# Model for Childcare Based on the Concept of the Child as an Open System

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***Abstract*** :
The care of children is a growing concern in the world today because of the societal changes that are occurring. Families are having fewer children, in some countries only one child, so there is interest in providing the best care for the child. Societies are changing, often both parents are working outside the home and many elderly are working. The decrease in the extended family means more children are in need of childcare services. Developmental research was used in the study to investigate the trends in social values and attitudes toward children through the years, and to develop a conceptual model for the care of children based on known developmental needs of children and changing societal needs and values. A semantic differential scale was developed and used with over 4000 parents, staff, academicians, and administrators to determine attitudes related to childcare, staff, and psychological milieu of childcare centers. Childcare centers and individuals in various countries participated in the study. General Systems Theory was used for the conceptual framework for the study with the characteristic of equifinality the leading element for the model of childcare. Semantic differential scales reflected attitudes consistent with those reflecting a changing society. The trend in attitudes are reflective of values that indicate a society in transition. Society confronts the challenge of ecology, information explosion, genetic advances, changing health profiles and a new paradigm. The changes in society demand value changes in caring for children to be prepared for the future. Flexibility and problem solving will be imperative in the future with the rapidity of changes now occurring in the environment, space, technology and health.

***Key words*** : childcare, general systems theory, attitude development and measurement

## Introduction

A ruling principle from the field of economic states that the value of a commodity tends to rise as the supply diminishes. Viewing children for the moment as a "commodity", it should follow by analogy that in countries where families are having fewer children, those children should be increasing in value both to the families and to the society in which they will grow.

In the 1970 Report to the President, it states that America's families, and their children, are in trouble, trouble so deep and pervasive as to threaten the future of or nation[1]. The source of trouble is nothing less than a national neglect of children and those primarily engaged in their care. Since that time the violence to children and by children has increased, health care of children has become neglected, day care programs for children are costly, single parent families have increased and the care of children has not improved greatly. Hilary Clinton[2] wrote a book on the requirement of a village not a family to raise a child. This phenomenon is repeated today not only in America but also in many countries of the world.

In Afghanistan children have known war for over 20 years[3]. Many children in countries like Cambodia, Vietnam, and the Balkans suffer from amputations from landmines made to attract children to either maime or kill them. In industrialized wealthy countries children suffer from preventable dental disease that will affect their health throughout life.

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Countries around the world have increased the life expectancy of fragile newborns with intensive care units. However, services needed for these children after surviving a premature birth are lacking in most parts of the world.

Child abuse occurs worldwide in all forms: physical, psychological, and sexual leaving scars visible and invisible. The invisible scars often cause many illnesses later in life. Child pornography is one of the worst forms of child abuse and only in 2000 was a law passed in Japan banning child pornography in the last of the industrialized countries to enact legislation no doubt related to the fact it is the greatest consumer[4]. Economic situations in many countries requires both parents to work or in some socialized countries such as China and the former Soviet Union and related countries both adults are expected to work and children are placed in day care centers subsidized by the government and work unit. In other countries the cost of day care is often expensive and the conditions not always ideal for children. In the United States 51% of the children under 6 years of age are in single parent families and another 11% with fathers all live under the poverty line. Childcare is expensive and periodically incidence of abuse in childcare settings is reported[5].

Historically, day care centers have served as a barometer of social and economic stability in the US since prior to the Civil War. The demands for and support of child care services have fluctuated with the economic status of the country and with how exploitive the roles of women were viewed. The best interests of the children have not necessarily played a decisive part in the outcomes. The primary purpose of day care is to meet the developmental needs of young children that foster the development that helps not only the child, but the family and society.

Childcare centers have varied in the nature of care provided for children and the services offered. Early day care centers offered more comprehensive programs for children than the custodial care offered by many centers in the world today. This trend to less rather than more comprehensive child care services is something of a paradox, not only from the standpoint of the supposedly increasing value of children (due to the growing scarcity) but also from the standpoint of research findings.

In many countries governments provide funds for day care centers, but not enough to supply adequate or well educated staff for the developmental needs of the children. Research in the field of early childhood education has exploded since the middle of the last century. Research has focused on the cognitive, social, and physical aspects the child's growth, not only after delivery but also before[6]. White and Watts[7]reported the continuing need for research concerning child-rearing practices of families with children under three years of age. This call for research is based on White's[7] identification of the time between six months and 18 months of age as a very critical period on the development of the intellectual, physical, and social spheres of the child.

In the late 60's and early 70's research focused heavily on the developmental periods from conception through early infancy[7,8,9]. In addition there have been studies based on naturalistic observations of children and parental interactions, and other studies that monitored carefully the physical and mental growth of children. A number of validated assessment tools such as the Gesell schedule[10]; Bayley Infant Scale[11]; Brazelton Infant Assessment Scale[12]; Denver Developmental Assessment [13] have been used to assess physical, affective, social, and cognitive growth of children. Early studies done by Piaget[14] and his followers have stimulated the analysis of cognitive as well as of the sensori-motor development of children.

Studies in recent years support the benefits children gain from day care experiences[15]. Changes in societies have increased the use of day care centers worldwide. In many societies the extended family took care of young children if both parents worked. However, worldwide there is more mobility of young families seeking better economic opportunities, the transition from agricultural communities to cities has changed living styles and great distances between elderly relatives who may provide

child care. In many societies, people are working longer and because of the increase in service industries, the demand for workers has increased. Many senior citizens are continuing to work in some of these service areas and enjoy continuing to be productive in their community and the social opportunities.

Philosophies related to childcare are changing with societal changes. Children in many societies as seen to be the designers and executors of the policies of the future[16]. Many views exist about what kind of childhood has the most salutary influence on later living styles and decision-making powers. Studies recently conducted related to the impact of violence observed or experienced in childhood affects adult behaviors[17].

Childhood is essentially a European invention of the past four hundred years[18]. Children in the past were not thought to be worth acknowledging until they were capable of assisting in family productivity and maintenance by participating in work activities. Disease and death consumed great numbers of children prior to the age when they were capable of helping to insure the family's survival instead of draining family resources. Denial of this fragile segment of the population was the most comfortable way to deal with the devastation and grief, which attended the inevitable loss of some of its members. Formation of attachment to the infants would make their repeated loss overwhelming; therefore, various mental coping mechanisms were used. Children under two years were not enumerated in the census, since their survival was questionable. This remains true today in visiting poor developing or evolving countries. The introduction of immunizations has changed this profile in many countries. However, in some countries there is also a fee to register children when there is a fee that many poor families do not have and since they have experienced such high death rates, they do not register their children.

deMause[19] describes the evaluation of childhood as proceeding through six modes : infanticide, abandonment, ambivalent, intrusive, socialization, and helping reflected in Figure 1. The underlying philosophy of each mode as it evolved reflects societal impact. Each of these modes still exits today, for however a society values children, that evaluation is reflected in their care and treatment.

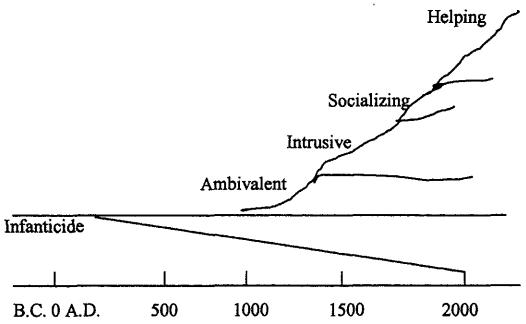


Figure 1 : The Evolution of Child Rearing Modes [19]

Often there is a dichotomy in the stated philosophy and in the actual attitudes and practices of a society: e.g., in the United States people overtly espouse the belief that "our future lies in our children " but practices related to children express a philosophy that children are a liability and not an asset. They are not productive, nor are they voting constituencies; therefore, an expensive and irrelevant commodity.

The evolution of the specific mode of childcare called "day care" has had no continuous chronology, but has vacillated as a social institution for years. Societal needs and pressures particularly affect the quality of day care. Philosophies of day care center have run the gamut from mere maintenance to enrichment. Often the philosophy and the care administered in particular day care centers reflect a fragmented view of the child. Day care centers have been administered by as diverse agencies as social service, health departments, work places, private corporations and more recently educational facilities.

Children are viewed in these centers, depending on the prevailing philosophy as income generators, wards of the state, potential health hazards, or as children with unique developmental needs. Recently the child has been perceived as a complex of interactions with multiple facets of developmental needs[20]. Studies emanating from Harvard University are encouraging a shift in the focus of child care

to incorporate these complex facets, rather than preserving the unilateral approach typical of the past[7,815].

The purpose of this study is to propose a conceptual model for child care developed using the philosophy of general systems theory, a search of literature related to day care centers, research related to the multi-facets of the development of children and information received using semantic differential scales with academicians, administrators, staff and parents in a variety of centers and cultural groups.

Research questions for this study are as follows:

1. What characteristics of open systems play a leading role in the development of a day care center based on the concept of the child as an open system?
2. What societal trends and attitudes are identifiable as influencing the care of children?
3. What are the major developmental theories and how have they influenced the services and care provided for children?
4. Do the attitudes obtained by the use of the semantic differential scale related to day care, staff, and psychological milieu reflect the anticipation of future needs of the child, as these needs are identified in the current literature?

**Review of Literature**

Literature reviewed for this study included general systems theory, descriptions of the art of model building, a historical review of attitudes and values related to children, developmental needs of children and the future needs of society; a historical review of the development of day care centers.

General Systems Theory views a child as an open system, a complex system with many subsystems at the same time a subsystem to many other systems in the universe. Children are not generally cognizant of the effects on them of the interactions of micro or macro systems, subsystems or supra systems nor the effect they have on other systems. Whitehead[21] warned that in the 20's that the intellectual capital of science was running out and would continue to dissipate so long as it remained exclusively mechanistic in its approach. General Systems Theory as presented by von Bertalanffy[22], Rapport[23], Ashby[24] is radically different from most other theories of mechanisms. It represents a continuing evolving body of ideas, increasingly and universally useful to vast numbers of people representing many diverse scientific endeavors.

Major trends of General Systems Theory are self regulation dependent on chains of circular causality; organismic which relies on principles and laws relative to organization, wholeness, order of arts and processes, growth, multivariate interactions, which indicate the existence of isomorphic relationships among phenomena common to biological, behavioral, psychological and social systems. Weiner's[25] work in cybernetics facilitated the concepts related to the complexities of communication between interacting parts of systems and controls.

Information theory introduced the concept of information as a measurable quantity by an expression isomorphic to negative entropy (negentropy) in physics. Two major emphasis: mathematical theory and theory related to behavior and meaning arose. Control of entropy allows systems to grow to higher levels of development.

Model building is a creative act. Brodbeck[26] states a model may be constructed when the laws of one theory have the same form as the laws of another theory. A model is an abstraction representing the perceived relationships of a system as interpreted by the model builder. Morris[27] describes as intuition the process by which an individual arrives at a model of the phenomena being studied. Three basic hypothesis that have evolved from Morris' exploration of the process of model building are : the process of model development may be usefully viewed as process of enrichment or elaboration, analogy or association with previously well developed logical structures plays an important role in the determination of the starting point of this process of elaboration or enrichment, the process of elaboration or enrichment involves at least two sorts of looping or alteration procedures.

Harre[28] states the process of model building is to develop a set of hypotheses for testing, evaluation and modification. To assist in the process of construction or reconstruction of models, Morris[27] suggests seven steps: factor the system problem in to simpler problems; establish a clear statement of the deductive objectives; seek analogies; consider a specific numerical instance of the problem; establish some symbols; write down the obvious; if a tractable model is obtained, enrich it, otherwise simplify.

