Humanization in Architecture: Analysis of Themes through High School Building Problems

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ABSTRACT

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Doris Knatz Kowaltowski

Humanization of architecture is a term frequently found in recent architectural treatises. This thesis circumscribes the term to identify meanings as well as fallacies. Comparisons are made between humanization in architecture and its intentions and those efforts found in work, healthcare and education humanization.

Through the works of two major advocates of humanization in architecture two hypotheses are identified on which efforts to humanize architecture are based today: (a) Architectural humanization is architectural determinism; and (b) Architectural humanization is based on design principles of aesthetics, nature, smallness and houseness. Architectural determinism is exposed here as a false base for design, through a study on high school vandalism and violence.

The architectural principles of design are found valid, although not to the extent proposed by architectural humanization advocates since deterministic speculations are rejected. Aesthetics is viewed as important through man's instinct to decorate; its role in providing human perceptual comfort components and novelty in environmental conditions is defended. Nature has as well an aesthetic affinity and is therefore regarded as pleasant and satisfying, but cannot exclusively provide building users with their extended comfort needs. Conclusions about smallness are favorable, since smallness can add positive functional, perceptual and economic attributes to buildings. Houseness as a design
principle is directly linked to smallness, but is here defended through its permanence value. The house provides us with spaces which have long standing good fit to common human activities. The house as well influences user expectancies with environments and their appeal.

Conclusions on humanization in architecture rest on the lack of an existing theory of architecture with a humanization intent. Issues of both design content and design process are discussed to develop such a theory. Humanization in architecture is viewed ultimately as serious care about users and their needs and pleasures as well as care about the components of physical environments, in functional, technical, economic as well as artistic terms. This lends to the purposes of architecture: the need to create health, beauty and permanence in the built environment while not fixing architectural design exclusively to the arguments brought forward in existing movements towards the humanization of architecture.

Sam Kazd
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INTRODUCTION

Pleas for humanization appear with frequency today in a wide variety of disciplines from the humanization of man to the humanization of his living and working environment, the ways of curing the sick and teaching the young. Such pleas may be related to deteriorations in modern social conditions due to overcrowding in urban situations and population growth, ecology and world economic problems, as well as increasingly conscious attitudes towards the plight of man.

In our study here we will not attempt complete explanations of the phenomena of rising urgencies behind present humanization attempts. We will identify the major themes of humanization efforts in various disciplines with particular emphasis as to their validity in architecture. We shall circumscribe the subject of humanization in architecture especially as it presents itself through the major advocates of humanization in the built environment today.

Humanization as it appears in present architectural literature has imprecisions which by appealing to feeling confuse issues of architectural research. We attempt here to clarify some aspects of the concept of humanization to show in particular that before such terms are fully understood the multitude of statistical studies appearing around the subject are of little help in the development of theoretical speculations in architecture.

Imprecisions begin with fallacies about the word humanization itself. All activity is essentially human. Equally fallacious are frequently used expressions such as 'naturally grown'. The term humanization is not content in appealing to normal human acts, but is colored
by aspects found in humanitarianism and classical humanism. Humanization strongly relates to the concept of humaneness which in turn is linked to enlightenment and compassion (Thelen, 1967, p. 19). Through these concepts humanization relates to the major humanistic movements in Western man's history, the classical and Christian humanism.

Classical humanism, structured from a past renewed interest in Greek and Latin classics, freed thought and life from religious bonds, through the example of the reasonable balance in life rediscovered in the Greeks. A preoccupation with what is characteristically human is humanism's major contribution. A rebellion against the hampering bonds of religion or other social structures turns its attention to nature with Rousseau. His conception of a law of nature, was of a law of human nature. With romanticism the claims of nature, freedom and self-realization found in Herder, Schiller and Goethe influenced such movements as anthroposophism (Cheyney, 1964, pp. 537-542). Connecting humanization to anthroposophism, its view of man in relation to the earth, and the universe; and the consequent dictates for education, architecture and life styles can point to the sources of concepts found in Christopher Alexander's 'patterns'. Alexander is one of the primary exponents of humanization in architecture today and one of the authors and architects we use as a reference source in this thesis. The founder of anthroposophism, Rudolf Steiner, uses principles of health and beauty founded in nature, coupled to an enhanced consciousness achieved through a life style filled with spiritual activities (Harwood, 1968). In Christopher Alexander's treatises we find repeated references to similar terms and intentions.
Kant's critical system that the world of experience as man knows it is the product of his own understanding, is as well an essentially humanistic conception and relates to some tendencies in humanization research on the mind of man, its anthropomorphic components. The limitation of man's understanding is linked to humanism as a school of philosophy and the development of naturalism. It offers explanations of the universe and man's place in it, urging the continuous study of nature as the most useful occupation. We find these ideas not only as part of humanization of architecture but applied to many design methods using examples from nature as creative inspirators (Bürdek, 1975, pp. 90-91).

Humanization growing out of classical humanism gains a nature preoccupation from philosophy, and an aesthetic preoccupation from the refined outlook on life of humanist writers and thinkers, their admiration and imitation of Greek and Latin classics, still the basis of Western aesthetics.

Except for its early enthusiasm for the classics and later nature, classical humanism has not been characterized by intense emotion. Revolt against injustice, cruelty and unnecessary suffering or hardship was a mark of the humanistic spirit. The humanistic belief in the efficacy of education checked social reforms however by entrusting their accomplishment to education alone (Cheyney, 1964, p. 541). Classical humanism lacked the concepts of love, care and humanitarianism, which Christian humanism added to complete modern humanization's intentions. Humanitarian movements direct themselves chiefly toward preventing physical cruelty to men and animals. Efforts seek in addition to make the unhappy happy. Humanization in some cases can be said to go a step...
further by seeking to make the happy happier. Alexander's life style patterns seek happiness, based on proving unhealthy stresses within established, sometimes outwardly happy lifestyles (Alexander, 1972). Similarly Ashley Montagu (Montagu, 1962) in his work on the humanization of man seeks goodness in life through arguments against acquired behavior found in sports, commerce and the 'go getter spirit' of urban life: overcontrolled and lacking privacy. Montagu's arguments are that such acquired behavior, so prevalent in our society, is an unsound conception of human nature. Negative impulses are termed neurotic reactions to frustrations of truly basic needs. They are not seen as basically human themselves. Montagu argues on the other hand however, that man's capability to recognize and rectify his errors constitutes human nature's basic goodness.

One can interpret similarly Alexander's efforts in 'A Pattern Language' (Alexander, 1977) where frustrations in modern life are exposed and a correcting mechanism is established through incremental recognition of error.

There exist evolutionary processes behind the shaping of the concept of humanization, its themes and intents. This thesis however is limited to some extent to two main advocates of humanization in today's architectural literature, Christopher Alexander and Robert Sommer, since they seem to produce major polemics.

As for the general concept of humanization and its development through humanism, architectural humanization has as well not sprung from an architectural stylistic and theoretical void. Humanization in architecture, as it presents itself today, can be linked to the eternal conflict of classicism and romanticism in architectural stylistic devel-
opments. Strong emotions expressed in defense of humanization are a factor of romanticism.

Although Alexander's work can be termed a reaction to pure functionalism and its influences on modern architectural developments, it must be remembered that it was functionalism which set out to have a major interest in man and his needs. Functionalism in this sense therefore may as well be termed humanization in architecture. Functionalism influenced by social sciences increased awareness and pre-occupation with social changes, created however open space planning as well as simplicity, orderliness and a negation of fixed purpose design as expression of the recognized diversified functions of life.

Present efforts in the humanization of architecture have a more rigid form of outlook on design in relation to human needs. Our speculations are that such rigid views as shown in Alexander's 'patterns' in particular are probably influenced by the following factors:

(a) the anthroposophic movement and the general ecological preoccupations present in modern Western society, serious concerns to urgent and permanent solution to the deterioration of man's relation to nature.

(b) a certain elitism present in the profession of architecture, which springs from personal criticism of existing works of architecture, with equally personal judgment as to the ways of improving previous errors.

(c) influence of social science research on architectural theories: where personally chosen principles of design are sought to be defended through empirical studies. Serious human problems are associated with a lack of specific design principles in the built environment.
(d) research on man's instincts in space associated pleasures, where judgment is based on either long standing tradition, or personal preferences of the researcher.

(e) problems associated with accepting social change as a determinant in planning and design have not been accepted.

