmatism, authoritarianism, negative self-concepts, obsessions, higher retroactive inhibition, greater preservation and stress (Soueif, 1968; Sanford, 1973).

On the neuronal level, the very stability of the neuronal structures in the adult can be seen to be an example of the kind of move toward stability and resistance to change, and some neurologists (McGough, Jensen, Martinez, Messing & Vasquez, 1979; Wisniewski & Terry, 1976) even believe that such resistance to change may be reinforced by brain structures which are relatively specialized for the

synthesis of novel information. However, other neurologists (Scheff, Bernardo & Cotman, 1978) suggest that even stable neuronal populations are able to reorganize their interconnections through processes of reactive synaptic regrowth, and that the mechanisms for plasticity are available.

Flexibility and rigidity are two points near the two extremes on the changeability or control continuum. Rigidity lies in point close to value failure which generates non-adaptive and pathological behavior. High flexibility is a point near the other extreme end, which includes loss of control and loss of respect for the environmental restraints and warrants, and generates different kinds of criminal and outlaw behavior (see Figure 12).

Plasticity, or adaptability, therefore, is the source of our adaptive capacities and our personal competencies, or our valiative abilities. Varied forms of these general and specific personal competencies, or valiative abilities, are likely to affect micro and macro-program generation and execution. Specific and general competencies can determine whether a person feels able, and is actually able, to perform acts needed to pursue specific goals and tasks, and to automate or to stop automating their

execution. On the other hand, coping with the unexpected, negative as well as positive, with the uncertain, with ambiguities, with paradoxes, and with frustrating events, and generally with the critical changes or events, needs a great deal of flexibility, which means, in this context, effective selectivity, or effective valuations and valuative strategies. These valuative competencies are needed to cope with normal variations, as well as to such anomalies and wide ranging fluctuations. Plasticity, or adaptability, as general valuative capacity, is hypothesized here as the general factor behind these varied forms of general and specific forms of valuative abilities and skills.

Plasticity may be defined as the state of positive readiness and aggressive initiativeness which manifests itself best in the effective selectivity syndrome, or the ability to adapt and to cope selectively with different kinds of environmental fluctuations and variabilities. The human valuative system is valuative by virtue of its effective selectivity (Pepper, 1958).

Some theorists tend to identify these kinds of abilities as the basic form of social and/or practical intelligence (White, 1959; McClelland, 1961; Mills, 1968; Meichenbaum, Butler & Gruson, 1981; Ford, 1982; Ford & Tisak, 1983; Tyler, 1983; Danish, et al., 1984; Marlowe,

1984, 1986; Sternberg, 1985). Marlowe (1986), for example, identifies five interrelated but partly distinct definitions of competence in the literature:

One is motivational definition that views competence as the organism's capability for developing goals, and then generating goal-directed activity. A closely related definition of competence is self-efficacy, that is, an individual's expectation of personal mastery and success. Another definition of competence is the ability to perform actions that bring positive reinforcements, or eliminate negative reinforcements; in other words, competence is skill. A fourth way to define competence is to focus on performance. From this viewpoint, the competent person is effective in performing socially beneficial behavior, for example, achieving objectives. Finally, competence is defined as personality traits that are demonstrated in organized patterns of cognitive, affective, and/or behavioral functioning. Several researchers have developed conceptual models of social competence that combine two or more of these different approaches (p. 52).

Marlowe (1986) develops a model of social intelligence that comprises four major domains: social interest (concern for others), social self-efficacy, empathy skills, and social performance skills. He finds in an empirical factorial study, five factors independent from verbal and abstract intelligence; he identifies them as: prosocial attitude, social skills, empathy skills, emotionality, and social anxiety.

It seems clear, from such results obtained by Marlowe and by others as well, that these concepts of social and/or practical intelligence, are mostly confusing, multi-dimensional, and basically non-cognitive abilities; Crandall

(1978) argues that valuing, that is, to have an interest, or to care about something, is the fundamental aspect of this kind of psychological functioning. However, these valuative abilities are rather meta-cognitive, meta-affective, meta-arousal, and meta-action abilities and skills, as they activate selectively, for example, cognitive abilities, and control each activated ability by the selectivity syndrome inherent in them, i.e., selective encoding, selective retrieving, selective combination, selective comparison, selective attribution, selective generalization (Sternberg, 1985), and the same applies to the affective qualities and the other components of activation spreading process.

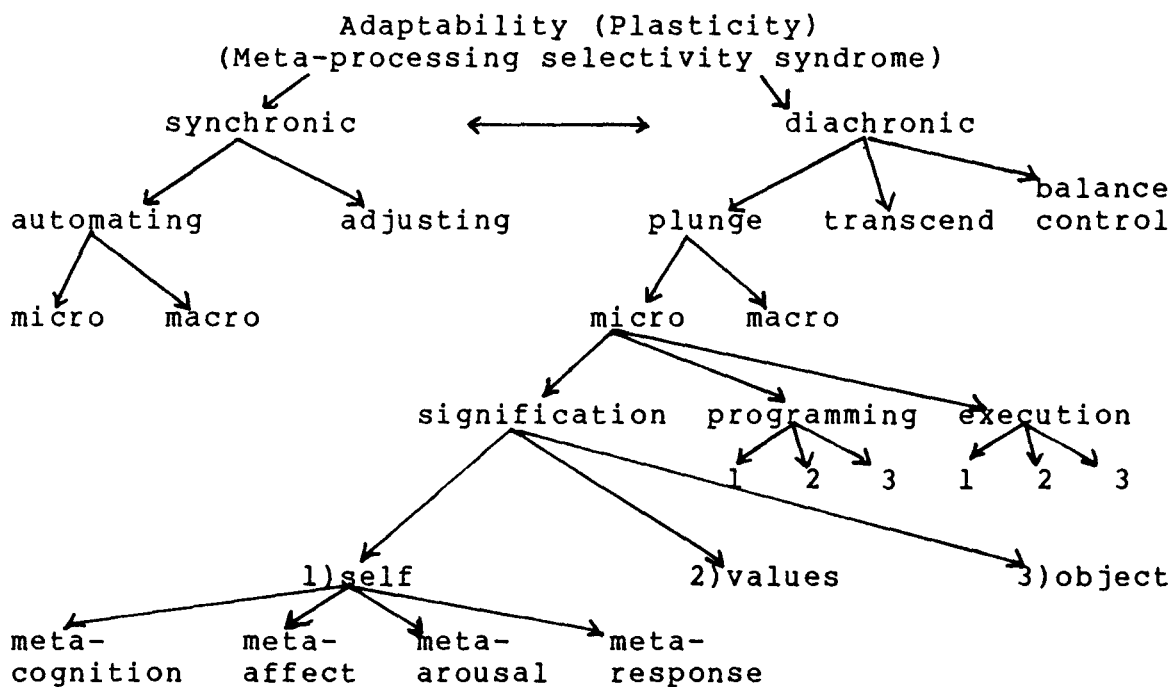
The model proposed in this paper, hypothesizes that there are general valuative abilities, which may be called: adaptability, plasticity, effective flexibility, or creative changeability. The general characteristic inherent in this general valuative meta-processing capacity is its effective selectivity, which functions to enhance survival and growth. There are two kinds of these adaptive capacities: synchronic and diachronic. There are two kinds of synchronic adaptive capacities which deal with the recurrent cycles and routines: the abilities to automate, to generalize, and transfer, and the abilities to adjust these automated

routines to normal fluctuations and variations within these automated algorithms.

There are three kinds of the diachronic valuative abilities which deal with the non-routinized tasks: plunge, transcendence, and control or balance abilities. Each kind of diachronic ability is divided into abilities related to micro-programming (intra-personal), and abilities related to macro-programming (or inter-personal). Each kind of micro or macro-abilities is divided, in turn, into abilities to significate, abilities to program, and abilities to execute. Figure 11 may clarify this classification.