Kuhn's discussion of scientific models in *The Structure of Scientific Revolutions*[29] presents the need for new paradigms, which may be tested out through systematic research. The growth of knowledge, according to Kuhn, is dependent upon continual experimentation. Only through replicable research will knowledge be expanded and old ideas validated or negated.

Salk[30] suggests models are useful in a variety of circumstances. He describes models as being effective in depicting a set of relationships in conflict or in harmony. Models aid in understanding the basis for agreement and disagreement, constructiveness and destructiveness, health and pathology of situations through a symbolic representation of the real situation.

Models are classified by Buckley[31] according to levels of organization: an equilibrium model applies to systems which is moving to an equilibrium point, lose organization and ten to hold that minimum level of organization within relatively narrow conditions of disturbance. Homeostatic models apply to systems tending to maintain a relatively high level of organization against ever-present tendencies to reduce it. The process or complex adaptive system model applies to systems characterized by elaboration or evolution of organization, thriving on disturbances or variety in the environment. Based on this classification the conceptual model for care for children visualizing the child as an open system will be characterized as a process model, or model of a complex adaptive systems. Figure 2 portrays these three types of models as described by Buckley.

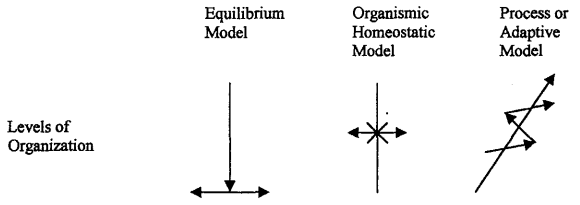


Figure 2 : Systems Models According to Levels of Organization [31]

If the child is indeed a complex, adaptive system, there is a need to identify critical influences and combination of factors which aid or repress the child's adaptations and which enhance or inhibit normal evolution toward personal integration and greater complexity. It is necessary to develop a more comprehensive idea of what is means to call a child a system and to explore the child's relationships to other systems encounter as the child lives and grows.

The child certainly like all humans is an open system. One of the characteristics of general systems theory particularly related to children and their development is the principal of equifinality. Von Bertanlanffy[32] identified equifinality as a goal-oriented principle by which a system is enabled to reach the same final state from differing initial conditions and by way of any one of a variety of paths. Both biological and psychological instances of equifinality can be cited. Normal premature infants and infants of normal gestation enter life at different gestational and developmental ages but may soon be equal developmentally. On the other hand, because of the natural and psychological variations in individuals, one child may need a very structured approach to develop certain skills while another child may need a less controlled environment to attain the same skills. Children come from a variety of different genetic as well as cultural, socioeconomic, racial, ethnic, religious, and other backgrounds. However, most children tend to achieve certain neurological and muscular controls at about the same chronological age. Dressing, shoe lace tying, coloring, and play activities observed in a group of children will demonstrate that a task may be achieved with a number of individual varia-

tions. Some children will learn to read on their own while others need an extremely skilled teacher to assist them to grasp the skills necessary for reading (Anselmo, 1976). Children find out about their own bodily functions in a number of ways, discovering rapidly their abilities and capabilities, and their unique limitations. But despite individual differences, each child is equifinally a child, developing in much the same way as other children.

A child, like any other open system cannot exist in a vacuum. Inputs must constantly be made available to the child, and the child must continually process these in puts in order to maintain his system in good health. An open system functions best with certain regulatory mechanisms. Autonomic nervous control of basic physiological mechanisms is a regulatory event of great consequence. Psychological controls of the child are often influenced strongly by society, family and cultures, and are a means primarily of regulating social behaviors.

Gardner[20] depicts the child as an open system, as seen in Figure 3. Gardner's model of the child is a close replication of the model of perceptual systems by Broadbent[34] depicts in Figure 4. Both of these models illustrate the transactional characteristics of open systems, which have just been presented. The environment in which the child lives directly affects the input or intake into the child's system. The manner the child conveys outputs as illustrated in the models have an effect on the incoming inputs, so that the cyclical character of events that take place during the development of the child is evident. Both these models are generalizable to nearly every stimulus situation that influences the child actively, passively, internally, externally, in interaction within themselves or with their environment.

Pearis and Pearis[35] describe the characteristics of authoritarian parents. They tend to have less warmth, use stricter disciplinary measures, and are often inconsistent in their harshness. Authoritarian parents tend to place high value of orderliness and structure, to like smooth functioning, and rarely consult their children about family affairs. Children of authoritarian parents tend to be submissive to people with greater status than their own. Children

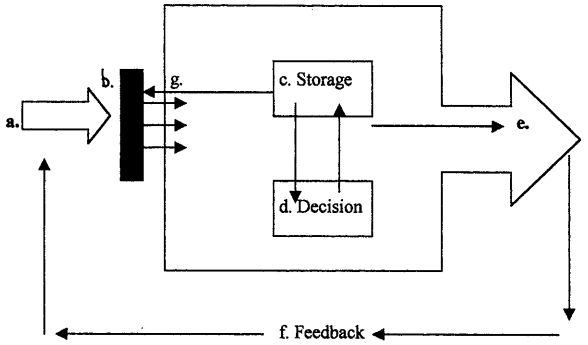


Figure 3 : The Child as an Open System (Gardner) a. Intake b. Selective filter system c. Storage or memory d. Decision or executive function e. Output f. Sensory feedback g. filter revision process

of authoritarian parents tend to be quite moralistic, are often in discord with one another, and live in a general atmosphere of tension. These children tend to be over-dependent, socially withdrawn, non-competitive or excessively competitive, neurotic, sensitive, obedient, rigid, low in creativity or originality, and resentful of authority.

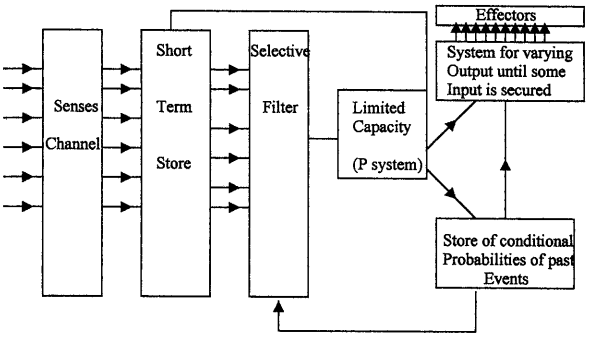


Figure 4 : Schematic Representation of the Perceptual System[34]

Young parents who have been reared by authoritarian parents, are frequently insistent that their own children will be reared differently. They may insist on no structure of any kind because of their perception that a child needs to be free. Inconsistencies and lack of structure may be just as rigid a child rearing style as that of their parents' insistence on maintaining definite structure. Though rigid structure is destructive, no structure also tends to promote chaos and excessive entropy in the child. Like any other system, a child needs controls to prevent rupture due to system overload.

In contrast, Pearis and Pearis[35] describe demo-

cratic parents as being respectful, sympathetic, openly affectionate and nurturing, accepting of slow growth of impulse control, and as establishing well defined limits of rules of conduct. They have reasonable aspirations, are free in their verbal communication about sex, and rank high in emotional adjustment and self-esteem. In addition, they maintain a clam, happy approach that results in a generally well adjusted home life, and they encourage youthful decision-making. Children reared by democratic parents are curious, expressive, self-reliant, self-confident, cooperative, friendly, happy and sociable. They are often accelerated in schoolwork, demonstrate high leadership ability, are not usually prejudiced and are democratic in their relationships with other individuals. These characteristics are consistent with definitions of openness in human systems. An open system is highly differentiated; has healthy control mechanisms and provides a milieu in which inputs from a variety of environmental stimuli can be transformed into energy and productively emitted output to the society.

The curve represented in deMause[19] reflection of the major attitudes toward children and the approximate time of each new wave reflects the population growth charts of both humans and fruit flies. In a similar graph, Salk[30] presents a sigmoid curve (Figure 5) to illustrate or model the historical changes in values which society has held regarding development of the child. Attitudes seem to have increased as population has changed in its focus for the survival of the fittest to the improved quality of life.

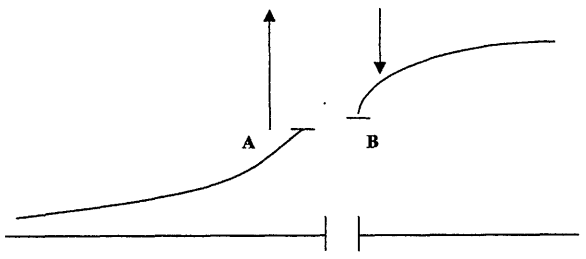


Figure 5 : Salk's[30] Sigmoid Curve Exaggerated Depicting the Inversion of the Values of Epoch A and Epoch B

A survey of societal attitudes toward children exists today as represented in deMause's diagram (Figure 1). Female infanticide is still practiced today. Child abuse that ends in the death of a child is another example of infanticide. Separate dining times for children and their parents, is seen in many parts of the world. The order in which family members eat resulting in malnutrition for children displays a societal attitude toward children and sexual preference when the young boys eat before the young girls. In some societies there is not a special word in their language for child, male or female, again reflecting that a child is no different than an adult. Hospitals in many countries place children with adult patients, groups individuals with like disorders together regardless of age and sometimes regardless of sex. In some cultures the child' s name is modified to call attention to the fact that the child is a child with a prefix or suffix used for all individuals under a certain age.

Plato asserted that knowing childhood is the key to understanding later life. Art has been a source of insights for historical perspectives of children through the ages and various cultures. Art depicts how society sees children by what they wear, what types of activities are portrayed, etc. As children aged, chores were passed on to them as they physical maturation provided them with the necessary coordination and strength. Cultural ceremonies and rituals exist in many countries to signify the transformation from childhood to adult. Many of these rituals are painful but tolerated as a sign of manhood.

Salk[36] discusses the progress of man through biological evolution. Toffler[37] and Farson[38] projected grim analysis of scientific realities facing man, transient populations, the demise of the nuclear family; the non-existence of the extended family; ecological problems such as under supply of natural resources, overpopulation, oversupply of trash and the like which have all come to be everyday realities in 2001.

Shifting his concerns from cellular biology to broader concerns for the health of the person, Salk[36] suggests a basic model which has unifying potential for the relationships that exist between man and the physical universe and between man and

the sciences, arts, and humanities. The struggle for survival was uppermost in previous centuries, and the attitudes of society toward child still strongly reflect the survival of the fittest philosophy which has long controlled the lives of man. Salk[30] in *The Survival of the Wisest* presents a view of life dedicated to improving its quality, based upon a concern for the individual and the species. Nature is an open system, having two leading characteristics of open systems. The first is the development of increasing complex forms and systems that are then selected for continued survival and/or evolution as experience proves their value. The second characteristic is related to man's search for satisfaction and for the improvement and maintenance of the quality of life. Man's sense of aesthetics has assisted him to overcome one of the most persistent adversaries, disease. Man's drive for survival has shifted now to the prevention of auto-destruction---a fight against man's tendency to destroy himself and his universe.

Man has been able to develop lethal devices that could lead to total destruction of both humans and nature, as nature attempts to compensate for the assaults on the ozone layer by automobile exhaust and other forms of chemical air pollution. Just as nature adapts to environmental changes, so must man. Man has attained the potential for lethal excesses that may eventually cause the extinction of man, but man can, on the other hand, adapt in other directions. Cultural evolutionary process has reduced external restraints upon individual expression and increased opportunities for choice, and now man is challenged to resolve the conflict between self-expression and self restraint. Without control of this conflict, a pathological greed may win out at the expense of constructive and creative individuals. Salk[30] also advocates a way of perceiving, by means of the sigmoid curve the process through which man has progressed and is progressing.