Criticism of the humanization in architecture movement has been up-to-date on distinct levels:

(a) emotional criticism on the products of humanization in architecture dictates,

(b) theoretical criticism on the methodology of humanization in architecture,

and

(c) criticism on the quality of research presented as evidence in the literature of humanization in architecture.

In this thesis we attempt to complement and enlarge existing criticism particularly in relation to the content component of humanization in architecture. Accordingly we attempt an identification of what is meant by a humanized architecture. In Chapter 1 we identify two major hypotheses underlying present humanization in architecture efforts:

(a) Architectural humanization as architectural determinism, and

(b) Architectural humanization based on fixed design principles.

In Chapter 2 we explore the deterministic components of architectural humanization through the example of high school vandalism and violence problems.

In Chapter 3 we connect architectural humanization to humanization in other disciplines, namely work, healthcare and education, to discover
similarities or divergences in principles and theoretical aspects of such efforts. This discussion leads us to the basic needs theory in social sciences which in turn leads us to the discussion in Chapter 4 of the validity of basic principles of design as proposed in architectural humanization efforts today. Reference is made repeatedly to further school building problems in view of our continuing interest in developments in educational institutions and their housing needs.

Our conclusions embark on the necessary research to develop more coherent work on humanization of architecture, based on the lack of an existing theory of humanization in architecture. We particularly stress the moral component underlying efforts of humanization.

Issues concerning the humanization of architecture are discussed both concerning design content and design processes, to open the way toward the development of a theory of architecture with humanization intent. Humanization in architecture is ultimately viewed as seeking an express sense of care about users and their needs and pleasures and care about the components of the physical environment not purely in economic, functional and technical terms but in artistic terms as well.
CHAPTER 1

A Search for the Meaning of Present Endeavors of Humanization in Architecture

"Everything is in a state of utter dishevelment."
(Wallace's observation)

1.1 Descriptive Aspects of Dehumanization in Architecture

The meaning of humanization in architecture has not emerged directly from the theoretical writing on the subject. Descriptions of what is termed today dehumanization serve in most instances to open the question of what constitutes humanization in architecture. Details of typical high schools in the U.S. are presently characterized by many as dehumanizing, and we shall use a collection of details found in such institutions to depict typical aspects of dehumanization in architecture:

The school has a monumental façade, a large site covered by numerous buildings, surrounded by a paved parking lot and enclosed by cyclone fencing, some of it bent and broken. There are battered trashcans and dispersed litter. On the building walls signs of painted-over spraycan slogans are visible. Landscape treatment consist of containers with meager weeds and litter, existing trees are small or dead skeletons. Internally a myriad of corridors abound or the school consists of an overwhelmingly messy large open space where newcomers are bound to get lost. The interior is filled with the buzzing of artificially lit spaces and the humming and whistling of air-conditioning. Spaces are windowless or the few remaining windows are whitewashed, permanently

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1 All quotes at chapter headings are from: Bloch, (1977), Murphy's Law and other reasons why things go wrong, Price Stern Sloan Publishers, Inc., Los Angeles.
closed and draped. Externally they are clad with bars of heavy wire screening. The interior sometimes has been termed "a precision controlled container where the user cannot find the center" (Weinstock, 1973, p. 50). There are battered lockers lining corridors, termed personal space. There is a lack of variation. Monotony in space, color, detailing and furniture is apparent. Information is not readily available or visible, but under lock and key. There is no way the user can manipulate the environment. Light switches are absent, windows do not exist or do not open. Thermostats are not manipulable. Some fixtures and furniture is chained to floors and walls others are cast in situ. Wall and ceiling materials are such that users get discouraged in decorating attempts. Cold and hard are walls of ceramic tile, bars on windows, chained benches, barbed wire and broken glass on external walls. Any potentially damageable objects are removed, bathrooms are locked and door handles are reduced to one finger hooks. All is unyielding to user imprints, against a graceful weathering through normal wear and tear. There are further signs of dehumanization: overorderliness and sterility and 'good maintenance colors' of brown and khaki.

The ingredients of dehumanization are a lack of specific care in design about each and every building component and a lack of maintenance of buildings. Users as well are not adequately satisfied in their emotional and perceptual needs with regard to environmental conditions.

Expressions such as environment or environmental conditions unless otherwise stressed are used in this thesis as found in general architectural design terminology. The physical elements dictating size, shape, color and texture of spaces; light, heat and sound conditions as well as functional elements of spaces are the principal components defining a surrounding therefore environment. When discussing humanization, however, there are no clear cut definitions as to the elements which constitute an environment in the architectural sense. In the text discussion on aesthetic judgment and architectural determinism, we point to some of the complexities of defining environments.
Overperfection in terms of controlled environments, lack of aesthetics and lack of landscaping, with an overuse of man-made objects, an over-concern for security as opposed to safety and hard versus soft materials are part of the inhuman scene. While the illustration above seems obviously depressing and most visitors to such schools would agree in a judgment of dehumanization, there are peculiarities about such 'gut' interpretations, making objectivism difficult, hindering the building of a theory of humanization in architecture. Taking single materials, ceramic wall tiles or details such as bars on windows, one can cite contrary examples in architecture employing the same materials and elements, but where the result is not judged to be dehumanizing.

1.2 Descriptive Aspects of Humanization in Architecture

Pictorial descriptions of humanization based on opposites related above are equally debatable in the agreement one would find in judging each ingredient used. Descriptions of humanization in schools are rarely as detailed as those of their 'inhuman' counterparts. We seem more adept at recognizing wrongs and visually perceived ugliness than at describing analytically the beautiful, useful and apt. Humanization in high school architecture would entail: "human scale and size, personal territory, spatial variation and order, manipulability, access to information and tools, environmental feedback, optional seating and work surfaces, graceful wear and tear" (Weinstock, 1973, pp. 49-51) care and maintenance, aesthetic concerns in the form of ornament, curtains and potted plants, color combinations corresponding to present tastes and exterior major landscaping in scale with the site and the building.
1.3 Some Aspects of Judgment of Architectural Dehumanization and Humanization

While we judge a school with air-conditioning and 'McDonalds' served in throwaway packaging as dehumanizing, we regard conditions in underdeveloped countries, shantytowns and destruction scenes after natural or man-made disasters differently. Such disparity suggests primarily, that dehumanization is an aesthetic judgment and aesthetic judgment is rarely pure. Morals, beliefs, "Zeitgeist" (the characteristic of an era, the trend determinator) color judgment. Social concerns are sometimes disregarded as social costs are not included in the admiration of the beautiful. We lament that there seems to be some "mysterious link between abhorrence of cruelty and aesthetic blindness and conversely between indifference to pain and squalor and the fastidious enjoyment for beauty." (Huxley, 1967, pp. 187-188). Today dehumanization judgment is not embarrassed by some skeletons in the closet either and puts aside pure aestheticism by appealing to the moral laws of our time, ecology and psychology.

Attending to purely aesthetic judgment once more, we come across the obvious difficulties of a lack of any objective standards in humanization. Architect's tastes are in general those of well educated middle class adults, whose tastes are not necessarily shared by children or other ethnic groups or social classes. Also on purely aesthetic grounds we may reverse our judgment of scenes by shifting our location in space (Lewis et al., 1973, p. 25). Furthermore there exist several reaction choices in human nature to blight or dehumanizing scenes influencing judgment as well as action for humanization: 1) We may run away from the scene in the hope that dehumanization can never touch our lives in a
'far away pacific island'. 2) We may ignore blight through some type of anaesthetizing, by choosing a life as a 'zombie'. 3) We may cultivate a taste for it as a nihilist where nothing is evil in a 'laissez-faire' world, or 4) We may, like present humanizers combat the scenes termed dehumanizing or blight through some analysis and personal conclusions as to ways of change (Ibid, pp. 4-5).

There exists as well the argument that humanizers' attitudes and values induce abhorrence, when the average layman does not feel the same and seems more concerned about quite different problems in his life. Humanizers may actually therefore incur more damage by advertising something as bad, previously quite inconsequential to the layman. Feelings of discontent may be created within people where they did not exist previously; there is some evidence supporting this position (Broady, 1968, pp. 21-25). Caution must be applied both to the beliefs in effects of architecture on layman and the layman's psychology, his own accuracy in judging effects on him (Wells, 1965). Both are based on belief systems, rather than measured effects.