FIGURE 11

Valuative Abilities and Skills



The plunge abilities on the micro or intra-personal level include abilities such as the capacity for deeper and full involvement, the ability to acquire or collect relevant comprehensive knowledge, the abilities of learned ignorance and factitious innocence, patience, acceptance or tolerance or ambiguities, uncertainties, unexpectedness and frustration. The plunge abilities on the macro or inter-personal level include abilities such as empathy, identification and solidarity with the group, e.g., group feeling or ethnic solidarity, group cohesiveness, patriotism, nationalism, participation, the ability to seek the resources of others in coping, the capacity for reciprocity, and the ability to relate effectively to others.

The transcendence abilities on the micro level include the ability to postpone immediate gratification, the ability to decommit and recommit the self to goals and objectives, the ability of timely shifting of focus, switching, and for positive transference, the ability to take risks and pains, the ability to value and to self-value, and the ability of self-steering. The transcendence abilities, on the macro level, may include the ability to transcend the exigencies and attractions of the situation.

Control and balance abilities on the micro level may include the ability to develop self-control, self-knowledge, and the internal integrity which is self-consistency in pursuing certain goals; internal integrity includes the degree of congruity between the espoused values and values in use, and functions to integrate and coordinate between the self sub-systems. It may include also the ability to generate, use, transfer, match, generalize and manipulate values, the ability to make a good fit in the matching process between one's valuables and the situations, or to select the situation which better fits one's valuables and skills.

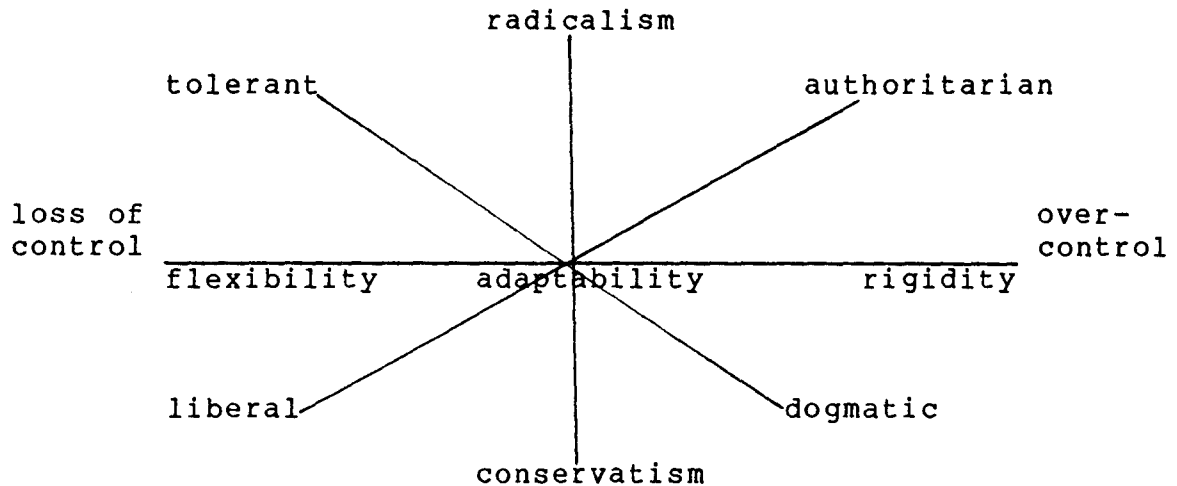
The balance and control abilities on the macro level may include the abilities to select or to set relevant or significant goals, to maintain goal-directed behavior, the ability to make timely decisions (to be decisive), and the external integrity, which is the ability to coordinate between one's missions, goals, objectives, and activities, to fit them together.

This classification is only rudimentary and not intended to be, by any means, exhaustive. More theoretical effort to build on it, to better define and operationalize such abilities, and to reintegrate the literature in this field is needed; different lines of research to support, to

correct, or even to refute the hypothetical existence of such kinds of abilities are necessary. Additional effort to define and suggest the lines of research needed will be introduced in the next chapter.

It is important, in this context, to emphasize that adaptability, as a general valuative capacity, generates, manifests, or represents itself into different valuative skills and abilities, which are differentiated and developed with different kinds of tasks, and with different kinds of social and physical environments. The relation of this general adaptability to these abilities and skills is operational and not hierarchical. Adaptability, or effective flexibility versus rigidity, is different from radicalism/conservatism dimension, and they may be orthogonally related (Kira, 1980). While adaptability is the whole valuative capacity, radicalism/conservatism is a kind of automated valuative style. As Kummer (1971) notes, conservatism may be an adaptive strategy as well.

FIGURE 12

The Relation Between Adaptability and Conservatism

To sum up the main ideas introduced in this chapter, macro-programming and object valuation are the adaptive strategies which the individual pursues to deal adaptively with the challenges in the outside social and physical environments. A single value or a combined set of values generates missions, goals, objectives, tasks, and activities. The values of the individual create the whole gamut of his activities. These activities are either automated activities to deal with the recurrent routines, or non-automated activities. Synchronic plasticity and its related abilities and skills is required to deal effectively with automated activities; diachronic, global plasticity and

its related valuative competencies are needed to deal effectively with the non-automated tasks. More theoretical and empirical research has to be conducted to clarify the nature and dynamics of the valuative competencies and skills.

CHAPTER 6

Value Measurement: Four Proposed Approaches

In this chapter, four interrelated approaches designed to attack the problem of value measurement are to be proposed. The first approach focuses more on measuring valuating maturities and skills; the second proposed approach puts more emphasis on measuring the structures, the functions, and contents of value dynamics; the third approach shifts the focus to defining and measuring the different levels and kinds of valuepathy; the fourth approach is a value contextual analysis which combines all the three approaches for analyzing different kinds of tasks and real life situations.

The basic assumptions behind these four proposed approaches is that valutive maturities, competencies, and processes are pure and clearly different from the pure information processing maturities, skills and processes; furthermore, the valutive processes operate and control the cognitive, affective and arousal processes and the whole psycho-system and its outputs.

Valutive Maturities and Competencies Assessment Approach

The first approach focuses on addressing two levels of value phenomena. The first level of analysis is the assessment of valuating maturities which are mostly innate. This includes identifying and measuring the valuating

maturities required to acquire valuating abilities and skills, and to perform signification, self-programming, and value execution mechanisms, by using both the experimental and psychometric methods. These kinds of neurological maturities may be measured against neurological and similar criteria, and tested against the associated symptoms and behaviors. These relevant criteria may be discovered and developed through appropriate neuro-biological and neuro-behavioral research.

The second level of analysis is the level of valuating abilities and skills (competencies). Valuative abilities and competencies are the developing interactive skills required for performing significating, value programming and value executing processes in different kinds of environments and tasks. Ego-strength, or adaptability, is hypothesized to be the general capacity behind these kinds of competencies and skills, as has been discussed. A preliminary list of such abilities and competencies was given in the last chapter. However, a supplementation is needed here to clarify the last step in their proposed classification (see Figure 11).

There are three kinds of valuating experience with three related groups of specific valuation competencies: self-valuating, value-valuating, and object-valuating

experiences and competencies. Each kind includes four different categories of abilities and competencies: plunge or dip, transcendence, balance or control, and automation skills.

Plunge or dip skills are a general competence to relate, to establish close relationships, to be an active part of the system, to relate to oneself, to relate to one's values and survival strategies, and to relate to the outside significant objects.

Transcendence is a general adequacy to transcend oneself, one's existing values and strategies, and one's involvement in the present. It includes the ability of the self to be object and subject at the same time, to top and over-top the physical and social pressures, and to over-top one's specific plans, values, external and internal extensions to which one is very attached.

Balancing or control skills include the capacities for stabilizing, adjusting, and changing the self, the appropriate strategies and values, and the outside environments.

Executive and automation capacities are general abilities to execute the behavior, to automate the algorithm or to stop automating it, and to allocate the energy resources effectively and efficiently.