Value systems change more quickly than genetic programming. Study of man demonstrates changes in genetic programming based upon biological evolutionary factors. But change in value systems is also evolutionary and changes in current values demonstrate the effects of technological changes in the environment. Man is faced with the challenge of coping with the opportunities and dangers that will be present resulting from the inversion implied by the Salk sigmoid curse. The change in values from Epoch A, the rise of the curve, which were required for survival and previous quality of life may become of negative value in Epoch B, the segment of deceleration on the sigmoid curve. Inversely, values of B that had existed earlier would have been of negative value in the A epoch. Value systems of the past will be replaced by new values by necessity and new concepts will arise to describe the relations of man to man, man to nature, and man to himself.

Man's dualistic system of inborn and learned responses will influence the details of the processes involved. The complexity of biological and cultural factors, leading to the multiplication of processes, will provide the raw materials for further growth, development, and evolution of individuals and societies to an optimal level in a dynamic equilibrium. The maintenance of this equilibrium will also be influenced by changing environmental factors.

Differences in value systems of two generations commonly exist, with the extremes of each generation in open conflict over opinions of critical importance to them. So it may before those in transition from Epoch A to Epoch B. The new epoch extremists will reject those values that they perceive to be part of the past or of Epoch A, and will reject them in such a fashion as to deny their origin. In the occurrence of any change process, there are persons holding values at both extremes, pro and con, the persons in the middle of the road position generally balance attitudes toward the mean, thought the men itself is slowly evolving upward. Values which tend to survive are those which fit best or that have best adapted to the new environment, and the progression of evolutionary changes is normally toward increased complexity, exactly as in biological evolution.

Man needs only to look at the extinction of certain species and the natural reasons why these species did not survive, in order to come to the realization that, by his own nature, man may invite

his own extinction. Nature extinguishes, through its game of biological mutation and selection, while man seems to be playing his own game of natural selection by way of choosing ideas and cultural innovations. That man does not always choose efficiently is seen in the problems man has created for himself with modern technologies. Man has, through his own choice of evolutionary process, increased mental illness, setting man against himself and against his species. The increased leisure time which is the result of mechanization and distribution of convenience devices is not balanced with an evolutionary plan for how people might use their leisure time. The decline of the extended family has not been compensated for by the generation of psychological support replacements for persons isolated by frequent business transfers and other moves. Toeffler's[37] disposable society denies its members attachments or object permanence, and prevents man even from taking care to dispose of his own wastes, with resulting pollution and extinction of natural resources. The social and biological worlds are clearly in critical relationship to each other in today's world.

Salk[30] like Freud[39] discuss the Being and Ego (Freud's instinct is Salk's being). Salk[30] asserts that one's being is expressed through the course of life experiences which directly influence the development. A prerequisites to full self-development as well as to full self-expression with restrain is a consciousness of one's own Being. Salk[30] believes self-discipline means expression with restraint.

Salk[30] asserts that biological analogy is significant: Being is analogous to the genetic code and Ego is analogous to the somatic system in its medication relations to genetic endowment. Ego, by which Salk[30] means the enduring and conscious element that knows experience, reacts to the outside world and thus mediates between Being an d the social and physical environment. Expansion of the analogy implies interdependence between Being and Ego, like the interdependence which exist between the genetic system (which programs the possibilities of the somatic systems) and somatic systems (which supplies the structures and mechanisms necessary for the organism's expression). Being contains the program and Ego affords the means of expressions. As somatic structures provide the ways through which genetic structure is expressed and related to other parts of the organism and to internal and external environments, by analogy the Ego provides the access routes for Being, communicating with it, with others, and with the environment by many different modalities[30].

Throughout the world a whole new set of relationships and values requiring the development of new rules which are more appropriate to changing circumstances, and which bear witness to the continued growth and development of human life. Salk[30] attributes the current situation to a dynamically changing relationship between Being and Ego. Salk[30] discusses the evolution of metabiology to provide the reader with an understanding of the perceived biological relationship that exists between order and creation, both of which strongly affect values and evolutionary changes. Salk maintains that early in life a multiplicity of patterns of behavior-structure are possible. Each pattern is of different quality and intensity. As a child grows, however, only those possibilities that were introduced and exercised will evolve and surface while the other patterns diminish and become extinct. Salk states that order, if dynamic, implies evolution of structure, function, relationship, and creation. Creation implies the existence of order, evolution, structure, function and relationship. Figure 6 portrays these concepts and their relationships.

Though Salk's[30] theoretical analysis is abstract, it has direct relevance for a changing philosophy of childcare. Diamond and McMurray[40], for example have stated the need for developing a more comprehensive plan for children that is not based solely on cognitive development. The soundness of this projection is evident today as previously countries with no obesity in children have serious problems, chronic illness because of the push within those countries for study eliminating physical exercise.

Childcare requires focus on the total development

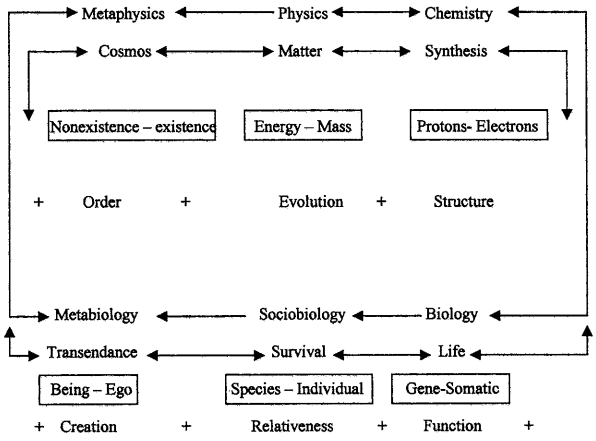


Figure 6 : Salk's Diagram Demonstrating Relationships between Analogies, Requirements for Order and Creation[30]

of the child. The application of a systems approach to planning, based on a comprehensive view of the interactions of biological, socio-psychological psycho-dynamic phenomena such as the one presented by Salk[30]. Societal evolutionary changes are reflected in the changing significance or rites of passage that reflect cultural, societal, or social attitudes about the transition from childhood to adulthood. Although the ceremonies persist, often individuals cannot discuss nor know the meaning or significance behind the ritual.

The concepts Salk[30] perceives as interdependent, one essentially meaningless with out the other are presented in Figure 7. An expansion of the list with similar pairs is possible. In another list (Figure 8), Salk[30] presents a possible basis for disagreement and disorder in the metabiological realm, indicating a need for reconciliation by an "and" rather than an "or" attitude presents the possible basis for disagreement.

| | |
|---|---|
| Being | Becoming |
| Absolute | Relative |
| Parts | Whole |
| Extremes | Balance |
| Quantity | Quality |
| Present | Future |

Figure 7 : Opposed Complementaries [30]

| | | |
|---|---|---|
| Biological | Somatic | Genetic |
| | Individual | Species |
| Metabiological | Ego | Being |
| | Intellect | Intuition |
| | Reason | Feeling |
| | Objective | Subjective |
| | Morality | Reality |
| | Differences | Differentiation |
| | Competition | Corporation |
| | Power | Influence |
| | Win-Lose | Double- Win |

Figure 8 : Possible Basis for Disagreement and Disorder in Metabiological Realm, Indicting a Need for Reconciliation by an "and" rather than an "or"[30])

Salk portrays the changing trends and values, with reconciliation of the complementary patterns that are not converging and intertwining in mutually reinforcing ways (Figure 9). Man has the ability to choose either to change or not to change direction and cooperate with the process. There will be men who will elect to follow the values of Epoch A and a few will survive, while others will succumb to their own self-destruction. Man needs new goals to achieve. Man must also understand change processes and develop an awareness of this social and individual responsibility to promote cooperation, coalescence, and cohesion. The power of association may be released through a state of awareness of the necessity to remove or neutralize disassociative processes.

| Epoch A | Epoch B |
|---|---|
| Anti-Death | Pro-Life |
| Anti-Disease | Pro-Health |
| Death Control | Birth Control |
| Self-Repression | Self Expression |
| External Restraint | Self-Restraint |

Figure 9 : Changing Trends and Values of Epoch A and Epoch B[30]

In the future man has to work cooperatively with

nature instead of tying to overcome nature as man has found it necessary to do in the past. Man's relationship to self, others, and the universe must move toward an increasingly complex unification and coalescence of health, contributing, constructive elements, if man is to solve the problems of the existence of man. Examples of man defying his own nature are present in the demise of the nuclear family, in the mobility and social and geographical isolation which have contributed to the demise of the extended family, and in the rising incidence of mental health problems. Statistically, mental illness, alcoholism and drug addition have reached epidemic proportions in the world. Brook and Tseng [41], Cooksey, et al,[17] and others have studied the impact of alcohol and drug dependency and the impact on preschool children in longitudinal studies and relate problems in adulthood to such expose as toddlers and preschoolers.

The reliance upon the values of Epoch A are illustrated in the many public health funded programs which are anti-disease rather than pro-health; however, Gates Foundation and World Health Organization and others are funding major campaigns for immunizations worldwide which are pro-health as well as anti-disease. United Nations International Children's Emergency Fund (UNICEF) released that more than 10 million children under five die each year from preventable disease, one in every ten is disabled. More than 2 million died in the 1990's as a result of armed conflict, and another 6 million were seriously injured or disabled[42]. Man is moving on toward self-destruction.

Child rearing responds to societal events. In the 1930's there had been much death and disease preceding so the focus at the time was on pleasure. In the late '40's children were encouraged to be honest and to ask questions which was thought to be a major factor in the student riots of the 1960's in the United States (LeShan, 1971). Childcare has an impact on later development particularly in the early years. Children need time for fantasy play to help them solve problems, a skill they will need later in life when faced with the new dilemmas in the changing society they will face.

The future will require not domination of or by others but rather the disciplined expression of one's being in reciprocal relationships. Foundational to the development of a model for childcare are the values of the new and old epochs working together with shifting emphasis to prepare the young for the complex society and their own existence. Ecology is a major concern throughout the world and the principles and concepts are foundational in caring for the young.

## Methodology

A developmental research design is the basis of this study. Borg[44] states that the purpose of developmental research is to study the evolution of trends and to determine predictive needs. The purpose of this study is to investigate the trends in social values and attitudes toward children through the years, and to develop a conceptual model for the care of children based on known developmental needs of children and changing societal needs and values. General Systems Theory is used as a conceptual framework. The characteristics of open systems are fundamental to the construction of the model. Variables studied are the developmental needs of and theories about children between the ages of birth and six years, societal changes in attitudes toward children through the years, and sources of prediction for the future. Types of programming, administration, curriculum, populations served, services offered, parent education, staffing patterns, and preparation of staff, are all factors which have been considered in the review of the literature on the evolution of day care centers. The question primarily addressed is what kind of conceptual model, taking into account the concept of the child as an open system, and based on research findings and changing societal values toward children, would be most appropriate for child care.

Developmental research provides a research method for studying trends, and is designed to analyze patterns of change in the past in order to predict future patterns or conditions[44]. Trend

studies by their nature are vulnerable to unpredictable factors that modify or invalidate predictions based on past evidence. Variables to be studied are chosen. The possibility of isolating the "wrong", i. e., least critical, variables is a hazard of any research design, and the developmental research reported in the paper is not immune from this risk.

The process of developmental research includes in the search of the literature a review of past research techniques, providing baseline data from existing information on the variables, which have been isolated for consideration. Instruments available and do a collecting techniques which can be utilized dare also specified in the literature and may be used in the course of new research.