1.4 Reasons for the Active Resurgence of Humanization in Architecture
Today and Conditions in Present Society Favoring Dehumanization

An investigation into reasons why humanization in architecture seems to be more active or explicit now than in other epochs, may shed more light on the problems involved in the establishment of a viable definition of humanization in architecture. A number of conditions exist in present society, favoring the so-called large scale 'uglification' in landscape and architectural design. Dehumanization in architecture is coupled to affluent social condition. Affluence creates increasing durability of things treated as obsolete almost at production
(typical in architecture are hospitals). There exists a climate of a lack of confidence in the future. Man-made ugliness is seen as inherited failure, rather than tomorrow's promises. There exists a great disparity of real taste among various sections of the population. There has been for some time among professionals a general inclination to reject decoration, façades, camouflage, as functionally dishonest and visually banal. Awareness is growing of disjunctions between land ownership and land use and between both of those and community interest. A frequent state of demolition and renewal hampers efforts in salvage and incremental improvement. A sharper tempo of perceived physical change spurs increasing unfamiliarity among adults and a consequential disenchantment, as well as insecurity about man-made decisions. The old saying 'I don't understand anything about architecture, but I know what I don't like' seems less prevalent under such circumstances.

"I don't know anything about architecture, but I know what I don't like."

Fig. 1

Democracy is not without blame in environmental questions. Authoritarian decisions are assessed as unreliable, however decisions turned over
to the people are not always in the best interest in protecting the environment. Politically, democracy and its periodic cleansing has its advantages, the visual environment however does not work that way. A landscape once ruined, a building once built is hard to remove, to improve. American democracy has another peculiar defect, due to its evolution under 'frontier' conditions, where if a thing worked nobody concerned himself with whether the thing is aesthetically pleasing or whether some extraneous effects may arise. In school building design the fear or power of the public voice sometimes leads to extremes where deliberate overeconmic concerns and unattractiveness guide the design to avoid a public verdict of squandered tax-money. A common American myth as well holds, that one ought to be suspicious of things if they are too nice: such things are probably unhealthy or impractical or don't work too well! In school buildings visual comfort is guided by such tendencies in American thinking. New ideas are created for economy, such as the superimposition of functions: 'flexibility'. Security is more important than other comfort needs of users: 'You have to protect the tax-payers money'. Security concerns therefore go beyond the safety of users. Unrestrained application of technology has had its influence on buildings. Previously acquired sensitivity in design to local conditions has been disregarded, 'overcome' by a machine controlled environment. The superiority of novelty and an emphasis on progress have influenced architecture in this century. The Hegelian wholistic outlook has led architecture to believe in the all dominating 'Zeitgeist' of progress. This creates a lack of a conscious tradition, critically reexamined and passed on from generation to generation. The belief in the tabula rasa leads to problems approached without explicit
assumptions or cultural expectations, but with an overconcern for the betterment of man. Architecture as a slave to function has led to the loss of ways of building traditionally fitting man's biological and emotional needs. While such tendencies exist in twentieth century architecture it must be said that none of these movements deliberately tried to create dehumanizing places. Underlying overconcern for some extraneous ideas such a functionalism or beliefs in morality of architecture in creating a 'better man' has led however to designs no longer considered pleasing by either laymen or present critics.

The lack of consciously preserved knowledge in architecture, is shown for example by tracing concerns for orientation of rooms and buildings, a consideration not found in dehumanizing architecture. We discover that such ideas seem to be 'rediscovered' periodically and never seem to acquire the status of an integral part of architects' equipment (Mumford, 1952, p. 12). Renunciation of false historicism and a return to real history of architecture, a restored continuity of living traditions has often been the turning point in architectural concerns and developments. Such phenomena are occurring in the humanization trends today. We see a rediscovery of known design criteria used with positive reactions over long time spans, a renewed sense of the quality of the vernacular and natural landscapes. Renewed emphasis is on domestic architecture in direct relation to the quality seen in the vernacular (Alexander, 1977). As well as domestic architecture (little influenced by architects themselves due to the pecularities of housing markets), there is concern for blight in the public realm, the sounding board of 'humanizers' like Robert Sommer (Sommer, 1974).
1.5 Hypotheses Underlying Present Humanization Efforts

From an analysis of two principal contemporary exponents of humanization in architecture we postulate that present efforts are primarily based on two distinct hypotheses:

A. Architectural humanization as architectural determinism:

From a study of Sommer's work (Sommer, 1969, 1972, 1974) we find repeated reference to physical settings and their influences on user behavior, especially in terms of alienated behavior, crime and vandalism (Sommer, 1974). Sommer makes a good case for the problems encountered in functioning freely in 'hard', fixed buildings of the type described in our opening statements. Sommer is careful, linking effects of such environments to user behavior, although some relationships are pointed out in the sense of blaming vandalism on the ugliness of the environment (Sommer, 1974, p. vi and pp. 1-11). Alexander (Alexander, 1977) has a direct interest in design so it is with him that the first hypothesis, to be explored in present humanization trends, emerges. It is a hypothesis of architectural determinism: that design can cause direct effects on users in terms of their behavior. It is the spirit in which humanization in architecture is proposed today. Architectural determinism is nothing new in architectural theory. It implies a one-way process in which the physical environment is the independent, and human behavior the dependent variable (Broady, 1968, p. 14). Architectural belief systems have relied on architectural determinism for some time (Watkin, 1977; Lipman, 1969). It has led architects such as Bruno Taut to take the stand that: "The architect takes on the task of interpreting the 'needs' of society and by his constructions guides those needs to gratification in an appropriate form of society, namely 'healthy'
socialism (Watkin, 1977, pp. 41-42). Whereas Le Corbusier and others who shared such missionary beliefs also advocated urgency for novelty and change we find Sommer's conclusions sobering, returning to what is and has traditionally been regarded as quite pleasant, namely some decorative elements, greenery, soft and comfortable furniture grouped for the kind of conversations associated with the home, the family and circle of friends. With Alexander in 'A Pattern Language' (Alexander, 1977), and 'The Timeless Way of Building' (Alexander, 1972), we find the hypothesis of architectural determinism directly expressed. The content of 'A Pattern Language' and its ability in securing quality designs has been studied previously by attempting to show patterns as natural design processes (Jacobson, 1972). The results of such investigations are unfortunately not very useful in terms of an investigation of theoretical aspects in humanization, since the author embarks on his project uncritical of beliefs and values underlying Alexander's work. 'A Pattern Language' has as well been investigated by others in terms of the validity of data used. It was shown that much evidence is superficial, incorrect, contradictory or based on the 'consensus theory of truth', where common agreement about right or wrong rules unconcerned over effects on minority disagreement. It was shown therefore that such evidence as used in 'A Pattern Language' cannot be the basis of a theory of humanization (Protzen, 1978). While Protzen can show eloquently that one can and 'must' refute the whole theory of 'A Pattern Language' we attempt to investigate further some underlying hypotheses of Alexander's work. The deterministic hypothesis will be explored to show weaknesses within the architectural humanization movement. Furthermore we will attempt to salvage parts of the collection of some obviously interesting ideas found in 'A Pattern Language'.
In terms of methodology 'A Pattern Language' is based on cause and effect thinking, 'if - then' statements are the basis of architectural determinism. The deterministic hypothesis therefore underlies the whole humanization work found in 'A Pattern Language'. This is further emphasized in 'The Timeless Way of Building':

"The specific manner in which the physical geometry of a place prevents a person from becoming alive is always the same. The person experiences forces within him which conflict, and he tries to resolve them for himself. If the place prevents him from resolving the conflicts he experiences inner stress, he has no outlet for these inner forces, they go underground within him and he experiences stress. For example: in a town where the work and family life are separate, people are harrassed by endless inner conflicts. In a house where children cannot both sleep together and yet be alone, the children experience unresolved inner conflicts which affect their development..."

"There is no other kind of interaction between people and their surroundings..." "The stress caused by failure to resolve conflicting forces is cumulative. Each conflict which remains unresolved no matter how small or insignificant, affects a person's capacity to resolve the next conflict... the stresses pile up cumulatively, the overall effect is catastrophic..." "When a place allows the people in it to be alive, the place is itself alive." (Alexander, 1972, pp. 6-9).

Alexander shows his determinism by referring to architects known to have had deterministic intentions:

"... And the same is true for every architect and city planner: Frank Lloyd Wright, Le Corbusier, Mies van der Rohe have all created their designs by using pattern languages... All design knowledge is in the form of pattern languages." (Alexander, 1972, p. 13).