Assessing and measuring each of these levels, and identifying, on an empirical basis, the skills required for each, are some of the major objectives of value measurement.

FIGURE 13

Simplified Classification of Valuative Competencies

	object valuation	values valuation	self valuation
plunge or dip	xx	xx	xx
transcendence	xx	xx	xx
balance & control	xx	xx	xx
execute & automate	xx	xx	xx

Assessing Value Processing and Value Dynamics Approach

Measuring the structure, the function, and the contents of values and value phenomena is the prime interest of this approach. Measuring the significance of any event, and the signification styles of the individual, modeling and simulating the alternative program packages and sub-packages, and their automated and non-automated routines and algorithms, and identifying the network of values and value derivatives for the individual or the social unit, are some suggested techniques of assessment. This approach is also concerned with assessing the homeostatic control mechanisms such as cognition management, self and mood management, and activation spreading mechanisms.

Measuring significance and signification styles. A paradigm shift from the measurement of meaning and attitudes, to the measurement of significance and valuative states (meta-processing functions), may prove to be quite useful at this stage, for discovering value structures and dynamics. The measurement of attitudes, which focuses more on assessing the general importance of a specific object, event or concept, reached almost a mature state, and digging deeper into their sources in valuative states may prove to be quite useful at this micro-level. A rudimentary effort to identify and classify these valuative states has been offered (Chapter 3); more extensive lines of theoretical and empirical research are needed to integrate the theoretical and empirical findings in the literature, to operationalize and measure them, and to find their correlates and their whole dynamics within the personality.

On the other hand, the measurement of meaning, i.e., Semantic Differential, put emphasis on measuring the cognitive and affective components of the measured concepts. Even the evaluative dimension in its factorial structure is defined as the importance and the direction (positive or negative) of the concept (Osgood, Suci & Tannenbaum, 1957). In significance paradigm, the focus is on measuring the

relevance and importance of object, event, or concept, to specific reference criterion or criteria.

Congruity principle (Osgood & Tannenbaum, 1955), which may be the most refined version of congruity and consistency theories, establishes the congruent relationship between two stimuli on the basis of their mutual relevance and importance. Rokeach's belief congruence principle (1972) suggests that:

We tend to value a given belief, sub-system, or system of beliefs in proportion of its degree of congruence with our belief system, further, we tend to value people in proportion to the degree to which they exhibit beliefs, sub-systems or systems of beliefs congruent with our own (p. 83).

This congruence with beliefs defines the importance of every stimulus which is belief related.

Significance principle, on the other hand, defines the relevance of a stimulus as the degree of possible positive or negative relations between it and a reference criterion, and its importance as the function of the joint relation between its relative importance to the specific reference criterion and the relative importance of this reference criterion in the individual whole value package. The degree of significance of any event is the function of this joint relationship between relevance and importance.

The significance in this paradigm is defined by matching between stimulus and its reference criteria, and

not between two stimuli, or between stimulus and a given belief. Further, this dynamic process of signification triggers feedback mechanisms that define the significance, and activates a series of chain reactions of activation spreading and other different homeostatic mechanisms. To measure significance, we have first to establish and measure the degree of relevance of the stimulus to a specific reference criteria, and then the importance, and then the significance.

Every individual develops patterns or modes of automated significations related to his automated value package. Signification modes are different ways people pursue in automating their significations. They depend on the degree of sophistication of value packages they have, and on the modes of spreading, of feedbacks, and feedforwards they activate. There are three major kinds of signification modes: object, values, and self-signification. Discovering and measuring these modes of significance for the individual may help in diagnosing and prognosing value dynamics.

Measuring self and values significations involves measuring self-conceptions (self-esteem, self-efficacy, self-confidence, and self-awareness), self-cognitions (cognitions about the weak points and strengths of the

individual), self-arousals (narcissism/masochism), and self action or the response set toward the self (action to maintain, adjust, or change the self or its active strategies). The literature here is very rich (e.g., Bandura, 1982; Sherer, et al., 1982; Raskin, 1979). Integrating the literature and developing well-defined measurement tools, and relating these kinds of self-valuation into a comprehensive theory of self-signification and in different lines of empirical research may help to discover the hidden dimensions and the causal dynamics of self valuation.

Measuring Value Programs and Packages. There are two major analytic levels for assessing and measuring the network of reference criteria in the individual: the first is focused more on identifying the statements, the subroutines, and the algorithms which constitute the actual values of the individual and their derivatives (his value package). Measuring the non-executable statements (the universal abstract values) is well covered in the literature (Rokeach Value Survey); measurement techniques for specific values, or the executable statements, subroutines, and algorithms, have to be devised and developed to identify the network of the individual's specific personal and social values and their derivatives on both micro and macro

programming levels. A reassessment of the main measurement trends in the literature of both executable and non-executable values, and their reintegration in a single framework for value measurement, on this level, may be worked out.

Analyzing the patterns of the individual's behavior is one way to identify his social and his personal values and goals. Discovering these subroutines which may be automated to deal with stable environments, or those which are dealing with specific new tasks or events, paraphrasing them in statements and programs, then, uncovering their grammar or logical syntax, and the degree of relation to survival and growth for each, enables us to understand the whole behavioral mechanisms and value dynamics for this certain individual.

The second level is focused more on analyzing the identified subroutines and goals as the individual's value package. Modelling individuals' value packages and sub-packages, and using different kinds of simulation techniques, provides us with one possible way for measuring value dynamics at this level of value programming. Assessing the individual value package and its dynamics might be performed, at this level, by measuring its basic parameters. Some of these basic parameters are:

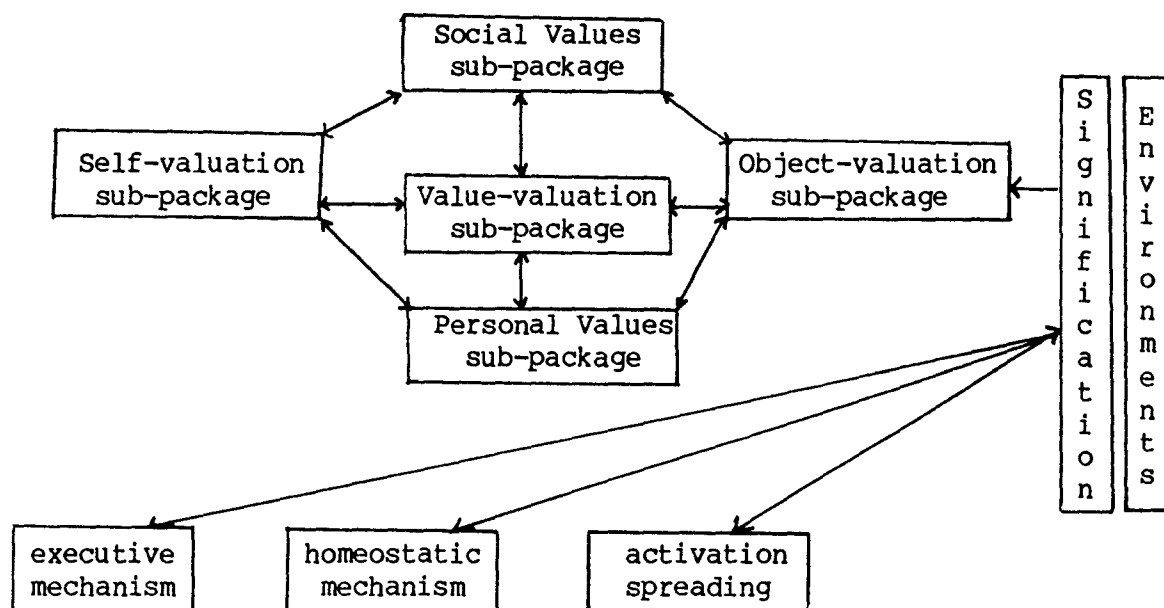
Its degree of sophistication and complexity, which is the degree of elaboration, refinement, systematization or organization, and invigoration; sophistication includes the degree of consistency between the espoused values and the values in use. It is hypothesized that increasing sophistication characterizes the adult value package development, according to flexible sequence.