Variables isolated to obtain baseline data for the theoretical framework of this study were from general systems theory, developmental needs and theories concerning children, the history of societal attitudes toward children, and the historical development of day care centers as expressed through function, program and administration. To assist in the formulation of the model, a semantic differential scale was developed to examine attitudes of parents, day care staff, administrators, and academicians toward the function, administration and program of current day care centers, characteristics of staff and desirable characteristics of the psychological milieu.

The semantic differential scale, used to obtain attitude measures, was selected as a means of testing the findings in the literature related to day care centers against pertinent data collected in the context of contemporary day care operations.

An attitude is usually though of as having three components: an affective component, which consists of the individual's feelings about the attitude object; a cognitive component, which is the individual's belief or knowledge about the attitude object; and a behavioral component, which is the individual's predisposition to act toward the object in a particular way.

As defined by McNemar[47], an attitude is a tendency to act or react in a certain manner. An attitude is real to its possessor; however, no one has ever seen an attitude. It is an abstraction, the existence of which is inferred either from nonverbal overt behavior, or from behavioral or symbolic behavior.

Attitudes have been measured by a variety of procedures. A Thurstone type of scale asks the individual to express agreement or disagreement with a series of statements about the attitude object. On the Likert type of scale, the individual checks one of five possible responses from strongly agree to strongly disagree. The Guttman approach to scaling is based on matrix algebra for selecting items for scales to measure any type of psychological trait. This technique is simple in application and leads to the elimination of terms which are not on the principal continuum, thus assuring that a single dimension is involved in retained items[47]. Interview schedules and open-ended questionnaires as well as the semantic differential are also used for attitude measurement.

Borg[44] states that attitudes are measured in educational research because of their possible predictive value. It is for this immediate reason that the semantic differential scale was developed for this study. The primary disadvantage of an attitude scale is that there is no assurance that the way the subject responds reflects the individual's true attitudes. Attitudes of an individual may at times be in conflict with the social norm and the subject may consciously try to prevent this revelation[44,47]. The aim of attitude measurement has been identified by McNemar[47] as distributing individuals or groups along a continuum from highly favorable to neutral to highly unfavorable, so that individual distortion does not critically weigh the outcomes.

Dimensions of attitudes have been identified by a number of studies as follows: attitudes are based upon evaluative concepts regarding characteristics of the referent object and give rise to motivated behavior[48,4945]. Attitudes are construed as varying in quality and intensity on a continuum from positive through neutral to negative[50,51,52]. Attitudes are learned, rather than being innate or a result of constitutional development and maturation[51,53]. Attitudes have specific social referents, or specific

classes thereof[52,53]. Attitudes possess varying degrees of inter-relatedness to one another[50,51]. Attitudes are relatively stable and enduring[52,53].

Shaw and Wright[54] present in their discussion of attitude scales methods of scale construction and ways to improve the measurement of attitudes. Improvement of technique of scale construction is the first step toward improving the attitude measures. During the preparation for the semantic differential scale, the criteria of Wang[46], cited below, were reviewed: an attitude statement must be debatable; all statements in a given issue should belong, as nearly as can be judged, to the same attitude variable; an attitude statement must not be susceptible to more than one interpretation; avoid " double-barreled" statements; an attitude statement should be short. It should rarely exceed fifteen words in length. Each attitude statement should be complete in denoting a definite attitude toward a specific issue. Each attitude should contain only one complete thought. Avoid grouping two or more complete sentences as one attitude statement. An attitude statement should be clear-cut and direct. Use with care and moderation such worlds as only, mere, just, merely, etc. Avoid colorless expressions or statements lacking effect. Whenever possible, write an attitude statement in the form of a simple rather than a complex or compound sentence. When a statement cannot be made in the form of a simple sentence, write it as a complex rather than a compound one. It is usually better to use the active rather than the passive voice. In general, use the term of the issue as the subject of a statement. Avoid high-sounding words, uncommon words, or expressions, technical terms not ordinarily understood, etc. The vocabulary of that group should be borne in mind. It is better to write statements I the simplest most precise language possible.

The semantic differential scale was developed with these criteria in mind, after an extensive review of the literature revealed several concepts concerning child care that were of interest to research.

Osgood[45] states that the selection of polar adjectives must reflect relevance to the concept. The relevance or irrelevance of the adjective pairs to the concept can be determined only by empirical testing. The selection of bipolar adjectives is based on the assumption of reciprocal antagonism. The semantic differential is designed to assess certain symbolic processes assumed to occur in people when signs are received or produced. In Osgood[45], the discussion of connotative and denotative meaning appears in greater detail than in previous works. The meaning of "meaning," as measured by the semantic differential scale, is limited to psychological relevance, according to Osgood[45]. Connotative and denotative meaning may be in both agreement or disagreement or one in agreement and the other in disagreement. The attitude scale is there fore not focusing on linguistic analysis but on psychological processes relevant to the prediction and interpretation of differential behaviors.

The research question addressed in the development of the semantic differential was: Do the attitudes of academicians administrators, staff and parents reflect the philosophical trends in current literature related to the developmental needs of children and society?

Scales may be developed with known factorial composition, or they may be developed with unknown factorial composition but with high relevance to a particular problem as expressed by a few known reference scales[45]. The latter approach was taken for this study. Osgood, Suchi and Tannenbaum[45] discuss the two major applications of the semantic differential technique as being: to measure objectively semantic properties of words and concepts in a tridimensional semantic space; and to measure attitude on a scale restricting its focus to the affective domain or evaluative domain. The latter was the focus of the scales developed for this study.

The three major elements of the semantic differential scale are the concept to be evaluated, polar adjective pairs, and a series of undefined scale positions. Pairs of polar adjectives are selected according to the purposes of the research being done. Osgood's[45] original study found three principal factors accounting for most of the semantic

loadings: evaluative, potency, and activity.

A three dimensional raw score data matrix is obtained when a group of subject rate a sample of concepts against a set of semantic scales. Each cell of the cube contains a number from 1-7, representing the judgment of a particular concept on a particular scale by a single subject. Statistical measurements may be done on these cells. In many operations means or averages are dealt with, as opposed to studying each individual score[45].

Following the criteria of Wang[46] and the premises of Osgood et al[45] twenty-two major concepts related to day care were selected. Attributes of these concepts were identified from the search of the literature. Reference books such as Roget's thesaurus, Instant Synonyms and Antonyms and others were used to aid in selecting polar adjectives that would reflect semantic loadings of evaluative, potency and activity features of the concepts chosen as attitude indicators.

In the attribute analysis of these concepts, several of the concepts were deleted because of redundancy or because of more effective placement with another concept. After this first process of elimination and rearrangement, eighteen major concepts from the literature remained for scale development, identified as attitudes toward: day care, financing, administration, program curricular activities, population, duration of the program per day ass well as the number of years utilized by a child, nutrition evaluation, staff, equipment, parent education, licensing, availability for research and for implementation of research findings, responsibilities of day care centers, health services, community involvement and social psychological factors. Four other concepts originally identified were incorporated under one of the stronger concepts.

Initially one hundred and ninety two polar adjectives were generated to elicit attitudes on these concepts. Many of the adjectives were taken from readings about day care centers and research studies that had been done in day care centers. The opposite attitude was present at times, while at other times it was difficult to find a word that was opposite in meaning without being obviously undesirable. The investigator and an expert in child development analyzed the lists of polar adjectives for each concept and made several additional revisions, deletions, and combinations. As a result of this shifting, the original eighteen concepts were reduced to eight.

A panel of experts was selected to evaluate the effectiveness and clarity of the scales as measuring instruments. The group analyzed the polar adjectives in terms of potency, activity and evaluative qualities and placed in random fashion on either side of the scale so that those adjectives considered evaluative-positive or evaluative-negative would not appear in one column only. The randomization of the items was to guarantee independence of judgements. Redundancy was intentionally incorporated in the design of the scales for this testing. To establish validity of the attitude scales several methods were considered: split-half reliabilities, test-retest, equivalent forms, or repetition of items. Split-half reliabilities were selected as the method of choice. A seven step scale was selected on the basis of several research studies done by Osgood et al[45] indicating that when the seven step scale is used, the subjects utilize all of the alternative with roughly equal frequencies.

The panel of experts all had expertise in child development with advanced degrees. In their responses the panel suggested reduction of the length of the scales. Additional suggestions were made concerning terminology, syntax, redundancy, ambiguities, and directions. Evaluation data strengthened the research design. Reliability, as defined by McNemar[47], is determined by the accuracy with which an individual's attitudes are measured, or by the dependability of a result. According to these criteria, internal reliability was demonstrated in each of the returned forms. The item consistency between the panel of experts was 0.9.

The scale revision based on the above analysis preceded pilot testing the instruments with a representative sample of the group to whom the scale was to be administered. Implementing panel suggestions, the eight concepts were combined and three major concepts evolved: psychological factors,

staff and day care. Since the intent of these scales was to elicit attitudes about day care, it was determined that these three inclusive concepts were intimately interrelated with other five concepts proposed for testing. Polar adjectives were adjusted on each of the scales based on the panel recommendations.

Pilot testing was done with students who represented academic disciplines most closely associated with childcare. Several of the students had experience as either day care staff or parents. The pilot groups demonstrated the variance of attitudes expected. Attitudes are strongly influenced by perception. Perception is a psycho-physiological complexity operating within each of us and influenced consciously or unconsciously by individual past experiences. Platt[55] states that perception has two faces, the subjective and the objective. The pilot group demonstrated the variance of attitude expected.

The scales were initially administered to groups of academicians, staff of day care centers, administrators of day care centers and parents who were either current, past or potential users of daycare centers. Initially, forty people in each of the four groups were contacted and ask to complete the form according to what they perceived to the ideal for each set of polar adjectives for each concept. Today, more than 4,000 individuals have completed the forms in a variety of countries and the results remain consistent. The participants have been from a variety of ethnic backgrounds, socio-economic levels, various academic backgrounds, a broad range of educational levels and the results remain consistent. The statistical means for each group have been maintained. In spite of the changes occurring in many societies there has been consistency of results. In analyzing societal trends, during a period of transition, one may easily find a meaningful tendency toward centrality. Salk[30] states that during periods of rapid change there are those who are extremely radical in their willingness to change or in their resistance to change and that eventually there is a leveling of off somewhere in the middle. The final forms are in Figure 10 Childcare, Figure 11 Staff, and Figure 12 Psychological Milieu.