In 'A Pattern Language' a typical example portraying determinism directly is the Pattern 21 Four-Story Limit, a double star pattern, therefore a pattern where it is believed by the author that a true invariant has been stated (Alexander, 1977, p. XIV). In that pattern it is expressed that: "there is abundant evidence to show that high buildings make people crazy... the underlying phenomena, namely mental disorder and
social alienation created by the height of buildings occurs equally in housing and in work places." Studies referred to are:

(a) D. M. Fanning, 1967, "Families in Flats", where a direct correlation is shown between incidence of mental disorder and height of people's apartments;

(b) D. Cappon, 1971, "Mental Health and the High Rise", showing young children in high rises to be more socially deprived of neighborhood peers and activities, than their single family dwelling counterparts. High rise adolescents are shown to suffer from the 'nothing-to-do' ennui. Mothers are more anxious about their young ones. The elderly are afflicted by a higher passivity in the highrise, saving them from accidents, but shortening their life span through boredom;

(c) J. Morville, 1969, "Borns Brug af Friosalen", showing outdoor play of the young affected by the height of their apartment in high rise blocks; and

(d) O. Newman, 1972, "Defensible Space", where crime rates are correlated to the height of buildings in housing estates. From this evidence it is concluded that a "four story limit" is an appropriate way to express the proper connection between building height and the health of a people (Alexander, 1977, pp. 115-119).

Following is a list of patterns which equally portray degrees of determinism, where it can be shown that a large percentage of the content of 'A Pattern Language' is based on deterministic ideas.

Patterns: 1 Independent Regions, 2 The Distribution of Towns, 3 City Country Fingers, 8 Mosaic of Subcultures, 9 Scattered Work, 11 Local Transport Areas, 12 Community of 7000, 14 Identifiable Neighborhood, 15 Neighborhood Boundary, 18 Network of Learning, 19 Web of Shopping, 21 Four-story Limit, 24 Sacred Sites, 26 Life Cycle, 28 Eccentric Nucleus, 33 Night Life, 35 Household Mix, 37 House Cluster, 39 Housing Hill, 41 Work Community, 46 Market of Many Shops, 53 Main
Gateway, 57 Children in the City, 60 Accessible Green, 61 Small
Public Squares, 62 High Places, 64 Pools and Streams, 65 Birthplaces,
67 Common Land, 68 Connected Play, 70 Grave Sites, 74 Animals, 75
The Family, 79 Your Own Home, 82 Office Connections, 84 Teenage
Society, 86 Children's Home, 87 Individually Owned Shops, 89 Corner
Grocery, 92 Bus Stop, 94 Sleeping in Public, 95 Building Complex, 98
Circulation Realms, 99 Main Building, 100 Pedestrian Street, 107
Wings of Light, 108 Connected Buildings, 112 Entrance Transition, 117
Sheltering Roof, 119 Arcades, 126 Something Roughly in the Middle, 129
Common Areas at the Heart, 131 The Flow-through Rooms, 132 Short
Passages, 133 Staircase as a Stage, 135 Tapestry of Light and Dark,
138 Sleeping to the East, 147 Communal Eating, 165 Opening to the
Street, 166 Gallery Surround, 168 Connection to the Earth, 181 The
Fire, 185 Sitting Circle, 186 Communal Sleeping, 188 Bed Alcove, 190
Ceiling Height Variety, 191 The Shape of Indoor Space, 193 Half Open
Wall, 196 Corner Doors, 197 Thick Walls, 201 Waist High Shelf, 205
Structure Follows Social Spaces, 207 Good Materials, 210 Floor and
Ceiling Layout, 211 Thickening the Outer Walls, 212 Columns at the
Corners, 220 Roof Vaults, 221 Natural Doors and Windows, 224 Low
Doorway, 226 Column Place, 227 Column Connections, 230 Radiant Heat,
232 Roof Caps, 252 Pools of Light.

B. Architectural humanization and design principles

While pattern languages are deterministic whether called rational
or humanizing, they are as well based on fixed rules, ingredients as
principal influences on behavior. The rules, ingredients or principles
among present humanizers, particularly Alexander, seem to rest on four
distinct measures. They are: nature; aesthetics and ornament; smallness
of construction in size and scale and 'houseness': domestic archi-
tectural elements and the vernacular. The second hypothesis which we
will explore is thus that humanization in architecture is achieved
through design based on four principles: nature, aesthetics, smallness
and houseness. It is a hypothesis exploring the "how" of humanization in
architecture. The four ingredients are seen as necessary to create
places termed 'alive' and 'whole' in Alexander and 'soft' or 'humanized'
in Sommer. Design principles have existed throughout stylistic develop-
ments in architecture and individual designers often choose personal
principles on the basis of faith or tradition.
The principles chosen by the advocates of humanization in architecture spring from the renunciation of false historicism and a relook at the real history of architecture, a restored continuity of living tradition, as we discussed previously. The rediscovery of known design criteria which show positive reactions in terms of functionalism and aesthetics lends faith to tradition and the adoption of principles. Sommer is less explicit in defending either hypotheses but uses frequent reference to nature and aesthetics in emphasizing the opposites of hard architecture, as well as arguing repeatedly against monumental-ity in public buildings. With Alexander the reference is more direct. 'A Pattern Language' is an explicit communication of "common" knowledge on specific problems associated with human living, and functioning in cultural and social terms and "being alive". Besides the four principles Alexander argues for the importance of designing and building through modular parts, additions and combinations in order of morphological importance as dictated by sequences of patterns indicated in 'A Pattern Language' (Alexander, 1972, p. 34). We believe that the process of differentiation is part of the principle of smallness. The order of morphological importance of patterns we have not included as a principle in design. It is less an ingredient of designs themselves, than the process of designing. As well it has not been shown to date, that the order of morphological importance of patterns has an important effect on designs using the patterns. No study exists to our knowledge testing various uses of 'A Language', i.e., from front to back, or back to front or completely random application of patterns. The content of patterns rather than their methodological application in design are of interest in this study, to explore the meaning of humanization in architecture.
In the 'Timeless Way of Building', we find reference to the four principles primarily in terms of nature and smallness: "Places which are alive embody nature, they are part of nature..." (Alexander, 1972, p. 10). "The principle of differentiation is common place in nature and must be part of design... Anything which violates this principle will inevitably seem forced and artificial" (Alexander, 1972, pp. 32-33).

Arguing the detrimental effects of mass production we find more reference to smallness and incremental design (Alexander, 1972, pp. 15-17). 'Timelessness' recalls the vernacular. It is based on biological and psychological impulses as well as qualities of traditional building materials. The necessity for aesthetic principles, ornament, a sensitivity for color and form emerges less from Alexander's theoretical writing. It appears directly in the patterns themselves. In Sommer we can see this ingredient predominant in his attacks on ugliness as well as his personal attempts at improving environments (Sommer, 1974, p. 11; pp 95-101).

To show that 'A Pattern Language' is primarily based on the four principles of design of this hypothesis, we have listed patterns according to the principle they are based on or the principle they advocate. The lists exclude those patterns concerned obviously only with 'the House' and those concerned with preservation of nature. Patterns where nature is deemed necessary in conjunction with the built environment are included. For aesthetic patterns we chose only those expressly concerned with applied ornament. The list could be amplified adding those patterns where form configurations and use of specific types of materials affect visual perception, such as 24 Four-Story Limit, 39 Housing Hill, 108 Connected Buildings, 207 Good Materials, 239 Small Panes,
248 Soft Tile and Brick etc. For smallness as well we have excluded some patterns concerned with incremental design, i.e.: 142 Sequence of Sitting Spaces, 154 Teenager's Cottage, 155 Old Age Cottage, etc.

Patterns concerning the principle of nature:


Patterns concerning the principle of aesthetics:


Patterns concerning the principle of smallness:

1 Independent Regions, 2 The Distribution of Towns, 8 Mosaic of Subcultures, 12 Community of 7000, 14 Identifiable Neighborhood, 18 Network of Learning, 21 Four-Story Limit, 22 Nine Percent Parking, 41 Work Community, 43 University as a Marketplace, 47 Health Centers, 61 Small Public Spaces, 65 Birth Places, 70 Grave Sites, 80 Self Governing Workshop and Office, 81 Small Services Without Red Tape, 82 Office Connections, 83 Master and Apprentices, 85 Shopfront Schools, 87 Individually Owned Shops, 95 Building Complex, 96 Number of Stories, 103 Small Parking Lot, 148 Small Work Group, 151 Small Meeting Rooms, 179 Alcoves, 183 Workspace Enclosure, 203 Child Caves, 239 Small Panes, 247 Paving with Cracks Between the Stones.