Its degree of automation and consciousness, which affects the speed, the effectiveness, and the efficiency of the execution.

Its degree of orchestration, or the main symmetrical and asymmetrical balances between its following sub-packages which are orthogonally related: The balance between personal and social sub-packages. The balance between self-evaluation, value-valuation, and object-valuation sub-packages.

The following diagram is a suggested model for value-packaging dynamics, which has been explained in the last three chapters:

FIGURE 14

Value Package Dynamics

Measuring homeostatic control mechanisms. Feedback loops work as a complete causal system according to the principle of circular causality (Maruyama, 1963; Kira, 1980), to control both energy activation/inhibition, and energy trans-activation switching from one sub-system to another. Measuring their basic hard structures, their operating software, and their patterns of dynamic causation and their development, is the prime interest of value processing psychologists.

These homeostatic mechanisms are normally activated by the valuative sub-system. They constitute the device it uses to control, by generating, stabilizing, adjusting, or changing, the whole psycho-system and its adaptive strategies. The selectivity syndrome, and the rules which govern it, are a crucial or core component of these mechanisms.

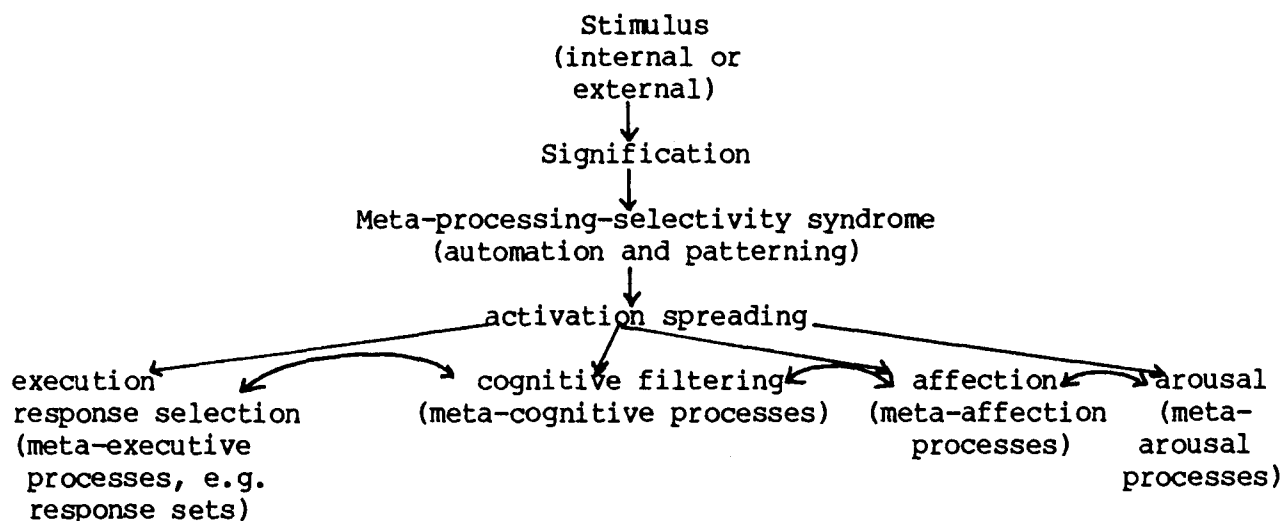
Identifying and measuring these meta-processing mechanisms, their patterns of functioning and developing, their regularities and irregularities, is the core of value dynamics measurement. These meta-processing mechanisms function to enhance the psycho-system reliability by controlling against its breakdown and maintaining its autonomy and efficiency. The loss of these mechanisms means the loss of homeostatic control which represents itself in certain kinds of valuepathy. Measuring these mechanisms involves assessing the degree and pattern of control which the valuation sub-system actually exercises on the whole psycho-system. Modelling, measuring and simulating these feedback and feedforward loops within the whole psycho-system are recommended techniques to assess their exact dynamics.

Four kinds of these mechanisms will be analyzed as more simple examples: activation spreading, or trans-

activation, cognition filtering, mood and self-management, and processes automating mechanisms. All of these four mechanisms may be triggered by signification and valuation processes. While activation spreading functions to control the ongoing "stimulus to stimulus" reactions, and to generate the necessary changes in all the five mood components instantly, cognition filtering functions to control the information processing within the range of significance, tension management functions to keep affection and arousal within the functional ranges, and automation mechanisms work to control and stabilize value processing by patterning or assigning fairly stable automated styles of cognition, affection, arousal and behavioral responses.

FIGURE 15

Meta-Processing Mechanisms and Selectivity Syndrome



Measuring these mechanisms requires specifying the normal and the abnormal ranges and thresholds for each, using accurate measurable units.

Measuring activation spreading. Activation spreading is the basic hard structure for most of these kinds of mechanisms. It is an automatic process which is to be released by significating any stimulus. The activation of any of the five components of this process, would be released automatically by the precedent activation of any other component. Signification process triggers this cross-activation in different sequences or modes. The dynamics of this activation mechanism that control the selection of the next activated component in the spreading sequence, need to be studied and discovered. Measuring specific cross-activation processes involves:

Identifying the sequence, or the mode of spreading.

Measuring the degree of activation or inhibition for each component (its duration, its speed, its intensity, its direction, whether negative or positive).

Measuring the spreading outcome which may be either releasing action, or another spreading cycle, or interruption at a certain component.

Analyzing a whole script of spreading, e.g., complete task or specific situation or goal attainment

behavior. The sequence of spreading runs according to overlapping time series, and reflects different patterns for different individuals or tasks. Using the advanced neurological measurement of the relation between the different kinds of activation in the brain centers is one suggested technique to measure activation spreading.

Measuring cognitive filtering or meta-cognition mechanisms. While information processing psychologists are more interested in measuring the components, the performance, and the speed of information processing, value processing psychologists are more interested in the causal dynamics of the information processing activation, which is one of the outcomes of value processing. Signification process determines the inputs and the degree of activation of information processing, while the package of value programming determines its style. Valuation processes, by determining the inputs, the degree of activation, the style of information processing, and the appropriate cognitive abilities and processes to be activated, affect significantly its outputs and the quality of its productions.

Brown (1978) and others, distinguish between meta-cognitive processes, such as predicting, checking, monitoring and reality testing, and the cognitive processes

per se. Sternberg (1985) suggests in the study of information processing, a meta-componential level to discover the processes that control cognition. Value processing paradigm, suggests three levels of valuative control over cognition and information processing activation, first, by activating selectively the component or the cognitive skill which is valued as the possible effective ability or process to handle the signficated task or event, second, by controlling the selectivity by which this ability or process is handling the task, e.g., selective comparison, selective attribution, etc., and third, by checking, monitoring, significating, feedbacking, and feedforwarding.

Assessing valuative filtering mechanisms, and selective processes includes measuring the inputs, the degree of activation, the style, the significance of every cognitive maturity or skill for every task, and the outputs of information processing.

Measuring information processing inputs. The inputs here are either the information bits which are allowed to pass to the processing level and are valuated to be significant enough to be considered, or the cognitive or information processing components, which are activated or selected in every pattern of activation spreading, the

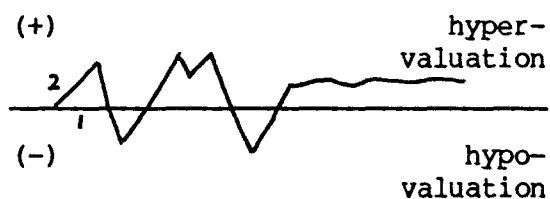
pattern of valuative checking, monitoring, feedbacking and feedforwarding. Sorting out the kinds of admitted bits or the activated abilities and processes, and those which are cast aside or not activated, will help in assessing both the valuation and the information processing sub-systems.