**CHILDCARE**

| | | |
|---|---|---|
| custodial | ___:___:___:___:___:___:___: | complimentary |
| same socio-economic group multi ethnic backgrounds | ___:___:___:___:___:___:___: | mixed socio-economic group few ethnic groups |
| multi – cultural | ___:___:___:___:___:___:___: | homogeneous |
| grouped by age | ___:___:___:___:___:___:___: | grouped family style |
| patchwork | ___:___:___:___:___:___:___: | utopia |
| serving working parents | ___:___:___:___:___:___:___: | serving nonworking parents |
| provide balanced nutrition | ___:___:___:___:___:___:___: | provide available food |
| deal with intellectual development | ___:___:___:___:___:___:___: | deal with emotional development |
| interdisciplinary activities | ___:___:___:___:___:___:___: | single discipline activities |
| encourage creative behavior | ___:___:___:___:___:___:___: | encourage conforming behavior |
| concern about process of learning | ___:___:___:___:___:___:___: | concern about product of learning |
| formal pre-school curricula | ___:___:___:___:___:___:___: | babysitting |
| modify (to improve) child behavior | ___:___:___:___:___:___:___: | modify (to improve) family behavior |
| spontaneous activities | ___:___:___:___:___:___:___: | structured activities |
| include health prevention | ___:___:___:___:___:___:___: | include health crisis |
| people centered | ___:___:___:___:___:___:___: | material centered |
| meet specific needs | ___:___:___:___:___:___:___: | meet diverse needs |
| non-governmental | ___:___:___:___:___:___:___: | governmental |
| policies established by governmental regulatory board | ___:___:___:___:___:___:___: | policies established by local community |
| priority oriented | ___:___:___:___:___:___:___: | staff oriented |
| humanistic | ___:___:___:___:___:___:___: | mechanistic |
| relies on assessments | ___:___:___:___:___:___:___: | relies on procedures |
| continuous | ___:___:___:___:___:___:___: | sporadic |
| good | ___:___:___:___:___:___:___: | bad |

Figure 10 : Semantic Differential for Childcare

**STAFF**

| | | |
|---|---|---|
| professional | ___:___:___:___:___:___:___: | non-professional |
| substitute for parents | ___:___:___:___:___:___:___: | expand care of parents |
| instinctive behavior | ___:___:___:___:___:___:___: | model for behaviors |
| close relationship with children | ___:___:___:___:___:___:___: | unwillingness to become involved with children |
| responsive to each child's needs | ___:___:___:___:___:___:___: | recognize group need |
| responsible | ___:___:___:___:___:___:___: | excusable |
| casual | ___:___:___:___:___:___:___: | businesslike |
| young | ___:___:___:___:___:___:___: | old |
| single | ___:___:___:___:___:___:___: | married |
| high school education or less | ___:___:___:___:___:___:___: | college education or more |
| parent | ___:___:___:___:___:___:___: | non-parent |
| introvert | ___:___:___:___:___:___:___: | extrovert |
| orderliness | ___:___:___:___:___:___:___: | chaotic |
| consistency | ___:___:___:___:___:___:___: | unpredictable |
| permissive | ___:___:___:___:___:___:___: | directive |
| aloof | ___:___:___:___:___:___:___: | nurturant |
| perceptive | ___:___:___:___:___:___:___: | indifferent |
| flexible | ___:___:___:___:___:___:___: | relentless |
| dynamic and spontaneous | ___:___:___:___:___:___:___: | patterned |
| traditional | ___:___:___:___:___:___:___: | creative |
| child oriented | ___:___:___:___:___:___:___: | staff oriented |
| cooperative | ___:___:___:___:___:___:___: | autocratic |
| consistent personnel | ___:___:___:___:___:___:___: | available volunteers |
| paid | ___:___:___:___:___:___:___: | not paid |
| religious | ___:___:___:___:___:___:___: | non-denominational |

Figure 11 : Semantic Differential for Staff

**PSYCHOLOGICAL FACTORS**

| | | |
|---|---|---|
| concern about individual approaches | ___:___:___:___:___:___:___: | concern about group approaches |
| design to control | ___:___:___:___:___:___:___: | design to liberate |
| sensitivity | ___:___:___:___:___:___:___: | imperceptive |
| attachment | ___:___:___:___:___:___:___: | estrangement |
| cooperation | ___:___:___:___:___:___:___: | competition |
| restrained | ___:___:___:___:___:___:___: | emotional |
| dependable | ___:___:___:___:___:___:___: | unreliable |
| imprudent | ___:___:___:___:___:___:___: | considerate |
| socially self directive | ___:___:___:___:___:___:___: | direction by others |
| past /present orientation | ___:___:___:___:___:___:___: | future orientation |
| freedom | ___:___:___:___:___:___:___: | limit setting |
| peer evaluation | ___:___:___:___:___:___:___: | self evaluation |
| emphasize role playing | ___:___:___:___:___:___:___: | emphasize individuality |
| egocentrism | ___:___:___:___:___:___:___: | ethnocentrism |
| somatic focus | ___:___:___:___:___:___:___: | social focus |
| relieve anxiety | ___:___:___:___:___:___:___: | develop anxiety |
| creative behavior | ___:___:___:___:___:___:___: | traditional behavior |
| existentialism | ___:___:___:___:___:___:___: | structuralism |
| maximize facts /concepts | ___:___:___:___:___:___:___: | minimize facts/concepts |
| mechanistic | ___:___:___:___:___:___:___: | humanistic |
| objectively developed | ___:___:___:___:___:___:___: | subjectivity developed |
| individualistic | ___:___:___:___:___:___:___: | socialistic |
| abstract | ___:___:___:___:___:___:___: | concrete |
| emotional assessment | ___:___:___:___:___:___:___: | intellectual assessment |
| self esteem | ___:___:___:___:___:___:___: | self evaluation |
| sense of security | ___:___:___:___:___:___:___: | isolationism |
| counteract | ___:___:___:___:___:___:___: | counterbalance |
| idealistic | ___:___:___:___:___:___:___: | functional |
| explicit | ___:___:___:___:___:___:___: | implicit |

Figure 12 : Semantic Differential for Psychological Milieu

The statistical analysis of the attitudes indicated on the semantic differential scales used in this research was descriptive, with inferences based upon mean profile analysis. McNemar[47] states that appropriate descriptive terms include percentages, means and medians, standard deviation, and measures of relationship or association for such groups as are involved in the breakdown. Inferences are made about differences or relationships via appropriate sampling errors or significance tests. A frequent short coming in the studies of attitudes by scale techniques is the omission of means, and more frequently, of standards deviations. Such omission makes it difficult to compare one study with another.

## Findings and Analysis

The first research question asked: what characteristics of open systems play a leading role in the development of a care for children based on the concept of the child as an open system. In other words, what type of child rearing is best for children? Characteristics of open systems were reviewed that seem to play a leading role in the development of a care environment for a child with the primary focus on the concepts of equifinality, negentropy, differentiation, steady state and dynamic homeostasis, information input, negative feedback and the coding process, cycle of events, input, throughput and output.

Equifinality was consistently cited as a concept essential to understand child development, most prominently by Salk[30] who believes this characteristic is a key to achieving the values of Epoch B. White and Watts[7] observations of children demonstrated that there are a multitude of ways for a child to achieve the qualities which mark the child as a competent individual by the age of three years. Evaluation of preschool programs according to the criteria of optimal child development demonstrated that successful development is correlated with careful matching of backgrounds of children to specific types of programming. Brazelton[12], and Chess, Birch and Thomas[9] cite evidence that consideration of temperament is necessary in approaches taken with a child to help the child achieve desired developmental gains. Sheehy[56] identifies the developmental characteristics of adults that may influence the nature of their interactions with children and shows the wide variance of attained developmental levels among such adults. Parcel and Geschwender[57], Hortacsu[58] Fox, Platz and Bentley[59] are a few of the researchers looking at factors in families and society that influence the development of the young child. However, Harris[60] states that it is not parents but peers who most influence child development. All lend support to the concept of the child as an open system responding to input from the environment.

Negative entropy as a characteristic of open systems is important in this model because it identifies various sources of energy and information which must be available in the child's needs to reduce entropy and prevent dissolution are to be met. Negative entropy may be either physical or psychological, the body utilizes various forms of energy to insure some physiological check and balances for the child. At a very young age, the child begins to develop psychological coping mecha-

nisms to manage external and internal stress. A child withdraws or regresses for protection when faced with overwhelming stress. For example, a child who feels ill will sleep. Faced with too many new stimuli, the child will cling to a person who signifies comfort or to a comfort an object, such as a thumb, a blanket, a bottle, fingers, or a doll.

Differentiation as a characteristic of open systems is demonstrated throughout the growth and development of the child in all aspects of physical and psychological growth. It is present also in the child care center which differentiates programming on the basis of steady state and dynamic homeostasis are the characteristic of any viable system and the child is no exception. There is a constant striving to attain various balances within the child' s system. As one drive is satisfied another is created, keeping the system goal-oriented and protected from stagnation and death. The growth of the child is based upon these strivings and the balances within the child's system prevent overgrowth in one aspect of development as they draw the system fluctuations toward a steady state. The child care system which develops homeostatic processes and a viable steady state is likely to be able to assist children in its care to do the same.

Information input, negative feedback and the coding process are necessary for system maintenance and growth. The child utilizes these information processing characteristics in a variety of situations. The past experiences of a child help to prepare for future encounters.

Cycles of events are unavoidable in living systems. The energy exchange which provides the child with biological and psychological negative entropy is an input-output cycle that may not be arrested for long, if the child is to survive. Continual interaction with the environment provides confirmation to the child of positive actions and encourages extinction of destructive tendencies. The smile of an infant when the parent is exasperated with the mundane tasks provides new energies to the mother or caregiver, enabling the individual to continue the loving care for the dependent infant. By the same token, the caregiver's tenderness renews the energy the infant needs for developmental striving. The model childcare center, too, must interact with the environment in cycles of energy exchanging events, if it is to remain healthy and purposeful.

The input throughput and output of the child system are of course integral parts of the system. Despite their critical importance to open system functioning, instances of these characteristics are innumerable and already well documented.

The second research question : What societal trends and attitudes are identifiable as influencing the care of children? Societal trends and attitudes through the years that have influenced the care of children have been cited and discussed. The major modes of response identified by deMause (1975) as infanticide, abandonment, ambivalence, intrusive, socializing, and helping illustrate the range of such attitudes. These major response modes are still operating today.

The values that Salk[30] predicts are necessary for Epoch B have been considered, and views he expresses concerning population and ecological control, value and the quality of life have been presented. It seems apparent that a trend towards a new set of values, which must evolve to meet changing societal needs, is already underway.

Attitudes toward children appear to be viewed in various countries through three major stages : first they were not even officially recognized, then they were viewed as miniature adults, and now they are seen as the basis for the future like in the days of Plato. The influence of attitudes toward children upon the services provided for them is apparent in various countries. Services for children have generally reflected a desire to free the mother for economic gain rather than to provide care and enhance the lives of children.

The second part of this question related to what are the major developmental theories and how do they influence childcare. The three major classifications of developmental theories---organic lamp, psychoanalytic and mechanistic mirror---are reflected in childcare throughout the world. Centers that care for children can often be identified by the philosophy of their beliefs related to the needs of

children reflecting one of the classifications of developmental theories. In visiting childcare centers in various countries it is interesting to note that the espoused beliefs are not necessarily what is the guiding philosophy.