Patterns concerning the principles of houseeness and the vernacular:

9 Scattered Work, 21 Four-Story Limit, 39 Housing Hill, 79 Your Own Home, 96 Number of Stories, 107 Wings of Light, 109 Long Thin House, 127 Intimacy Gradient, 130 Entrance Room, 139 Farmhouse Kitchen, 142 Sequence of Sitting Spaces, 146 Flexible Office Space, 154 Teenager's Cottage, 157 Home Workshop, 163 Outdoor Room, 164 Street Windows, 168 Connection to the Earth, 179 Alcoves, 180 Window Place, 197 Thick Walls, 200 Open Shelves, 204 Secret Place, 207 Good Materials, 208

No theory of humanization in architecture exists today. However we identified two hypotheses underlying humanization efforts particularly those of Christopher Alexander and Robert Sommer. The exploration of these propositions shall amplify understanding of the meaning of humanization in architecture and direct argumentation toward a reformulation of humanization, its interpretation in view of support or refutation of the propositions studied here. The deterministic hypothesis will be explored in the context of high school building problems in the U.S. The high school was chosen due to dehumanizing aspects regarded by many as common to this building type and grave in its consequences. The high school is a building type in principle unrelated to 'the house' and free of extensive technical considerations which could color architectural analysis, as might be the case for hospitals and factories.

The hypothesis of architectural determinism overshadows the credibility in the design principles and therefore causes, in our opinion, the polemics found in criticisms of present humanization endeavors.

The hypothesis on the necessary ingredients of a humanized architecture will however be explored through investigations on the themes as found in humanization in other disciplines and particularly their validity and richness in the architectural context will be looked at. Empirical evidence as to the principles' real effect on user behavior is therefore not our major aim in that part of our study. No existing theoretical issues are critically tested, emerging hypotheses are explored throughout.
Chapter 2

Architectural Determinism and Humanization in the Context of U.S. High Schools

"The number of rational hypotheses that can explain any given phenomenon is infinite."
(Persig's Postulate)

2.1 Violent Behavior and Achievement Rates in High Schools: Indicators in Architectural Determinism

To investigate architectural determinism, as related to the architectural humanization tendencies today, we chose the problem of vandalism and crime in American high schools, as a behavioral indicator linked to specific school building characteristics. The high school violence problem has been studied extensively in the last ten years due to the increasing seriousness of the problem. Frequently, in general texts on the subject, its causes are seen linked to general environmental conditions the high school building users find themselves confined to. These environmental conditions include not only general learning atmospheres connected to personal relations but include physical environmental conditions.

To investigate general postulates found in the literature, linking high school buildings to violent behavior of users, we undertook a study trying to prove or disprove such direct relationships. Similarly the postulate relationship between violent behavior of high school students and their physical learning environment, can be extended to an investigation relating achievement rates of pupils to physical conditions found in American high schools.
2.2 Problem Definition of This Chapter's Study, Linking Both Student Violent Behavior and Achievement Rates to Specific High School Building Conditions

The focus of the following study is on common elements in school architecture which might be associated with school damage by students. Schools rated humanized, according to the presence of previously discussed architectural elements, are compared with those rated dehumanized, with respect to their vandalism and crime figures. Emphasis is placed on physical variances rather than on factors said to be directly related to school morale: such as the adequacy of the administration, the level of interpersonal relations, situations which arouse strain; or various wholesome factors: such as stability in the school situation and positive parent involvement.

The study is seen as a supplement to data available from many sources on vandalism and violence and their causes, and should be helpful in the development of a theory of humanization in architecture.

A broad hypothesis guiding this investigation is that amounts of physical damage and criminal incidences in a high school are related to the school building: one expects high levels of damage and criminal behavior in schools of dehumanized architecture and low levels in schools with elements of a humanized architecture. We avoid making the amount of damage in a school the function of the school's architecture, due to the complexity of causes of high school vandalism and violence. A second argument arises from the hypothesis above. One expects as well as vandalism, achievement rates to be related to the school building and its degree of humanization, the absence of violence being a factor in creating a positive learning environment. In high schools with a humanized environment we would accordingly expect higher average achievements
by students, than in large buildings devoid of 'coziness', 'beauty' and 'nature'.

2.3 An Evaluation of Some Architectural Deterministic Claims Related to Anti-Social Behavior, as Found in the Literature

The broad hypotheses relate to numerous allegations made on relations between environments and behavior. From such links, theories of humanized architecture are brought forward, where dehumanized environments are said to influence users and subsequent behavior negatively (Alexander, 1972; Newman, 1972).

Ugliness is frequently linked to destructive behavior. Graffiti is the most common type of vandalism shown to prevail in dehumanized environments, devoid especially of the aesthetic principles of architectural humanization. The cat faces on the storm drain outflow covers along the Los Angeles River, the New York subway graffiti and expressway bridges and tunnel graffiti all over the country are termed: "reasonable human response to an ugly and depressing situation" (Sommer, 1974, p. 17).

Criminal behavior is statistically linked to urban ghetto environments and poor housing tenements devoid of privacy, comfort, beauty, gardens and trees. The argument arises that the environment creates alienation from and bitterness toward society, culminating in destructive behavior and crime.

The lack of fit between the environment and the ability by users to involve desired human processes have been studied to show various behavioral problems. Constance Perin in 'With Man in Mind' (Perin, 1970) is an early advocate of a theory of environmental design, based on the sociological and psychological fit idea. She notes in her work:
"that knowledge on emotional as well as physical demands on the environment is lacking adequate vocabulary based on extensive research".

The development of such vocabulary and the testing of her 'theory of human nature' for environmental design are seen through surveys measuring environmental qualities and human consequences such as satisfaction, stress, health and social relations (Perin, 1974).

Stress has been linked to housing quality and its factors of: crowding, dilapidation and high noise levels. Environments permitting or creating social isolation such as high rise apartment buildings are shown to affect the psychological health of the aged. Amounts of space per person and its arrangement to promote or interfere with privacy are related to mental strain in numerous studies (Schorr, 1966; Wilner et al., 1963).

Substantial evidence exists linking poor quality environments with poor health of users. Here the environmental factors are poor sanitation, inadequate minimum space standards, poor electrical connections and inadequate heating and ventilation (Schorr, 1966).

In Newman (Newman, 1972), and his book on 'Defensible Space' we find environmental psychology's principles applied to crime. The features Newman asserts as relating to high crime rates in housing estates are: the lack of territoriality, height of buildings and total size of a project. All three elements are manipulated in Alexander's 'Patterns' (Alexander, 1977) to humanize the environment, although his motives are not explicitly restricted to the prevention of crime.

The problem of size of a building, a principal ingredient of a humanized environment, as identified in Chapter 1, and its influence on violence are discussed extensively in Newman. His data are in line with
one of the hypotheses of this study: that lack of humanization in architecture causes larger crime and vandalism rates.

Most studies mentioned above, relating environment to crime and behavioral problems are in the form of cause and effect relationships. Many surveys can be said to ignore the broad spectrum of causes to such problems, due to their narrow comparisons. Newman's correlations are particularly devoid of attention to social hypotheses, ignoring drug use and social heritage of the populations in various housing estates (Hillier, 1973).

Graffiti surveys often ignore sporadic destructions of great works of art and national monuments (Ward, 1973). Parks, gardens and cemeteries, all harboring the humanizing ideal of nature, have traditionally been targets of vandalism. Poor housing and stress relation studies ignore the statistics of rising crime and data on family conflicts in idyllic suburbs (Newman, 1972, p. 20; Tuan, 1974, p. 239). A further counter example in relation to the achievement rate of students hypothesis can be cited. Comfort and pleasantness in institutions are traditionally seen as influencing the breakdown of order and discipline (Sommer, 1947, p. 8). The puritanical attitude toward comfort would point toward lower achievement rates of students in pleasant and comfortable schools and one would expect great strides from students in Spartan building atmospheres.

In view of existing contradictions about the general argument of this study we avoid a cause and effect study with statistically tested data. Our aim is a broader one, connected to the principles of humanization in high school architecture and the validity of these themes for school building design.
The study is however guided by our belief that yes, design can contribute to the extent of crime in buildings and cause fear in users and no, humanization of high school architecture does not necessarily prevent crime or produce geniuses.