Measuring the degree of information processing activation. Measuring the degree of activation which is triggered by significating an information bit, includes measuring the intensity of activation, the duration of this specific activation, the speed of activation, and the direction (negative or positive) of its intensity. This degree of information processing reflects, in normal cases, the relative significance of the stimulus. Using EEG polygraphs, and specific polygraphs for those specific centers in the brain operating the activation, is one suggested way for measuring the degree of activation. Polygraph frequencies and waves give the four dimensions of activation:

FIGURE 16

The Dimensions of the Degree of the Activation

- 1 - duration (e.g., chronicity)
- 2 - intensity (e.g., acuteness)
- 3 - direction of the intensity (+ -)
- 4 - speed (e.g., the suddenness or the time of the onset)



Measuring the processing style. This involves measuring the processing switching circuits within the psycho-system, and the styles from switching between and within the five sub-systems, and the five kinds of processing. This automatic switching from different kinds of information processing, e.g., selective encoding, selective retrieving searches, selective logical processing, to different kinds of valuations, e.g., object-valuation, value-valuation, self-valuation, plunge, transcendence, balance, is regularly performed according to automated patterns of trans-activation. It includes, at this level, measuring the selective monitoring systems such as periodicity of monitoring, global and local monitoring processes, implementation and post-implementation monitoring, and the styles of the individual monitoring and attentional shifting dynamics.

The objective, at this level, is to measure these trans-activation or switching patterns which are hypothesized to determine the cognitive, as well as the affective, the arousal, and the behavior styles. The dynamics of switching, or getting hooked on, may be measured either neurologically, or behaviorally, using both the experimental and the psychometric methods.

Measuring the degree of significance, or the relative importance of each cognitive maturity and skill.

The main assets of the individual, which determine his self-worth, are his valuative, cognitive, and biological maturities and skills, and his personal and social values (his adaptive strategies). Valuating these main assets by the individual, which is the process of value valuation, includes valuating his cognitive maturities and skills, besides his other valuables, against the task, or the new environment. Moreover, the individual chooses the task, if the task is selectable, that fits his valuables and abilities.

The degree of significance, or the value assigned to each maturity or skill determines its possible use by him, and thus its potential growth. Measuring its degree of significance, or its relative assigned value, helps to establish measures for self-cognition, and for the negative or positive discrepancy between his real self-worth and his perceived self-worth, and to understand both cognition and valuation. Identifying what the individual considers his maturities and skills, and measuring his assigned significance for each, in general and in specific tasks and situations, is one way to measure this dimension.

Measuring information processing outputs. Value processing psychologists are interested in measuring the outputs of information processing, as far as these outputs are ready-made products for signification, and as possible activators of new series in the continuous processing.

Measuring such cognitive filtering, or meta-cognitive mechanisms, will help in testing one of the hypotheses of the model, that valuative processes causally control and functionally operate the cognitive processes.

Measuring self and mood management mechanisms (meta-affective and meta-arousal mechanisms). Signification processes activate differentially affection and arousal, as well as information processing, as has been discussed. The activation of these different states of mood fluctuates along the four different dimensions (direction, intensity, duration, speed), within different ranges.

The first line of meta-affective and meta-arousal mechanisms that control emotion and arousal activation, is the signification process which controls the intensity and quality of emotion and arousal activation. Defining experimentally the normal ranges of activation for each mood component and its variability, needs an extensive body of research. They are important indicators of psychological health and valuepathy. The individual experiences mood

abnormalities, whenever one or more of these mood components ranges below or above its stable automated calibers. Stabilizing these fluctuating ranges within normal, is very valuable and significant for the individual to keep the valuative process in a reasonable control of behavior. Psycho-system reliability is the probability of the system breakdown and its likely impact. The reliability and autonomy of the psycho-system and the stability of personal processing, are some of the most important personal values which are directly related to a person's survival. They are too significant for him, to the extent that he may compromise some of his social values, and even some of his less significant personal values for stabilizing these vital processes. Hyper-activation, or hypo-activation means hypo- or hyper-valuation, which may cause interruption or disruption of the whole valuation sub-system (the controlling sub-system) and result in disturbing the whole functioning of the psycho-system. Therefore, the stabilization of this process means for him "to be or not to be" in control, and is equal to his psychological survival as an effective human being.

Abnormal fluctuations are regularly activated when the individual significates a stimulus as extremely significant, uncertain, unexpected (negative or positive),

and when his expectancy runs beyond the capacity of his operating value package. Such fluctuations trigger vicious feedback loops which tend to amplify these abnormal fluctuations. An abnormal fluctuation generates maladaptive responses, which are signified negatively, and thus, trigger more abnormal fluctuations, and more maladaptive responses (Myrdal, 1971; Maruyama, 1963; Kira, 1980): extreme negative signification (NS) -> abnormal fluctuations (AF) -> maladaptive response (MR) -> extreme negative signification -> more abnormal fluctuations ->

Such abnormal fluctuations affect negatively the automated and the non-automated processes of all the personality sub-systems. The driver who automates his stop on red signals, may continue and not execute the automated stop under the influences of the abnormal mood fluctuations, as these fluctuations cause interruption in the automated processes. The literature here is very decisive and rich about the negative effects of anxiety and stress on individual functioning, such as on decisiveness (Hawkins, Bradley & Gordon, 1977; Janis & Man, 1977), and on the interruption of cognitive processes (Simon, 1967).

To stop such feedback loop of abnormal fluctuations, and to buy the necessary transitional time, to develop, to adjust, or to change his value package, or to activate the

needed competencies for coping more effectively with such stimulus, the valiative sub-system generates different lines of specific strategies to stabilize abnormal mood fluctuations, and reassume its control over the psycho-system. There are three different but interrelated lines of such contingency strategies, which need to be assessed and measured:

The first line of defense against such abnormal fluctuations, is the developing of a more sophisticated value package which is able to cope with the expected events, and a creative flexibility to cope with the unexpected or the uncertain situations; the more sophisticated the value package may be, and the more creative flexibility the individual may have, the more he is able to cope and to deal with such events. This system of conditioned values and subroutines, and these personal competencies, do not only function to cope with the outside environment, but also to stabilize the mood states within their normal thresholds. As they put the individual on a state of readiness, as has been discussed, they help to prevent and alleviate such irregular fluctuations. Value packaging functions, here, as the normal mechanism of self and mood stabilizing, as it controls generating normal fluctuations through the signification processes. The importance of assessing and

measuring the individual's state of readiness, as a function of both the sophistication of his value package and his creative flexibility, has to be stressed here.

The second line of defense against such abnormal fluctuations has to be activated, or energized, as a contingency and crisis management strategy if the first line of "values/flexibility" failed to do the job. These different mood management strategies function either to help the inadequate operating value package as supplementation, or to buy more time for the self to reprogram its value package, and to activate its flexibility, to be more able to cope with the new events, and to stabilize its mood fluctuations.

To achieve these transitional emotional, arousal, and cognitive stabilities, the valuative system adopts new specific kinds of stabilizing strategies. There are at least two kinds of strategies at this level, devised to stabilize these abnormal fluctuations along the four parameters of the activation process (intensity, direction, duration, and speed). These strategies especially address those of the arousal activation as it is more essential for behavior execution. The first of them functions more to stabilize hypo-valuation symptoms and syndromes (below normal, or negative fluctuations), by stimulating the mood ranges. Examples of

this kind of strategy are addicting stimulating substances, e.g., coffee, smoking, exposing the self to stimulating events and environments, e.g., gambling, and initiating risk-taking activities. The second kind of stabilizing strategy functions to stabilize the results of hyper-valuations or the fluctuations above normal (positive fluctuations). Examples of this kind of strategy are addicting inhibiting or releasing substances, e.g., alcohol, exposing the self to relaxing environments (more recreation or leisure time), and initiating tension reducing/avoiding tension increasing activities, e.g., sexual or sensual indulgence, binge eating. Some bipolar strategies may function both ways, e.g., sports fans, fanatic religious or ethnic groups, and secret societies.