The third question addressed in this research asked do the attitudes obtained by the use of the semantic differential scales (Day Care, Staff, Psychological Factors) related to day care, staff, and psychological milieu reflect the anticipation of future needs of the child, as these needs are identified in the current literature? The data was gathered on the semantic differential scales and will be discussed related to the following tables based on the mean scores related to the items for specific concepts. The direction of all four groups is toward the characteristics thought desirable as reflected in the literature. It seems that all groups regardless of the country where data is gathered see child care as a support systems to strengthen nuclear families and to offer needed services to the increasing number of families in need of childcare services. The direction also reflects the trend toward humanistic treatment of children based on comprehensive needs assessment rather than on rigid exclusionary procedures. There is some spread when one looks at who should set policy for childcare centers. This is not too surprising since the data has been gathered under different political systems. However some individuals in looking at the forms, believe that the childcare centers should make the policy rather than others which is an interesting concept particularly since some are used to government policy only.

| | Staff | Parents | Academicians | Administrators |
|---|---|---|---|---|
| custodial - complimentary | 6.2 | 5.8 | 5.2 | 6.7 |
| patchwork - utopia | 4.7 | 5.0 | 3.6 | 5.3 |
| serving working parents-serving non-working parents | 3.0 | 2.1 | 2.9 | 2.6 |
| provide balanced nutrition-provide available foods | 1.4 | 1.2 | 1.6 | 1.9 |
| formal pre-school curriculum-babysitting | 2.9 | 2.7 | 3.0 | 3.2 |
| include health prevention - include health crisis | 2.5 | 2.4 | 2.6 | 3.2 |
| meet specific needs-meet diverse needs | 5.6 | 4.4 | 5.1 | 5.6 |
| non-government-governmental | 2.4 | 1.8 | 2.8 | 4.4 |
| policies established by govern mental regulatory board - policies established by local community | 5.1 | 6.8 | 2.8 | 4.7 |
| priority oriented - staff oriented | 1.3 | 2.7 | 1.8 | 1.3 |
| humanistic - mechanistic | 1.1 | 1.9 | 1.6 | 1.9 |
| relies on assessment - relies on procedures | 1.2 | 2.2 | 1.1 | 1.7 |
| continuous-sporadic | 1.0 | 1.1 | 1.4 | 1.8 |
| good - bad | 1.0 | 1.8 | 1.6 | 1.2 |

Table 1 : Mean Attitude Scores for Academicians, Administrators, Staff and Parents on the Semantic Differential Scale for Items Related to Function, Responsibilities, Administration, General role and Attitude Toward Childcare Centers

| | Staff | Parents | Academicians | Administrators |
|---|---|---|---|---|
| same socio-economic group mixed socio-economic group | 5.4 | 5.8 | 4.0 | 6.0 |
| many ethnic backgrounds - few ethnic differences | 1.9 | 1.8 | 2.7 | 2.2 |
| multi-cultural - homogenous | 1.5 | 1.5 | 2.6 | 2.2 |
| grouped according to age - grouped family style (many ages) | 4.4 | 4.1 | 3.8 | 5.5 |

Table 2 : Mean Attitude Scores for Academicians, Administrators, Staff, and Parents on the Semantic Differential Scale for Items Related to the Population to be Served by Childcare Centers

Table 6 presents the mean attitude scores for items related to the population to be served by childcare centers. The trend in this section related to the population to be served showed a trend toward understanding the need to serve a variety of people and to begin with young children to help them to learn to live with others who may or may not be very much like themselves. In striving for the values of Epoch B, it is imperative to develop climates that foster cooperation, understanding and tolerance of individual differences.

Table 3 reflects the curricular and program characteristics for which attitudes were sought. On these items variances between the groups were apparent. The items related to learning did create a bit of a split with which is not surprising because of the emphasis on the information explosion. Much of the data gathered is from communities undergoing significant change.

Table 4 reports the means related to attitudes related to staff preparation. The literature reveals that parents are more concerned about the warmth and interest in the children than professional degrees[7,61]. In many countries formal education is not considered for childcare workers while in other countries there are post high school programs to prepare professionals for childcare positions. However, the personalities of the staff and how they relate to the children seems to be dominate in all cultures visited.

Characteristics of childcare center staff tended toward the characteristics presented by Pearis and Pearis[35] and Salk[30]. Permissiveness, applied with consistency and by nurturant individuals, will help a child to develop self direction, responsibility, and creativity. If staff themselves exhibit these characteristics consistently, they will provide desirable behavior models for children, demonstrating through their own acts and attitudes the preventative health, cooperation, self-expression, and self-restraint.

The psychosocial milieu means indicate that the trend of the characteristics is toward the values of Epoch B. the polar items on this table are reflective of the opposite values of Epoch A and Epoch B. Several items which present a spread of opinion may be interpreted as past and present orientation versus future orientation.

This spread is not surprising since what is practiced is generally based upon past successes and failures of the personnel, not at all unlike people parenting as they were parented. Inner control, a value of Epoch B is shared by all four groups consistently over time. Other trends toward the values of Epoch B were the attitudes toward social focus versus somatic focus; creative behavior versus traditional behavior; and sense of security versus isolationism.

The split between maximize facts and concepts and minimize facts and concepts is understandable in view of the conflicts both within individuals and within society as a whole concerning process versus product learning. Education is adopting process learning with the introduction of many new teaching techniques and the information explosion, but it is still in many instances measuring a static product. Herein lies the root of the conflict.

Table 7 illustrates the tendency toward the union of qualities essentially polar but dualistically necessary to attain a balance and improve the quality of

| | Staff | Parents | Academicians | Administrators |
|---|---|---|---|---|
| deal with intellectual development - deal with emotional development | 5.0 | 4.6 | 4.6 | 4.5 |
| interdisciplinary activities - single discipline activities | 1.8 | 3.9 | 1.8 | 2.7 |
| encourage creative behavior - encourage conforming behavior | 2.2 | 3.3 | 2.1 | 2.1 |
| modify (to improve) child beh avior - modify (to improve) family behavior | 3.9 | 3.6 | 3.0 | 3.2 |
| spontaneous activities - planned activities | 2.9 | 4.3 | 3.3 | 4.7 |
| people or group centered - material centered | 2.6 | 2.4 | 2.6 | 3.2 |

Table 3 : Mean Attitude Scores for Academicians, Administrators, Staff, and Parents on the Semantic Differential Scale for Items Related to the Curriculum and Program Characteristics of Childcare Centers

| | Staff | Parents | Academicians | Administrators |
|---|---|---|---|---|
| professional - non-professional | 1.8 | 2.8 | 4.2 | 1.8 |
| high school education or less - college education or more | 5.9 | 5.5 | 5.7 | 4.9 |
| Consistent personnel - available volunteers | 1.2 | 1.9 | 1.4 | 2.0 |
| paid - not paid | 1.6 | 1.9 | 1.9 | 2.6 |
| Religious - non-denominational | 5.6 | 6.0 | 5.5 | 5.6 |

Table 4 : Mean Attitude Scores for Academicians, Administrators, Staff, and Parents on the Semantic Differential Scale for Items Related to the Educational Preparation of Staff

| | Staff | Parents | Academicians | Administrators |
|---|---|---|---|---|
| substitute for parents - expand care of parents | 6.7 | 4.9 | 5.8 | 6.6 |
| instinctive behavior - model for behaviors | 5.5 | 6.6 | 5.9 | 5.9 |
| close relationship with children - unwillingness to become involved with children | 1.1 | 1.8 | 1.4 | 1.0 |
| responsive to each child's needs - recognize group needs | 3.2 | 3.3 | 2.8 | 2.2 |
| responsible - excusable | 1.1 | 1.1 | 1.6 | 1.1 |
| casual - businesslike | 3.1 | 2.7 | 3.0 | 2.9 |
| young - old | 3.6 | 3.2 | 3.5 | 2.4 |
| single - married | 4.4 | 4.9 | 4.2 | 3.9 |
| parent - non-parent | 3.5 | 3.2 | 3.8 | 4.7 |
| introvert - extrovert | 4.7 | 4.4 | 4.6 | 4.5 |
| orderliness - chaotic | 2.4 | 2.4 | 2.1 | 1.8 |
| consistency - unpredictable | 1.6 | 2.5 | 2.0 | 1.2 |
| permissive - directive | 3.6 | 4.6 | 3.6 | 1.5 |
| aloof - nurturant | 5.9 | 5.3 | 6.8 | 7.0 |

| | | | | |
|---|---|---|---|---|
| perceptive - indifferent | 1.3 | 1.5 | 1.4 | 1.3 |
| flexible - relentless | 1.3 | 1.4 | 1.8 | 2.2 |
| dynamic and spontaneous - patterned | 2.3 | 1.5 | 1.9 | 2.1 |
| traditional - creative | 6.5 | 5.3 | 5.6 | 5.9 |
| child oriented - staff oriented | 1.2 | 2.5 | 2.0 | 1.3 |
| cooperative - autocratic | 1.1 | 2.2 | 1.9 | 2.4 |

Table 5 : Mean Attitude Scores for Academicians, Administrators, Staff, and Parents on the Semantic Differential Scale for Items Related to the Characteristics of Childcare Center Staff

| | Staff | Parents | Academicians | Administrators |
|---|---|---|---|---|
| design to control design to liberate | 1.2 | 5.9 | 6.0 | 5.6 |
| freedom - limit setting | 4.1 | 5.3 | 3.6 | 3.8 |
| sensitivity - imperceptive | 1.2 | 1.0 | 1.5 | 1.2 |
| attachment - estrangement | 1.5 | 1.1 | 1.8 | 1.3 |
| cooperation- competition | 1.6 | 3.9 | 1.7 | 1.7 |
| dependable - unreliable | 1.2 | 1.1 | 1.2 | 1.0 |
| imprudent - considerate | 6.3 | 6.7 | 6.9 | 6.1 |
| socially self-directive - direction by others | 2.4 | 3.3 | 2.2 | 3.5 |
| past and present orientation - future orientation | 5.7 | 4.9 | 5.9 | 2.9 |
| somatic focus - social focus | 5.8 | 6.0 | 6.3 | 6.3 |
| relieve anxiety - develop anxiety | 2.4 | 1.9 | 1.5 | 2.2 |
| creative behavior - traditional behavior | 1.5 | 2.9 | 2.5 | 2.7 |
| existentialism - structuralism | 5.1 | 3.2 | 5.3 | 2.8 |
| maximize facts and concepts - minimize facts and concepts | 6.5 | 5.7 | 5.4 | 6.2 |
| mechanistic - humanistic | 3.3 | 2.3 | 3.2 | 3.2 |
| self-esteem - self-evaluation | 1.2 | 1.6 | 3.5 | 2.7 |
| sense of security - isolationism | 6.2 | 5.2 | 5.3 | 5.5 |
| counteract-counterbalance | 4.2 | 4.7 | 3.6 | 4.2 |

Table 6 : Mean Attitude Scores for Academicians, Administrators, Staff, and Parents on the Semantic Differential Scale for Items Related to the Characteristics of the Psychological Milieu of Childcare Centers

| | Staff | Parents | Academicians | Administrators |
|---|---|---|---|---|
| concern about individual approaches - concern about group approaches | 3.3 | 3.9 | 4.4 | 4.3 |
| restrained - emotional | 4.3 | 3.4 | 4.4 | 3.5 |
| objectivity developed- subjectivity developed | 4.0 | 3.0 | 3.6 | 4.8 |
| individualistic - socialistic | 3.0 | 3.5 | 3.6 | 4.7 |
| abstract - concrete | 3.4 | 4.2 | 3.4 | 3.8 |

| | | | | |
|---|---|---|---|---|
| emotional assessment - intellectual assessment | 3.1 | 3.5 | 3.1 | 2.6 |
| peer evaluation - self-evaluation | 5.3 | 3.7 | 5.0 | 4.5 |
| emphasize role playing - emphasize individuality | 4.8 | 4.8 | 4.9 | 5.9 |
| egocentrism - ethnocentrism | 5.9 | 5.3 | 5.1 | 5.1 |
| idealistic - functional | 4.4 | 5.6 | 4.4 | 3.9 |
| explicit - implicit | 4.9 | 4.2 | 3.9 | 4.5 |

Table 7 : Mean Attitude Scores for Academicians, Administrators, Staff, and Parents on the Semantic Differential Scale for Items Related to the Qualities Necessary to Attain the Values of Epoch B

life. The trend towards neutrality in relation to emotional assessment versus intellectual assessment; abstract versus concrete; peer evaluation versus self evaluation is understandable either on the basis that this is an era of transition between Epochs A and B or on the basis that bot qualities are essential in the achievement of new values. This type of quality was characterized by Salk[30] as not being either or but and.