2.4 Background to School Vandalism and Violence

In common usage today vandalism is termed the wanton and willful destruction of property of various sorts, whether beautiful or not. Vandalism is widespread, cutting through all economic levels and social strata. Schools are not the only targets. Previously it was defined as the willful destruction of the beautiful, but today includes anything from railroads, parks and private homes to public lavatories.

In schools, four categories of vandalism must be considered, each with specific damage characteristics and each having its own solution approaches.

(a) Vindictive vandalism: arson in most instances falls under this category. Isolated incidences are difficult to prevent. Intrusion devices and methods of rapid damage detection are common loss reduction methods.

(b) Play vandalism: property is destroyed in the course of activities motivated through curiosity and the spirit of competition. Normal wear and tear is often termed vandalism since maintenance costs can be channeled through special funds. Much damage results from faulty detailing and selection of materials. Loss reduction depends on studies of damage records and careful design based on good communication between school personnel, including janitors and the design team. School authority's attitudes towards buildings expect a school to last mainten-
ance free for a period of more than ten years. This is not a proper
ttitude towards an actively used, lively school.

(c) Malicious vandalism: the vicious, apparently senseless acts,
such as smashing furniture with hatchets, pouring dye or acid in swim-
ming pools, urinating in hallways, igniting paper cups under sprinkler
heads, etc. The subjective feelings which precede such acts include
boredom, despair, failure and frustration. It is significant to note
that in everyday language the escape of such states is expressed in
metaphors of 'breaking out', 'breaking away' etc. (Ward, 1973, p. 49).
Protection and loss reduction ideas include student body incentives,
'pay off systems', where damages are paid by those caught in the act and
money saved over time on the maintenance budget is channeled directly to
student use. Increased leisure time activities offered by schools, more
physical education activities, more student directed art activities to
decorate the school, as well as providing more youth jobs in the school
district have been methods used to curb vandalism of this kind. Other
measures are to turn school buildings into fortresses, using only the
strongest hardware, selecting material to a high degree indestructible,
reducing damageable items and protecting windows and lamps through
screening and bars. The hardening of the environment shows little
supportive evidence of loss reduction. It has been shown by numerous
studies, that there is no such thing as a vandal proof public amenity
(Wilson, 1961; Sommer, 1974). The components of hard architecture are
shown as well to become potential weapons against the buildings and
their users (Sommer, 1974, p. 10).

(d) Acquisitive vandalism: damage is done in the course of ac-
quiring money or property. Locker damage, tampering with doors and
windows are the main losses. Costly equipment is increasingly stolen from schools. Arson is sometimes the ultimate development of a break-in to cover up the crime. Loss reduction methods, apart from attention to drug problems in the district and improvements in the general social conditions of a neighborhood, include a well monitored inventory system of all school equipment, the use of tamper-proof hardware and intrusion alarms as deterrents. A serious thought should be given to abandoning the use of lockers, with alternative solutions to personal private storage spaces for users.

Suggestive alternatives may lie within extensive restructuring of space usage in high school buildings, allocating spaces to stable groups of students for longer periods of time, who would be using the space as a quasi-permanent base while in school.

Vandalism statistics are alarming in the U.S. New York reported a yearly figure of 10,000,000 dollars due to vandalism in its schools (Amoroso, 1977). Such figures are however not always accurate, due to false categorizing and accounting of damages. A typical vandalism report from the Fresno Unified School District, in California, shows the extent of the problem well. In 1973, 18,000 occurrences of damage or loss to buildings, glass, equipment, buses and nonspecific areas amounted to $4,500,000. The total loss recovery in the 23 districts amounted to $432,000, with an average recovery percentage of 9%. Antivandalism measures included the use of fencing, floodlighting, lexan/plexiglass windows, protective screening, burglar alarm systems, security patrols and guard dogs, with additional use of community action committees, publicity campaigns, police and court cooperation. The conclusion of the survey was that no effective means of preventing burglaries and
vandalism occurrences have been developed to date (Fresno City Unified School District, 1973).

Besides staggering vandalism figures, schools report alarming crime figures. The Senate hearings to investigate juvenile delinquency noted that "the number of American students who died in the combat zones of the nation's schools between 1970 and 1973 exceeds the number of soldiers killed in combat through the first three years of the Vietnam conflict". In addition, literally hundreds of thousands of students are assaulted each year in schools across the U.S. (Senate Hearings, 1976, p. 2). The picture has not improved since then. Homicides, suicide and accidents were reported as the leading cause of death of 15 - 24 year olds in the U.S. in 1978 (Williams et al., 1978, p. 53). Newspapers report almost weekly killings of students or teachers in schools. The violence problem is seen as the gravest problem facing the American schools today. No value dollars can be placed on violence and the resulting climate of fear.

Standards on achievement have been dropping over the years in the American high school and with this, expectancies from students have been lowered in many schools. A climate of reduced drive toward high achievement may be a cause of today's encountered loss of a sense of direction among many U.S. high school youngsters. They begin to drift academically and socially, causing a decline in academic performance and a corresponding rise in school dropouts and juvenile crime rates. Frustrations and pressures generated at home are said to cause the destructive and violent behavior of students. Parents are seen as a major component of the problem since they are mainly responsible for the beliefs, attitudes and convictions passed on to their children.
Discipline is seen as the major long-term solution to these problems. School building security follows as the next major item in dealing with vandalism and violence. Student involvement, parental responsibility, police-school liaison programs and alternative schools are all methods employed to curb the rise in violence.

A cheerful environment is however also mentioned in comprehensive reports on the problem of violence in schools. The reasons given are: "young people respond positively to cheerful environments" (Moorefield, 1977, p. 11).

2.5 Factors Linked to the Violence Problem in High Schools

While we are setting out to clarify such beliefs, vandalism and violence in high schools have been linked to various factors in numerous studies. Low socio-economic status, high instability or transiency in the community, and change and instability in the school situation have been related to some extent to school damage. A low level of personal identification with the school and its goals among students, teachers and parents was found directly associated with destructive behavior among students. High damage schools were characterized by inadequate administrations and leadership as well as by poor communication among various members of the school. General low levels of morale prevailed in such schools (Goldman, 1959). The Goldman study saw roles of leaders and values in the school as major factors towards the alleviation of strain. Change on the whole was seen as a negative factor in the high school situation, a conclusion in contrast to many educational proposals for free and flexible schools, where change can evolve unhampered by traditional structures of administration and architecture. Goldman's
findings would tend to expect a higher rate of vandalism in open plan schools, where change potentially occurs frequently.

While the Goldman study seems comprehensive, equal attention should be given to the work of Desmond Morrow on discipline (Morrow, 1967). According to Morrow there is no inevitable or universal connection between low esteem of education and obstructive classroom behavior, or between poor living conditions and negative attitudes to school. In the emergent societies it is the very presence of poor social conditions that engenders a passionate thirst for education as a means of betterment. Nevertheless, Morrow points out, there is evidence which suggests that the influence of values and norms in the home in relation to homework, grades, and studying, without disturbance, is often unfavorable. The home, however, is best understood in its social setting, hence in thinking about discipline it is essential to consider general behavior in terms of background and neighborhood (Morrow, 1967, p. 77). Context is seen not as a cause per se, but as sociological awareness to particular problems. The following passage from Morrow summarizes well the question under discussion:

"The various strands of the thesis that adolescent delinquency and irresponsibility are products of tensions in society rather than of the results of the endocrine orchestra bursting into symphonic disharmony, require critical examination. It may be that were anthropological data complete we would find cases of adolescent segregation and low status without intergenerational conflict. Moreover, long before any system of compulsory education, Autoclycus could still point to adolescence as a time of turbulence and conflict. Accordingly, it would be unwise to accept too readily any single aspect of the social structure as the major determinant of adolescent unrest. A microscopic analysis indicates the variety of social factors at work. The presence of more permissive attitudes; the diminution of deterrents; the break-up of the extended family; the malaise of the new housing estates offering few legitimate outlets for "detribalized youth"; exhortations of advertisers to parade conspicuous status symbols; the instability of our moral codes and decline in church attendance, together
with the blandishments of mass culture, all require detailed consideration in a society characterized by impersonal economic relationships of bureaucracy and technology." (Morrow, 1967, pp. 129-130).