Measuring both kinds of tension management mechanisms using such indicators is important to define the degree of hypo- or hyper-valuation in a person or a group, and the range of normality of such strategies (Moore, 1965; Guessous, 1967; and Kira, 1978, 1980). Kira (1978) develops a scale of tension management mechanisms (TMM), based on this concept; he finds in an empirical causal study, on different societal models (tribal, rural, and urban), two second-order factors within this scale that indicate this suggested bipolarity. He finds also that TMM play the role

of the independent variable in the urban model, and the higher the TMM, the more radical and more modern the individual in the urban setting, as it pushes the personality toward liberalism or radicalism and modernism. In high tension environments and high risk situations, e.g., war or economic crises, the personal values of internal stabilization and system reliability may supercede social values and morals, and may generate more complications, as has been discussed.

The third line of defense mechanisms, which is the self-defense strategies, would be triggered or stimulated if both the first and the second lines of defense failed to stabilize mood states fluctuations. The ego tries to master these fluctuations, first by adopting realistic values and problem-solving methods, and then by tension management mechanisms; however, it may attempt to alleviate these anxieties by using methods that deny, falsify, or distort reality. Examples of these self-defense mechanisms, which have to be measured, are rationalization, repression, identification, projection, reaction formation, fixation, regression, sublimation, and compensation (Freud, 1933).

The domination of such self and mood management mechanisms as the operating stabilizing strategies, would affect dramatically the effectiveness of the existing self-

programming strategies, and the operating value package. Brainwashing is a value-changing technique which uses mood fluctuation-inducing methods, e.g., unexpected, massive, sudden stimulus to effect pain, fear, and anger, torture, and humiliation, which induce emotional and arousal overwhelming to stop or interrupt the operating value package for the individual. Brainwashing was used to effect religious and ideological conversions. The immigrant, mostly, gets this initial shock before he reprograms himself for the new social and physical environment. Chronic griefs and acute emotions precede in a great number of cases of critical life transitions (Brown & Heath, 1984).

Measuring automation mechanisms. The valuative dynamics create and control the stabilization of processing, partially by generating different automated styles of cognition, affection, arousal, and execution, on micro and macro levels; the valuative style controls and activates the cognitive and affective styles by different homeostatic ways. Measuring these different kinds of styles on these different levels, and assessing the dynamics of their coordination or differentiation, and their changeability or stability as a whole system of integrated automated styles of the individual, using measurement and computer simulation

techniques, may clarify value dynamics at this level (Sternberg, 1985; Schneider & Shiffrin, 1977).

The Measurement and the Clinical Assessment of Valuepathy

The third approach in value measurement is the clinical approach which puts more emphasis on measuring and assessing valuepathy. Some of the concepts of the valuepathy have been discussed and defined. The concept of valuepathy is based on the basic hypothesis that any kind of psychopathology is causally attributed, in one way or another, to values and valuative processes, as they are the controlling mechanisms in the psycho-system. Addressing psychopathology or valuepathy at this level means addressing its roots, its causal factors, and its controlling mechanisms. The symptoms of valuepathy are different kinds of either hypo or hyper-valuation which cause maladaptive behavior. Valuepathy may be caused either by defects on valuative maturities, and/or lack of valuative skills and competencies, and may result from faulty signification, faulty programming, or faulty execution, or from their possible combinations and complications.

Defects in activation/inhibition spreading mechanisms, or in the feedback and feedforward loops, which are coordinating the signification, the self-programming, and the executive mechanisms, and are combining and cross-

activating self-valuation, value-valuation, and object-valuation processes in a single operating system, have to be assessed and measured against well-defined clinical criteria. Each kind of valuepathy has to be reduced to its real causes in this operating value processing, to be better understood, and to be better dealt with by using the appropriate intervention techniques.

The main hypothesis here is that the failure in these valuating processes and their supporting feedback loops and homeostatic stabilizing mechanisms, plays the major causal factor in different kinds of valuepathy, and causes different degrees of hypo and hyper-valuation, and different kinds of maladaptive behavior. Identifying and measuring these kinds of valuepathy, are the central concern of this third approach.

Value Contextual Analysis Approach

The fourth approach is the values contextual analysis, which forms the first level of macro-analysis. Values contextual analysis (VCA) is a more global approach; it incorporates all the other approaches of value measurement, with more focus on values and valuative processes as parts of a single, broader, interactively developing life system that includes the social and physical environments.

VCA covers, at this level, measuring the environments of the individual, the value systems, and the value executive mechanisms. It comprehends measuring the structure, the function, the dynamics, as well as the contents of this global evolutionary process. Measuring the environments of the individual, or the specific tasks or situations means measuring the main parameters which affect or are affected by values.

Environmental variability, predictability, plasticity, the amounts of restraints or tolerance, the degree of freedom and fairness, the network of environmental periods and cycles, the network of social values, goals, and power structure, are examples of such environmental or task parameters. Measuring value executive mechanisms involves measuring the network of personal goals and value derivatives, discovering goal setting, goal substituting, and goal eliminating mechanisms, and assessing execution automation modes, and the interaction between environmental and personal networks.

Values are best measured, at this level, by task analysis and case studies. Specifying the packages of both individual and environmental values, and their derivatives, is the first step. This includes the measurement of each value and of all the possible statements and commands

included in every value. We also have to identify and to measure the specific stimuli, patterns, and cycles of events which activate these specific valuating and self-programming processes and the dominant chains of actions in the task. The focus should include identifying and measuring the required basic value competencies and integrities as well.

The classes of tasks to be selected should represent the different tasks in the environments. Automated daily life tasks, at different levels of automation, and non-automated conscious tasks, such as conflict resolution and dilemma situations, and the kinds of complex tasks that blend different automated and non-automated specific subroutines, should be represented. Computer simulation for different classes of tasks, may help to discover their major causal networks, sequences and feedback mechanisms.

Within the framework of tasks analysis, different forms of specific value tests may be developed. One of the traditional specific value tests is the lie detector, which uses the arousal dimension in the activation process, to uncover this specific valuating behavior. Similar tests, using polygraphs for the five different valuating dimensions or associated processes in the same time, may be developed to check their actual dynamics. Another modern example of verbal specific value tests is the Stanton Survey (see

Klump, 1980), which tries to measure honesty in certain tasks. It is widely used to select employees for tasks which require handling cash and valuables.

Task analysis may be a key instrument for better understanding our real life situations and for maximizing our scientific and practical skills to deal with the different scientific and practical challenges, e.g., education, counseling, program evaluation, organization. Specific value analysis may help us to develop new perspectives for testing all the specific components of the task, and their interacting processes, and to cross-validate its dynamics through computer modelling and simulation.

Case studies may help to put into focus a certain case, and should be subsequent to task analysis, or a central part of it. Intensive experimental designs to study a single individual or a single social unit, for example a family, may be performed to measure value dynamics on the job or in a clinical situation. Componential analysis is the first step in identifying the main parameters of the task; causal analysis discovers the dynamic causal mechanisms of the task.

In this chapter, four measurement and assessment approaches to values and value processing have been proposed. The first centers on the assessment of the

valuating maturities, competencies, and abilities. The second focuses more on assessing value processing and its dynamics; it discusses measuring and assessing significance and significating styles, and value programs and packages. It also addresses testing and evaluating the homeostatic feedback mechanisms, such as activation spreading, meta-cognitive, meta-affective, meta-arousal, and automating mechanisms. The third approach puts more emphasis on measuring and evaluating valuepathy and its manifestations. The fourth approach combines all the available techniques and approaches in value contextual analysis, which includes task and case analysis for theoretical, as well as for practical applications. Both experimental and psychometric methods, and other dynamic techniques, such as simulation, are suggested for use in these four approaches.