With all the data, tests of significance between the group means of each set of factors were completed. There were no significant differences among any of the four groups on any of the items. Tables 8, 9, 19 give the statistical means and the standard deviations for each group. The sample is now over 4,000. The tools demonstrate effectiveness, not in showing group differences but in terms of underscoring the positive association of general attitudes with the view of the child and the child's needs as reflected in the current literature. The fact that the results give no significant difference in groups supports studies which suggest that attitudes are the product of many factors not directly related to educational level, age, socio-economic level, religious background, or culture[47].

| Childcare | Staff | Parents | Academicians | Administrators | X | SD |
|---|---|---|---|---|---|---|
| custodial-complimentary | 6.2 | 5.8 | 5.2 | 6.7 | 5.8 | 0.55 |
| same socio-economic group - mixed socio-economic group | 5.4 | 5.8 | 5.0 | 6.0 | 5.7 | 0.38 |
| multi ethnic backgrounds - few ethnic groups | 1.9 | 1.8 | 2.7 | 2.2 | 2.1 | 0.36 |
| multi - cultural - homogeneous | 1.5 | 1.5 | 2.6 | 2.2 | 2.0 | 0.41 |
| grouped by age - grouped family style | 4.4 | 4.1 | 3.8 | 5.5 | 4.5 | 1.10 |
| patchwork-utopia | 4.7 | 5.0 | 3.6 | 5.3 | 4.6 | 0.55 |
| serving working parents - serving non-working parents | 3.0 | 2.1 | 2.9 | 2.6 | 2.6 | 0.36 |
| provide balanced nutrition - provide available food | 1.4 | 1.2 | 1.6 | 1.9 | 1.5 | 0.26 |
| deal with intellectual - deal with emotional development | 5.0 | 4.6 | 4.6 | 4.5 | 4.7 | 0.19 |
| interdisciplinary activities - single discipline activities | 1.8 | 3.9 | 1.8 | 2.7 | 2.6 | 0.87 |
| encourage creative behavior - encourage conforming behavior | 2.2 | 3.3 | 2.1 | 2.1 | 2.4 | 0.51 |
| concern about process of learning - concern about product of learning | 1.6 | 3.9 | 3.0 | 3.2 | 2.9 | 0.83 |
| formal pre-school curriculum - baby-sitting | 2.9 | 2.7 | 3.0 | 3.2 | 2.9 | 0.56 |

| | | | | | | |
|---|---|---|---|---|---|---|
| modify (to improve) child behavior - modify (to improve) family behavior | 3.9 | 3.6 | 4.0 | 5.1 | 4.2 | 0.57 |
| spontaneous activities - structured activities | 2.9 | 4.3 | 3.3 | 4.7 | 3.8 | 0.74 |
| include health prevention - include health crisis | 2.5 | 2.35 | 2.6 | 3.2 | 2.7 | 0.32 |
| people centered - material centered | 2.6 | 2.9 | 1.8 | 2.5 | 2.4 | 0.40 |
| meet specific needs - meet diverse needs | 5.6 | 4.4 | 5.1 | 5.6 | 5 | 0.51 |
| non-governmental - governmental | 2.4 | 1.8 | 2.8 | 4.4 | 2.8 | 0.81 |
| policies established by | 5.1 | 6.7 | 2.8 | 4.7 | 4.9 | 1.40 |
| governmental regulatory board - policies established by local community board | 1.3 | 2.7 | 1.8 | 1.3 | 1.1 | 0.88 |
| priority oriented - staff oriented | 1.1 | 1.9 | 1.58 | 1.9 | 1.57 | 0.33 |
| humanistic - mechanistic | 1.2 | 2.2 | 1.1 | 1.7 | 1.6 | 0.44 |
| relies on assessments - relies on procedures | 1.0 | 1.1 | 1.4 | 1.8 | 1.3 | 0.31 |
| continuous- sporadic | 1.0 | 1.8 | 1.6 | 1.2 | 1.3 | 0.33 |
| good - bad | 2.9 | 3.2 | 2.9 | 3.3 | 3.1 | |

Table 8 : Statistical Means and Standard Deviations for Academicians, Administrators, Staff and Parents on the Semantic Differential Scale Related to Childcare

The factors showing a greater range of attitude spread were generally factors which may well be currently in the transitional phase of values from Epoch A to Epoch B. In any change process there will be the early adapters, the laggards and the middle of the road groups which would influence a

| Staff | Staff | Parents | Academicians | Administrators | X | SD |
|---|---|---|---|---|---|---|
| professional - non-professional | 1.8 | 2.8 | 4.2 | 1.8 | 2.6 | 0.997 |
| substitute for parents - expand care of parents | 6.7 | 4.9 | 5.8 | 6.6 | 6.0 | 0.72 |
| instinctive behavior - model for behaviors | 5.5 | 6.6 | 5.9 | 5.8 | 5.6 | 0.40 |
| close relationship - unwillingness to become involved with children | 1.1 | 1.8 | 1.4 | 1.0 | 1.3 | 0.31 |
| responsive to each child's needs - recognize group need | 3.2 | 3.3 | 2.8 | 2.2 | 2.9 | 0.43 |
| responsible - excusable | 1.1 | 1.1 | 1.6 | 1.1 | 1.2 | 0.22 |
| casual- businesslike | 3.1 | 2.7 | 3.0 | 2.9 | 2.9 | 0.15 |
| young - old | 3.6 | 3.2 | 3.5 | 2.4 | 3.2 | 0.47 |
| single - married | 4.4 | 4.9 | 4.2 | 3.9 | 4.4 | 0.36 |
| high school education more or less - college education or more | 5.9 | 5.5 | 5.7 | 4.9 | 5.5 | 0.37 |
| parent-non-parent | 3.5 | 3.2 | 3.8 | 4.7 | 3.8 | 0.55 |
| introvert- extrovert | 4.7 | 4.4 | 4.6 | 4.5 | 4.6 | 0.12 |
| orderliness - chaotic | 2.4 | 2.7 | 2.1 | 1.8 | 2.3 | 0.33 |
| consistency - unpredictable | 1.6 | 2.5 | 2.0 | 1.2 | 1.8 | 0.48 |
| permissive - directive | 3.6 | 4.6 | 3.6 | 1.5 | 3.3 | 1.10 |

| | | | | | | |
|---|---|---|---|---|---|---|
| aloof - nurturant | 5.9 | 5.3 | 6.8 | 7.0 | 6.2 | 0.70 |
| perceptive - indifferent | 1.3 | 1.5 | 1.4 | 1.3 | 1.4 | 0.09 |
| flexible - relentless | 1.3 | 2.4 | 1.8 | 2.2 | 1.9 | 0.41 |
| dynamic and spontaneous - patterned | 2.3 | 1.5 | 1.9 | 2.1 | 1.9 | 0.4 |
| traditional - creative | 6.5 | 5.3 | 5.6 | 5.9 | 5.8 | 0.44 |
| child oriented - staff oriented | 1.2 | 2.5 | 2.0 | 1.3 | 1.7 | 0.54 |
| cooperative - autocratic | 1.1 | 2.2 | 1.9 | 2.4 | 1.9 | 0.5 |
| consistent personnel - available volunteers | 1.2 | 1.9 | 1.4 | 2.0 | 1.6 | 0.340 |
| paid - not paid | 1.6 | 1.9 | 1.9 | 2.6 | 2.0 | 0.37 |
| religious - non-demoninational | 5.6 | 6.0 | 5.5 | 5.6 | 5.7 | 0.19 |

Table 9 : Statistical Means and Standard Deviations for Academicians, Administrators, Staff and Parents on the Semantic Differential Scale Related to Staff

trend toward neutrality while change is advancing horizontally and vertically. The change states depicted are definitely reflected in the resulting data from the administration of the semantic differential scales.

| PSYCHOLOGICAL FACTORS | Staff | Parents | Academicians | Administrators | X | SD |
|---|---|---|---|---|---|---|
| concern about individual approaches - concern about group approaches | 3.3 | 3.9 | 4.4 | 4.3 | 3.9 | 0.43 |
| design to control - design to liberate | 6.2 | 5.9 | 6.0 | 5.6 | 5.9 | 0.23 |
| sensitivity - imperceptive | 1.2 | 1.0 | 1.5 | 1.2 | 1.2 | 0.16 |
| attachment - estrangement | 1.5 | 1.1 | 1.8 | 1.3 | 1.4 | 0.25 |
| cooperation - competition | 1.6 | 3.9 | 1.7 | 1.7 | 2.2 | 0.98 |
| restrained emotional | 4.3 | 3.4 | 4.4 | 3.5 | 3.9 | 0.45 |
| dependable - unreliable | 1.2 | 1.1 | 1.2 | 1.0 | 1.1 | 0.07 |
| imprudent - considerate | 6.3 | 6.7 | 6.9 | 6.1 | 6.5 | 0.33 |
| socially self directive - direction by others | 2.4 | 3.3 | 2.2 | 3.5 | 2.8 | 0.54 |
| past /present orientation - future orientation | 5.7 | 4.9 | 5.9 | 2.9 | 4.9 | 1.20 |
| freedom - limit setting | 4.1 | 5.3 | 3.6 | 3.8 | 4.2 | 1.10 |
| peer evaluation - self evaluation | 5.3 | 3.7 | 5.0 | 4.5 | 4.6 | 0.61 |
| emphasize role playing - emphasize individuality | 4.8 | 4.8 | 4.9 | 5.9 | 5.1 | 0.49 |
| egocentrism - ethnocentrism | 5.9 | 5.8 | 5.1 | 5.5 | 5.4 | 0.09 |
| somatic focus - social focus | 5.8 | 6.0 | 6.3 | 6.3 | 6.1 | 0.26 |
| relieve anxiety- develop anxiety | 2.4 | 1.9 | 1.5 | 2.2 | 1.9 | 0.40 |
| creative behavior - traditional behavior | 1.5 | 2.9 | 2.5 | 2.7 | 2.4 | 0.53 |
| existentialism - structuralism | 5.7 | 3.2 | 5.3 | 2.8 | 4.2 | 0.68 |
| maximize facts /concepts - minimize facts/concepts | 6.5 | 5.7 | 5.4 | 6.2 | 5.9 | 1.30 |
| mechanistic - humanistic | 3.3 | 2.3 | 3.2 | 3.2 | 3.0 | 0.42 |
| objectively developed - subjectivity developed | 4.0 | 3.0 | 3.6 | 4.8 | 3.9 | 0.41 |

| | | | | | | |
|---|---|---|---|---|---|---|
| individualistic - socialistic | 3.0 | 3.5 | 3.6 | 4.7 | 3.7 | 0.65 |
| abstract - concrete | 3.4 | 4.2 | 3.4 | 3.8 | 3.7 | 0.61 |
| emotional assessment - intellectual assessment | 3.1 | 3.5 | 3.1 | 2.6 | 3.1 | 0.44 |
| self esteem - self-evaluation | 1.2 | 1.6 | 3.5 | 2.7 | 1.8 | 0.58 |
| sense of security - isolationism | 6.2 | 5.2 | 5.3 | 5.5 | 5.6 | 0.24 |
| counteract - counterbalance | 4.2 | 4.7 | 3.6 | 4.2 | 4.21 | 0.46 |
| idealistic - functional | 4.4 | 5.6 | 4.4 | 3.9 | 4.6 | 0.64 |
| explicit - implicit | 4.9 | 4.2 | 3.9 | 4.5 | 4.4 | 0.52 |

Table 10 : Statistical Means and Standard Deviations for Academicians, Administrators, Staff and Parents on the Semantic Differential Scale Related to Psychological Milieu

The findings just presented provide the basis for the conceptual model for childcare based on the concept of the child as an open system.

**Conceptual Model for Childcare**

Childcare has become a complex science that has inputs from many disciplines. Psychology has identified patterns of normal and abnormal physical growth patterns. Nutritionists utilize knowledge of body chemistries and growth curves to prescribe proper dietary management for normal growth as well as for correction of malnutrition. Educators provide systems dedicated to cognitive development and facilitation of the child's learning. Social service provides knowledge of communities, and of resources and influences impinging upon family life. Nursing provides health care that is both preventative and rehabilitative. Architecture conceptualizes spatial arrangements and environment thought to be conducive to optimal development of the child. Disciplines such as art, music, occupational therapy, physical therapy, and speech communication provide both the child care worker and the child himself with skills which potentially enhance programs in day care centers[62].