Further studies should be evaluated in view of such sobriety. Graffiti, a particularly widespread vandalism phenomenon, has been studied extensively. Motivations are not only seen as a serious quest for identity, or a means of expressing suppressed political or social messages, but also to satisfy a need to escape to a world of fantasy and play. Graffiti has become a game of wit and humor, nonetheless annoying to custodians and school administrators (Bono, 1976, pp. 90-91).

2.6 Achievement Rates

Achievement rates of students are obtained via numerous methods and tests, still the broadest standard of educational achievement used nationwide is the College Entrance Examination Board's Scholastic Aptitude Test (SAT). In 1977 the average scores were reported to have fallen since 1962. As measured on the SAT's 200 - 800 scale, average verbal ability has accordingly fallen by 10% to the 430 level, while average mathematical skills have declined by 6% to the 470 level. These figures also revealed that even the number of high achievers on SAT tests, those scoring over 600, has been dropping (Swan, 1977, p. 30).

Causes of declines in achievement are not entirely understood. Recent infiltrations of money and technology into the high school took place at the same time that rates started dropping. Vandalism and violence increased drastically during the same period. School buildings were refurbished and new designs experimented with. The open plan high school for team teaching methods was developed. Even the Vietnam conflict and Watergate could be cited as influential on the climate in
education. Achievement rates in California in the year of 1976 to 1977 showed the following summary findings:

- Schools with low percentile rankings generally showed a decline in scores between 1975-76 and 1976-77, and those ranking very high showed improvements within the same period.

- Schools with lowest concentration of bilingual students scored higher than those with the highest concentration of such students.

- Schools in large urban areas scored the lowest, those in small and medium sized communities scored the highest.

- Relatively large schools tended to score higher than small schools.

- Twelfth grade students in high school districts scored higher than those in unified school districts.

- Schools with large percentages of students whose parents were receiving benefits under the Aid to Families with Dependent Children (AFDC) program, scored lower than those with smaller percentages of such pupils.

These results were obtained by administering not the SAT test, but the Survey of Basic Skills, i.e., the new California test and three other tests: the Iowa Test of Educational Development, Test of Academic Progress and the Sequential Tests of Educational Progress (Student Achievement in California Schools, 1978, p. 137).

Falling achievement rates have been related to increases in student absenteeism. Attendance rates in turn have been related to: school size, with larger schools showing lower rates; to percentage of state required courses offered as phase electives, with more courses offered
showing higher rates; and to the degree of urbanization of the school's neighborhood, with less urbanized areas showing higher rates. The school size hypothesis in relation to achievement and attendance thus shows contradictions (Wright, 1976).

2.7 Environmental Factors and Education

School size has been a frequent object of studies. Barker in 'Big School, Small School', treats this subject via the 'behavior setting' methodology. A 'behavior setting' being the persisting extra individual behavior phenomena, observable year after year (Barker, 1969).

In Barker's 1964 study the high school showed no "affective behavior", no "expressed emotionalism" and no "active movement of the large body muscles" in the classroom situation (Barker, 1964). In his 1964 study comparing school sizes, he shows that psychologically necessary behavior components are drastically reduced in large schools. A decline in importance in the individual's array of "behavior setting occupancy" when schools grow in size, was also remarked upon.

Other studies have related school size and classroom area to: student involvement and self concept, showing negative correlations between student participation and school size; and between felt efficacy and school size (Rosenberg, 1972). School size has been related to college success (Brown, 1971); to deviant behavior and its teacher management (Rosenfeld, 1968); to teacher morale and characteristics (Hussein, 1968), (Zinser, 1967), (Patterson, 1964).

While some authors argue for smaller high schools, with a pupil population of 700 to 1000, to increase communication and educational effectiveness (Turner et al., 1970), other studies show no concrete evidence on larger chronic absenteeism, socialization and cost problems,
and unmanageable behavior in larger schools (Hickox et al., 1973). What most studies indicate is that size in combination with a myriad of other factors has some effect on output measures. Size per se is therefore not necessarily the crucial factor.

A review of the literature connecting school environments with behavioral, emotional or educational problems, indicates the following potential attributes. Factors affecting physiological performance, such as climate, lighting and acoustics have been extensively researched. Color has been studied for its psychological as well as physiological effects. Posture patterns aided or restricted by design have been linked to learning. Studies on windowless classrooms embark on psychological effects on education rather than purely physiological effects (Bartolomew, 1976).

Design factors, such as compact versus campus type schools have been related in Hereford, 1963, to interpersonal interactions among school personnel, as well as attitudes towards self, school and school building. The results of the Hereford study pointed again to size as a determining factor, while no proven evidence was shown to support a contention that design is a major factor in interaction and attitude (Hereford, 1963).

Open plan schools have been extensively surveyed for their effect on acoustics, distraction and privacy. Reports indicate no special concern regarding these factors. Conventional schools however were also shown to be devoid of problems of this nature (Brunetti, 1972). User activities studied in open plan schools showed them not to differ significantly from those in conventional schools, where one study favors spaces for 13 - 20 students accommodating normal school activities best.
Activities were however not evaluated as to their potential for learning (Durlak, 1972).

Lastly coping and adapting processes of high school students have been linked to the school environment. Compact multistory heterogenous designs showed to favor social contacts and therefore growth in social competence (Kelly, 1972).

2.8 The Project for a Study Linking the Extent of Architectural Humanization of High Schools to Rates of Violent Behavior and Achievement of its Users

The two hypotheses guiding our study of this chapter divide the research into three parts:

1. Establishing the level of violence in a school by collecting data on:

   discipline problems,
   vandalism: types and extent of problem
   violence: types and extent of problem.

The data is viewed against the school security system.

2. Establishing the average achievement rates of the graduating class of 1977:

   the percent of students who took the SAT test
   and their average mathematical and verbal scores.

3. The school building is analyzed for the presence of design elements identified in Chapter 1 as essential ingredients to humanize architecture:

   'Houseness': domestic architectural elements;
   'Smallness': size of building, and scale;
   'Nature': landscaping, quantity and scale;
   'Aesthetics': color harmony, materials, decoration.
For a more comprehensive analysis we also recorded and evaluated the following design elements, frequently mentioned in the literature as to their effects on humanizing architecture.

- entrance types: number and uses;
- hallways: width, length, windows, furnishing and uses;
- windows: view, type of glass, uses and sun problems;
- walls: materials, colors, and uses;
- furniture: type and arrangements;
- lavatories: location and maintenance;
- provisions for order and cleanliness: shelving and waste receptacles their amounts and location;
- outdoor areas: location, shape, orientation and uses.

To place the data into its context we collected data on the age of the building, the socio-economic background of the student population and its racial mix. Dropout numbers and the average daily absenteeism figures were obtained for each school. Teacher morale and information on changes which occurred in the school in the last two years were solicited in conversation with the principal of each school. Questions dealt with satisfaction levels with the school building environment and with specific complaints, dissatisfactions or missing elements. Further satisfaction levels were requested from students questioned randomly within the school grounds. (In Appendix 1 we have included a list of topics of questions asked informally in each school.)

With the three types of data obtained, each school was classified according to a high, medium, low or zero level of violent behavior. The achievement rate of each school was represented directly by the data on SAT scoring. Each school further obtained a building rating of humanized, nondescript or dehumanized environment. The data can then be compared to show eventual relationships the literature on humanization alluded to. We avoid using statistical tests - since we are dealing with possible relationships only and not cause and effect measurements.
2.9 The Schools

Nine high schools in the San Francisco East Bay Area were visited. (In Appendix 2 we have listed the schools including descriptions of the buildings and grounds of each school.) Selection was made after separating all schools in that area into 3 groups: the small schools (S1) with up to 700 students; the medium schools (S2) from 700 to 1500 students, and the large schools (S3) from 1500 students upward. It was found that both the small and the medium groups represented few schools in that area so that representative examples are in insufficient number, for statistical comparisons. We further selected schools according to their location, obtaining a cross section of schools in urban areas (L1), low-socio-economic suburban areas (L2), and high socio-economic suburban areas (L3).