These four approaches should interact to produce the desired valid and reliable knowledge of value domain. Using this valid and reliable knowledge to address or to improve significantly the techniques of dealing with our practical challenges, and to optimize our adaptive strategies, is again a valuating and value programming post or pre-informational strategy.

The goal in this chapter was to propose and define different approaches and levels of value measurement by

introducing and defining some ideas and concepts, based on the proposed model of value dynamics, which may be developed in different measurement techniques and in different lines of research to integrate the literature along this broad scope, and to check the validity and the practicality of the proposed model. The approaches which have been discussed here are not to replace the traditional approaches, but rather to develop, to integrate, and to enrich them.

CHAPTER 7

The Limitations/Extensions of the Model

A Summary and Discussion

This chapter will summarize the main concepts of a model for values processing dynamics and will address four limitations which may restrict its application to macro-analysis, to the area of value content, to the religious and belief systems, and to the specific domains of human behavior, by proposing four parallel extensions. Most of the classical value theories do not lend themselves to the study of value processing and dynamics. The central epistemological enterprise in this paper was to develop a fresh analytical device for values, which covers both their causal and action nexus, and is thus able to explain convincingly value dynamics and has, in the same time, unrestricted pragmatic scope and a wide range of practical applications.

The proposed model suggests three levels for addressing value dynamics. The first is the level of significance and the signification. The individual significates anything differentially according to its vitality to his survival and growth and to the network of implicit and explicit derivatives. The signification process evaluates (or over/under evaluates) any event and triggers the

activation spreading mechanisms with intensity equal or parallel to its significance. This dynamic process of signification is the core of the instant value processing mechanisms which activate different sequences of cognitive, affective, arousal, and action components, and yield homeostatic stabilizing mechanisms.

There are three kinds of signification or valuative processes which interact with each other: self-valuation, value-valuation, and object-valuation. Value-valuation centers upon signifying the valuables of the individual, which includes his values and their network of internal and external derivatives and integrations. Self-valuation, on the other hand, is a central device that allows the self to check and double check itself against its main survival values and their related vital strategies and to continuously adjust itself according to a changing situation. Self-signification triggers activation spreading which involves comparisons and attributions on the self-cognitive level, self-conceptions on the self-affective level, narcissism/masochism syndrome on the self-arousal level, and response set on the response or action level. Self-valuation generates the whole valuative, affective, cognitive, arousal, and actions styles and patterns. It is one of the most

important sources of both valuepathy and psychological health.

The second level in addressing value dynamics may be performed by analyzing the value system as self-programming mechanisms. Theorizing values as self-programming processes, and as a package of social and personal programs, may prove to be a more useful, realistic, and testable approach. Values and their derivatives, which are the reference criteria in the signification process, are materialized in micro (intra-system) and macro (inter-system) programming. There are two kinds of dynamic processes within the micro-processing level. The first is the valuative states formation, e.g., anticipation, optimism, intention, attention, obligation, familiarity, and their dynamic specific derivatives, such as attitudes, preferences, and desires. The second is the values programming and packaging. There are two kinds of statements in value programs which are stored in the value processing/programming unit: declarative, nonexecutable statements, which are these kinds of abstract universal values; and executable statements or commands, which are either negative or positive, imperative or conditional. At this level, values are self-prescriptive programs. Feedforward mechanisms help in executing these personal and social programs and algorithms. Values at this

level function to secure a baseline of readiness necessary for effective coping to structured environments.

The third level in addressing value processing dynamics is the level of macro-processing or macro-programming and program execution. The individual develops through significating and coping to outside events his personal survival and growth strategies which include a network of missions, personal goals, objectives, tasks and activities, and different behavior modes and algorithms to attain them. This whole network of goals and behavior routines is directly, or indirectly, generated and operated by his values and by his valuative competencies. Part of this programming package is automated to deal with the expected routines in the structured environment more effectively and efficiently. Other parts are programmed to deal with the unexpected, the uncertain, and the changing aspects of this environment. Flexibility or adaptability, which is characterized by the selectivity syndrome inherent in it, is the source of valuative capacities and competencies which deal with both the routinized and the non-routinized activities. While the synchronic or dynamic plasticity and its related competencies generate and monitor the automated activities, diachronic plasticity and its related abilities deal more with the non-automated tasks.

Four measurement approaches have been proposed to check the validity and practicality of this model of value processing. The first centers on the assessment of valuative maturities, competencies, and abilities. The second focuses more on examining value processing and its dynamics through measuring and assessing significance and signification styles, and value programs and packages. It focuses also on evaluating the homeostatic feedback mechanisms, such as activation spreading, cognitive filtering, or meta-cognitive, meta-affective, and meta-arousal or tension management mechanisms. The third approach puts more emphasis on evaluating valuepathy and its manifestations. The fourth approach combines all the available techniques in a value contextual analysis through task and case studies. The central hypothesis of this model is that values and values processing actually control the whole components and processes of personality by the selectivity syndrome inherent in them according to the individual and/or social survival and growth.

However, this proposed raw or prototypal model does have limitations and needs some extensions, supplementations, and clarifications to counter these limitations. First, the model does not address adequately value macro-analysis and macro dynamics. Second, it does not cover adequately the

problem of value contents either; neither does it explain where religious and supernatural belief systems stand. Nor does it discuss persuasively its assumed applicability to all the domains where human behavior is involved. In the remaining part of this chapter these four limitations will be addressed by introducing four extensions to clarify the applicability of the model along these four points.

The strategy to build this conceptual model started by drawing a wide theoretical map of the psycho-system, then pinpointing the site of values and valuation processes on it. Next came the drawing of another crossing map of the whole life process, which constitutes a single developing field, and then pinpointing the site of values on it. This cross-examining multiple perspective strategy helps to achieve the wide scope and precision in the same model and to extend it to perform micro- and macro-analysis as well. To explain this point more, we assume that the same valuative processes are not operating only the psycho-system, but also the small societal and mega social systems as well. Any valuative process in any social units, e.g., signification, programming, execution, is performed by the individuals who are highly identified with their unit. The sense of social unit, e.g., ethnic solidarity, is the first source of its specific values and valuative strategies. Its ego strength

(the strength of ethnic solidarity, of group cohesiveness, of nationalism) stimulates the sense of its specific survival and growth, which would generate all the group values and goals, and activates signification, programming, and value execution mechanisms in those group identified individuals. Such social values and subroutines are encoded in the member's CVPU, along with other groups' values, in his social values sub-package.

Every civilization in history has to have its valuative capacities, to grow dialectically in its specific time and space environments, and to build its specific value package. If it lost its valuative capacities (plunge, transcend, balance, control, automate, and stop automating), and its creative flexibility, that means the beginning of its end (Toynbee, 1958, Ibn-Khaldun, 1958). The individual is still at this macro level, the center of any civilization, and any social valuation will be performed by individuals who represent or identify themselves with it, through the institutions and organizations devised and operated by them (as part of their external extensions), and through the social values package programmed by them. Social valuepathy may be identified, diagnosed, and prognosed at this level almost the same way at the micro-processing level. Social and civilizational tasks and case studies may be performed to

discover the main specific mechanisms of social valuation dynamics.

The second limitation or extension is that the proposed model may cover some of the general mechanisms of value dynamics but does not go through to value content. The main three processes (signification, value programming, value execution), which are the core of the value dynamics model, are the constants of the value system, while its contents, which are the general and specific values within the value package, are its variants. We have to accept the fact that this model does not address, so far, the problem of values contents. Moreover, the content was, so far, beyond its scope at this analytical level. The contents of value are assumed to be highly controversial and philosophical as they touch a loaded issue. It was not the intention of this paradigm to add more controversy and uncertainty, but rather to add more clarity to our knowledge of the value domain. However, any comprehensive model cannot simply ignore the problem of the content, and we would rather extend some very general hypotheses about the contents of value systems.