The challenge facing man is not the control of disease but control of himself. Man needs to seek now methodologies by which man can live with himself and others. Some sectors of society seem to be better prepared to manage changing relationships better than other sectors. Different socio-economic levels have been present since the beginning of time. History reveals occasional shifts where the rich ge richer and the poor get poorer. But it seems to be a sociological constant that the life experiences of the poor or of people who are in continual crises tend to increase their strengths and coping mechanism[63]. It may be that, now the entire fabric of human society is approaching crises which will test its ability to grow strong and withstand the forces of social and ecological destruction.

General Systems Theory provides a framework for the development of childcare which will consider the child as an open system. The lives of children are strongly influenced by both physical and psychological inputs into their systems. Culture and values guide parental attitudes and expression of love, caring, and discipline on behalf of their children. The interrelationships between family members influence the behaviors of all.

To apply General Systems Theory to the development of childcare centers both the child and the center need to be viewed as open systems. The environmental factors from which child and center draw inputs may be different at times, and at other times they may be the same. For example, economic disaster experienced nationally or even locally increases stress upon both systems, whereas a death in the family of a child affects the child system to a greater degree than it affects the child-care center system, although the people within the center, adult and child alike, may observe behavioral changes in the child system most affected. In open systems theory, environmental influences are not considered sources of error variance but are integrally related to the functioning of a social system.

Societal attitudes toward children greatly influence childcare center quality of care, and as a direct result, influence also the life of the child who is a user of the childcare services. When society becomes increasingly aware of the nature of the investment to be made in young children, such quality programs as services for prevention of physical defects will be offered under childcare auspices. Personnel for childcare center will be rewarded for caring for children in a manner more commensurate with the nature of their responsibility and will no longer be asked to accept salaries that place them close to poverty or below poverty levels. Children in hospitals and health care systems will also be treated as having special needs related to age.

Along with a new focus upon cognitive functioning, the Socratic emphasis will gain strength and the child will be encouraged to "know thyself". Programs in recent years have been focused on developing a child's self-esteem to prevent various forms of chemical dependency and mental illnesses. Many mental and physical problems in adulthood are now being linked to environmental and psychological experiences in the early years including prenatal. Seyle's stress theories indicate stress not released will cause physiologically destruction to body organs. Laboratory studies have illustrated sclerosis of the arteries, liver destruction, muscle atrophy and other deterioration of body organs that has been induced by stress.

Bronfenbrenner[64] in a visit to China commmented upon the self-discipline, self-restraint, and the happiness displayed by the children. These are notably characteristics that Salk[30] identifies with values of Epoch B through what means of developmental guidance are these attributes encouraged in children? China seems to be reflecting a high valuation of children and their development, a valuation not yet seen universally in the world today. The government provides many resources for Chinese families: family planning, health services and child care for infants and young children. These services are supportive of the values of Epoch B called pro-health and birth control. Salk[30] states in culture in which self discipline has been strongly emphasized, from early life on, self-expression will perhaps, be possible in a more balanced and perhaps even more satisfactory way than under circumstances in which external restraints have been removed without the concomitant development of self restraint.

Equifinality is a major concept providing the basis and lead for the emergence of a model which is conducive to the development of Epoch B values. Equifinality does not require a single method for achieving an objective, but multiple strategies and methodologies are therefore implicit in the model. Input, export, and transformation of matter and energy will not be the focal points of the model, because inputs are known to be extensive. Transformation of inputs within the system is assumed, but it is not reasonable to suppose that all processes of the transformation can be identified. Nalbone defines the leading part as the open system component which dominates all functioning of the system influences other parts more and fluctuates less in response to changes in other parts[65]. In order to qualify as a leading part, equifinality will need to be the focal point of all the system's energies, the part that develops the fastest, grows more in comparison to the other parts, influences other parts more and fluctuates less in response to changes in other parts.

Whitehead[66] emphasized that we are living in the first period of human history for which the assumption that what a person learns in his youth will serve a life time is false, today this time span is considerable shorter than that of human life, and accordingly our training must prepare individuals to face instant changes now available through cyberspace. The components of logic, relativity and dialectic permeate the interactions, philosophy and enhance the theories of the children's development.

The polar extremes of psychoanalytic theory and mechanistic mirror theory may be required for some children, however the determination to utilize these constructs would be based on observational and physical assessment of the children. For example, a child who has an auditory perceptual deficit may need strong environmental controls imposed upon him to best facilitate his development. Behavior modification has been demonstrated to be effec-

tive with children who have learning deficits. The effectiveness is based upon design of suitable environmental controls and effective use of reinforcers. The degree of external restraint implied by behavior modification techniques is diametrically opposed to the condition of self-restraint. However, in a well designed program of behavior modification self restraint may be developed, shaped toward establishing progressively independent inner controls. Children experiencing social adjustment problems, expressed either as aggression or withdrawal, are often processed through a behavior modification program to help them overcome their difficulty.

Bandura's studies on modeling have shown the teaching power of adult demonstrations which children can observe and imitate, or experience vicariously. Since children have a variety of experiences modeled for them in a wide range of cultural, socioeconomic, religious, racial and family life styles that have been organized to met their needs, many behavior patterns are already established before they enter a childcare program. Nutritional analysis of the foods of various cultures indicates the adequacies and deficits of customary diet, but also shows that a range of different foods can be used to achieve the same required physiological balance. Hall's cultural studies cite cultural differentiation in displays of affection, another way of meeting the basic human needs from a variety of cultural perspectives.

The variety of diets, rest patterns, emotional expressions, dress, activities, stories, and teaching techniques in a childcare center should reflect the variety of the styles of children who participate in the center. Utilization of the knowledge of individual differences because of genetic inheritance and environment factors, increase the diversity. According to the principle of equifinality, a number of paths may be followed to attain the values and characteristics.

Basic physiological and psychological needs as presented by Montagu[67,68] may be met in a variety of equifinal ways, once the assessment of the child is outlined including the genetic inheritance, the cultural influences acting upon the child, the level of physiological, cognitive, and social development the child has attained. Brazelton's newborn assessment scale provides a means for evaluating infants within the first hours of life in order to ascertain aspects of temperament[12]. Hill's study of cognitive mapping for learning styles maybe helpful in facilitating the learning activities for a child. Meeting the health care needs of the child through assessments of all aspects of development is possible with a variety of standardized assessments available today. Deviations may be detected early and remedies can be prescribed and implemented early to minimize long term effect.

Infants are egocentric at birth though as they develop they become aware of others in their environment. Young children need to learn to monitor and control entropy that bombards them especially today with the over stimulation from toys available for the young. The use of play to develop non-destructive ways for expressing anger, jealousy, and aggression is healthy. Appropriate play activities and media are imperative for young children. Children need to know their moods are assessed and they need to learn how to recognize them and healthy behaviors for the various moods. Children require assistance in developing awareness of their feelings and learning appropriate ways to express these feelings[69].

Individuals working with children require ongoing staff development to learn more about children especially since so much research is being done on children today and because of the responsibility to the future. Information and feedback are extremely important to the developing child as well as to the caregivers. Preparing children for the future does not mean to focus on cognitive skills prematurely. Children emit cues related to their areas of learning readiness from early in life. Children will experiment and will often focus on one aspect of development at a time. It is not at all uncommon for them to switch areas for development periodically. Children select areas of interest and adults need to be aware of the cues of the young which are generally subtle and often non-verbal particularly before the verbal skills are well developed. Neurological

development will stimulate learning centers within the child. Certain levels of neurological development must physically occur before some of the other developmental tasks can occur. Children fluctuate in areas of development.

The model for development of the child will provide for the child to incorporate the values of Epoch A and B in striving for maturation as described by Overstreet[70]. Overstreet[70] listed critical dimensions of maturation as illustrated in Table 11. Childcare providers need to think of these as they care for children and incorporate opportunities for children to begin at their primary level to work toward these dimensions.

| From | | Toward |
|---|---|---|
| Dependence | → | Autonomy |
| Passivity | → | Activity |
| Subjectivity | → | Objectivity |
| Ignorance | → | Enlightenment |
| Small abilities | → | Large abilities |
| Few responsibilities | → | Many responsibilities |
| Narrow interests | → | Broad interests |
| Selfishness | → | Altruism |
| Self-rejection | → | Self-acceptance |
| Amorphous self-identify | → | Integrated self-identity |
| Focus on particulars | → | Focus on principles |
| Superficial concerns | → | Deep concerns |
| Imitation | → | Originality |
| Need for certainty | → | Tolerance for ambiguity |
| Impulsiveness | → | Rationality |

Table 11 : Critical Dimensions of Maturation[70]

The conceptual model for childcare based on the concept of the child as an open system reflects major characteristics of an open system and is envisioned as led by the principle of equifinality. The model recognizes elements of past philosophies as basic and continuing to exist in current thinking about childcare. Assessment of child and caretaker must continually take place so that the systems, as an open system, does not collapse of entropy. Programs will need to vary according to the assessed needs of the individuals involved. Human beings do not remain stagnant, and because of their potential for variability, individuals who may compatible one day may need to be removed another day. Caretaker self-awareness which recognizes such truths as human experience will aid in providing childcare.

Attitudes may not be stereotyped as evolving within individuals on the basis of fixed sets of learning experiences. Childcare requires caregivers who are selected on their assessment ability, sensitivity, and self-awareness, no matter how those skills and attitudes have been developed are most desirable. Content knowledge that would enhance a person's ability to care for child is desirable but acquirable, but the stated attributes seem to be the best three major qualifiers of personnel that would most positively influence the care of children. These abilities are learned from within an individual and cannot always be effectively taught, there is an element within the individual that develops these skills. It is no wonder that some parents recognize that others have skills they do not posses to foster the best development in their child.

**Summary**

The mobilization of knowledge and empirical evidence toward the development of a conceptual model for childcare based on the concept of the child as an open system was the focus of this study. The techniques of developmental research have been utilized to investigate trends, attitudes and patterns of change related to the care of children throughout the ages and to attempt to predict the direction of future patterns of care. The literature of General Systems Theory and its evolution served as the conceptual framework. Theories of model building have been utilized according to their applicability to the concept of the child as an open system. The developmental needs of children, the history of childcare were assessed for their insight to forecast needs of the future. A semantic differential scale was developed, validated with a split-half method, pilot tested and administered to academicians, administrators, parents and staff of childcare centers and has generated data with which to assess the direction of attitudes of these groups.

Equifinality is viewed as a leading part of the conceptual model for childcare presented here, which is based on the concept of the child as an open system. Major elements of the conceptual model are open system characteristics and their integration with the values of Epoch B as presented by Salk[30]. The semantic differential scales demonstrate by means of the profile analysis the direction of the attitudes of the four groups toward transition from the values of Epoch A to the values of Epoch B, as indicated also that current attitudes lean generally towards the values of Epoch B.

Kuhn[71] states that acceptance of a new paradigm is dependent upon the arrival of a theory which is better than its competitors. It need not explain all the facts with which it will be confronted. The test of this conceptual model is trial in a variety of centers and evaluation of outcomes. It has been tested in a variety of locations throughout the world and consistently the findings reveal a period of transition in childcare in all parts of the world.

Wisdom implies making judgments in advance rather than retrospectively, and this is the test which man now faces[30] may man guide tomorrow's future make the best choices for mankind.

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