There are four kinds of value orientations. Every one is related to different kinds of valuation competencies and abilities and belongs to a different stage in value historical evolution and personal development. The first

includes the values of love (Erikson, 1964), care (Gilligan, 1982), and attachment, and is related to plunge or dip skills. The second covers the values of freedom (individual and social), independence, and detachment, and is related to transcendence skills. The third is the values of justice (Kohlberg, 1984), compromise, balance, and equality, and is related to balancing skills. The fourth includes the values of achievement, success, effectiveness, efficiency, and self-actualization (McClelland, 1987; Maslow, 1968), and is related to control, execute, and automating and stop automating skills. Every kind of value polarization or syndrome is reflecting differently the object, the self, and the value valuation levels, and expresses a dominant mechanism in a certain stage of the cultural development of any society.

The dialectical logic (thesis, antithesis, synthesis) is the obvious pattern of the valuative contents and skills. These four kinds of dialectical value orientations and their related kinds of skills characterize the sequential or logical development of the valuative process, step-by-step. For example, you cannot care until you value or significate the subject; and you cannot transcend until you care; and you cannot balance or do justice until you transcend; and you cannot execute, control, automate, or stop automating until

you balance. Furthermore, each value orientation characterizes a dominant trend in a stage of individual development. Plunge competencies, love, care, and attachment values generally characterize the child value development (age 1-12). Transcendence, autonomy, detachment, and independence generally characterize the adolescent

FIGURE 17

Value Content Syndromes and Their
Related Valuative Competencies

	Object Valuation	Values Valuation	Self Valuation	Related skills and competen- cies
care, love attachment	XXX	XXX	XXX	plunge, dip, involvement
freedom, autonomy, independence, detachment	XXX	XXX	XXX	transcendence
justice, compromise fairness, inter- dependence	XXX	XXX	XXX	balancing
achievement, efficacy, efficiency, self- actualization, originality, creativity	XXX	XXX	XXX	control, exe- cution, auto- mation, stop- automation

development. Balancing, compromise and justice characterize more the early adulthood development. Automation, self-actualization, achievement, and efficacy characterize more the development of the full mature adult. Automating skills may be more strong and dominant in the late adulthood than balancing skills.

Furthermore, these valuative orientations reflect and project themselves convincingly on the other four dimensions on the psycho-system and produce a whole cognitive, affective, arousal, and active syndrome for each value orientation, and generate different kinds of interrelated subroutines, programs, and feedback loops. The "plunge" orientation is characterized more by reflective and inductive cognitive processing, by love and care affections, and by their related arousals, patterns, and algorithms for action. The transcendence orientation is characterized more by abstraction and analytic cognitive processing, by freedom independence, firmness, and detachment feelings and related arousals and behaviors. The balancing syndrome is characterized more by deductive cognitions, by justice and fairness feelings, and related arousals and behaviors. The automation, e.g., of successful strategies and the overall system performance, is characterized more by feelings of

achievement, self-actualizing and efficacy, and by activation of crystallized cognitive abilities (see Figure 16) (Sternberg, 1985).

FIGURE 18

Value Orientations and Syndromes

	Cognition	Affection	Arousal	Execution
Plunge	Reflection Induction	Love, Care	XXX	XXX
Transcendence	Abstraction Analytic Thinking	Freedom, Autonomy Independence	XXX	XXX
Balancing Deduction	Deduction Synthetic Thinking	Justice - Equality	XXX	XXX
Automation Stop-Automate Execute	Crystallized Abilities - Intuition	Achievement Efficacy Self-Actualization Creativity	XXX	XXX

These four kinds of dialectical value syndromes (DVS) generate more specific values and subroutines which are related to the individual, or the social unit's survival and growth, and are focused more on the specific tasks or situations which are encountered. Each specific value within each cluster which accumulated around every DVS would be

specifically defined by its specific subject of valuation (object-value-self) and by the mode of value processing it activates. Moreover, the balance between these four DVS's defines the general style of valuation contents for the individual or the social unit.

The third limitation or extension of the proposed model is that it ignores, so far, the place of religious and supernatural belief systems as an important part of value dynamics and contents. Religious and supernatural belief systems are part of social values sub-package. They are devised by society, or revealed by God, to deal with the ultimate risky, uncertain, unpredictable, fluctuating, or unknown universe, or with ultimate universal, wide swaying, fluctuating natural events which endanger the absolute survivability of the group or the human race. They stabilize the resulting high rise and wide swaying mood fluctuations. Belief systems serve, at this level, as mood management mechanisms and as adaptive strategies as they prepare the individual for such probable events. The range of environmental uncertainty for such probable universal events, and the degree of their significance to social or individual survival and growth, define and rationalize any belief system. Any belief system is valid as far as it adequately performs such mood stabilization for such events. The best

belief system is the most effective in stabilizing mood states related to such universal environmental fluctuations.

Valuating and assessing belief systems for the individual and society is part of the social values valuation continuous processes and the source of individual religious conversions, social religious revolutions, and such social movements which are well recorded in history. Relatively decreasing uncertainty and increasing control over our environments, due either to our growing valuative competencies or to our increasing knowledge of the natural and social laws and their scientific technological applications, forced these continuous valuations and these different modifications of these belief systems across history (Toynbee, 1966).

While religion is mostly a supernatural belief system which includes a global strategy to deal with the ultimate universal expectedness and unexpectedness, e.g., death, birth, and planetary catastrophes, ideologies, on the other hand, are natural belief systems which constitute different global strategies to deal with the expected and the unexpected in specific environments. However, these two kinds of belief systems, sometimes, are combined in one package.

The fourth limitation is that the model is too general and covers too much territory. This model is, after

all, a raw or a prototype model, which needs to be refined through sub-modeling and conducting an extensive research. Expanding the model and building sub-models for every behavioral domain needs a full range of intensive research using the four suggested measurement approaches. The first two approaches for value measurement help more for testing, developing, and refining or refuting the pure theoretical and scientific assumptions of the model. The main objective, at this level, is to discover the valuating skills and maturities, the value structures and packages, and the controlling feedback mechanisms by using factorial, regressional, and causal studies and task analysis. The third and fourth approaches of value measurement help more in checking the practicality, the usefulness, and the workability of the model. The contextual analysis approach needs to check and discover the main operating mechanisms and their different contents in every domain.

Any model should pass tests for both its validity and workability. This model is assumed to be applicable and workable in almost every domain where human behavior is involved. In education, for example, it stresses that value training, which is a mostly underrated procedure, may be one of the most important aspects of any educational process. This should be done, not only by socializing students and

initiating them on the basic values of their society and culture, or by clarifying their values, but most important by devising techniques to develop and sharpen their valuative skills (plunge, transcendence, balance), their sense of personal survival and growth, which is the source of their personal values, their identification with their society and culture, with their positive social groups, and with their organizations, corporations, and institutions, which are the sources of their social values, and their ability to expect and accept the unexpectedness, to deal creatively with their environments and their life span fluctuations. Viewing the education process itself as a valuating process may help in improving significantly its performance (Hersh, Miller & Fielding, 1980; Simon, Howe & Kirschenbaum, 1978).

In organizational domains, value selection (selection based on the needed valuative skills and the required values for the job) and value training along the same lines, may prove to be the most important procedures for insuring organizational survival and growth. Value selection and training do not replace the existing methods of job skills selection and training, but rather add this long underrated dimension and improve significantly organizational performance. Viewing the organizational process itself as a valuative adaptive process (corporate cultural mechanisms)

may help significantly in program evaluation, in organization development, and in understanding organization dynamics.

Working out the value dynamics of specific sub-models for every domain and conducting multiple lines of research on it would help to prove, to test-operate, to adjust, to refine, or to refute the workability and the generality of this proposed raw model. This model, if proved to be valid, may tune our general scientific frame of reference for values and their dynamics.

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