The schools visited fell into types of buildings, each with its own characteristics:

**B1 castle type**: multistory, imposing façade, double loaded corridor plan;

**B2 fortification modern**: windowless façade, turned inward, plan can be various, one or two story;

**B3 low key type**: open plan or conventional plan, one story, compact building;

**B4 campus type**: isolated buildings in garden setting;

**B5 barracks type**: one or two story isolated buildings in car park or paved area setting.

The descriptive names refer less to plan type configurations of each school, than to the overall image aspects of school architecture.¹

¹For some representative examples refer to the illustrations (2.12) at the end of this chapter.
In "High School Building Design in Relation to New and Changing Teaching Methods and Their Goals" (Knatz, 1970), we separated high schools into seven types, according to their plan configurations and their student grouping possibilities. These distinctions were useful for the study of high school building flexibility; the descriptive ordering above allows discussions of less functional aspects of school architecture, its humanization.

2.10 The Results

The purpose of the study was to find a correlation between the humanized aspects of a high school building and its users' behavior, expecting less violence and vandalism in humanized school buildings. Equally we expected a correlation between the achievement rates of students and the school building: the more humanized the school building environment the higher the achievement rates ought to be. No such clear relationships can be drawn from the studies results.

A. Vandalism and crime rates, their relation to school building humanization

All schools reported minor or medium levels of crime and vandalism rates. Being a subjective measure, the levels must be viewed as influenced by the image administrators try to preserve of their school. Vandalism except for one case of arson was not visibly evident. Neglect would be the term to use, where lack of trash receptacles and their placement as afterthoughts give the school scene a domination of litter. Although a number of schools reported incidences of arson, heavily weighing on the cost of vandalism, no major rates were stipulated by the principals of the schools. Even though most schools reported incidences of assaults, narcotics, burglaries, fights and weapons possession in the
form of knives and sticks, no administrator classified the crime rate as medium or major.

Designations of buildings into their categories of humanized, nondescript or dehumanized environments posed more difficulties. Data contradicted itself. Administrators' judgments of whether the school operated in a humanized building, was often colored by personal complaints about poor communication or inadequate administrative offices. We therefore classified the buildings strictly according to the presence of previously identified aspects of humanization of architecture. Only two buildings could be classified as humanized, three schools were determined dehumanized with the remaining four falling in the nondescript category.

<table>
<thead>
<tr>
<th>SCHOOLS</th>
<th>BUILDING TYPE</th>
<th>SIZE</th>
<th>LOCATION</th>
<th>VANDALISM RATE</th>
<th>CRIME RATE</th>
<th>BUILDING CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>minor</td>
<td>minor</td>
<td>nondescript</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>medium</td>
<td>minor</td>
<td>dehumanized</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>minor</td>
<td>minor (1973 arson)</td>
<td>nondescript</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>medium</td>
<td>minor (1977 arson)</td>
<td>humanized</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>minor</td>
<td>minor</td>
<td>dehumanized</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>minor</td>
<td>minor</td>
<td>dehumanized</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>minor</td>
<td>none</td>
<td>humanized</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>minor</td>
<td>minor</td>
<td>nondescript</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>none</td>
<td>none</td>
<td>nondescript</td>
</tr>
</tbody>
</table>
With such middle level results no clear relationship forms. The two humanized schools reported medium and minor levels of vandalism, as did the dehumanized schools. The only school reporting no vandalism or crime, had a nondescript classification of architecture but was the one school of size S1. We reject on such inconclusive evidence attempts to formulate a humanization of architecture theory, a theory based on the universal effect of the physical environment, as manifested by aggressive behavior of protest.

B. Achievement rates and their relation to the school building humanization

Achievement rates as average score figures of the SAT tests, were not available in every school. Data was based on the percentage figures of how many students take the test and therefore seek higher education only.

<table>
<thead>
<tr>
<th>SCHOOLS</th>
<th>BUILDING TYPE</th>
<th>SIZE</th>
<th>LOCATION</th>
<th>ACHIEVEMENT RATE %</th>
<th>BUILDING CATEGORY</th>
<th>ABSENTEEISM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>40%</td>
<td>nondescript</td>
<td>low</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>43%</td>
<td>dehumanized</td>
<td>medium</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>40%</td>
<td>nondescript</td>
<td>low</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>40%</td>
<td>humanized</td>
<td>low</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>22%</td>
<td>dehumanized</td>
<td>medium</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>22%</td>
<td>dehumanized</td>
<td>medium</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>52%</td>
<td>humanized</td>
<td>low</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>75%</td>
<td>nondescript</td>
<td>zero</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>10%</td>
<td>nondescript</td>
<td>medium</td>
</tr>
</tbody>
</table>
Achievement rates do not break evenly over architectural classifications. Both humanized schools report around 50% levels of seeking high education. The highest level in terms of achievement can however be found in a nondescript school located in the highest socio-economic level area. One should note too, that the smallest school (9) had the lowest achievement rate percentage, although having a fairly pleasant, not spectacular building and a very rich school district in terms of resources. The lower rates of achievement can be associated in two schools with a dehumanized school building atmosphere.

Isolated correlations do not represent a conclusive picture, so that we reject a direct relationship proposal between achievement rates of students and high school building humanization.

2.11 Conclusions

We were careful not to treat this study as a social science cause and effect relationship of physical determinants and behavioral consequent. Humanization of architecture literature infers such relationships. Universal theories of behavior and environment, the conjectures from Chapter 1, are seen as simplifications of the phenomena of school violence and achievement rates in secondary education. Social factors hypotheses to explain behavior and achievement show better and richer correlations than physical factors hypotheses do. Rejecting the tight relationships of our study's hypotheses, we view such arguments as a list of items to look at only in design.

An in-depth study of building design, detailing and material specification is recommended to eventuate reductions in play vandalism and to alert school administrations to particular and common trouble areas in schools. However for the purpose of theoretical speculations on the
humanization of architecture the value of deterministic surveys has not been established. We argue that establishment of a theory of humanization of architecture lies beyond the collection of such items.
2.12 Illustrations

B1 Castle Type Schools

Exterior:

(Many of these type of schools have been replaced by newer structures, due to their earthquake hazards.)

Interior:

(Note the recently painted student murals in this typical school corridor.)
B2 Fortification Modern Type Schools

Exterior:

Fig. 4

Interior:

Fig. 5
Fig. 6

Fig. 7
(Note lack of aesthetic elements, and inadequate provisions for trash receptacles.)
B3 Low Key Type of Schools

Exteriors:

Fig. 8
B3 Continued

Exteriors:

Fig. 9
Interiors:

Fig. 10
(Conventional double loaded corridor plan).

Fig. 11
(Note the rare provision of decorative elements.)
Fig. 12
(Note use of 'hard' materials and 'institutional' easy to clean colors.)
Open Plan design: Media Center. (Note the recently painted student mural.)

Open Plan design: Classroom area. (Note effect of provided exterior windows is negligible, only their exterior effect seems of value, see Fig. 8.)
B4 Campus Type Schools

Exteriors:

Fig. 15

Fig. 16
Interiors:

Fig. 17
(Note that exterior attention to visual impact is mostly absent on the interior of school buildings.)
Fig. 18

(Note: windows are often white washed and 'institution' type of furniture prevails.)
Fig. 19

(Note: lack of congruity between exterior and interior design was common especially in campus type schools, see Fig. 16.)
B5 Barracks Type Schools

Exterior:

Fig. 20

Interior:

Fig. 21
Chapter 3
Humanization of Work, Healthcare and Education

"Spend sufficient time in confirming the need and the need will disappear."
(Perter's Prognosis)

3.1 General Aspect of Investigations Toward Humanization

Common aspects of dehumanizing environments and concepts of humanization in architecture have been identified in Chapter 1. Efforts to humanize are primarily based on cause and effect models, where credibility for physical causes is weak, due to better associations found in social phenomena. Most disciplines have sought relationships between efforts to humanize and behavior of the affected. In architecture we have rejected such simplistic direct relationships and their deterministic conclusions. In other disciplines, primarily humanization of work, healthcare and education issues related to behavioral factors lead to deeper psychological and philosophical considerations. Due to the complexity of such considerations final deterministic resolutions are found less frequently in these disciplines.

Discussions on humanization are frequently hampered by a lack of unity over the meaning of both dehumanization and humanization. Favoring humanization over dehumanization can be said to be a common concern. Accepting degrees of dehumanization relies on whether conflicts exist between intentions and executions in social undertakings. Paradoxes in healthcare and education, being intrinsically human enterprises, cause uncomfortable conflict, while dehumanizing public transport or even work places are more willingly accepted (Geiger, 1975, p. 11). General
criticism of humanization endeavors centers on the overconcern with omissions of care rather than on global humanitarianism.

3.2 **Humanization of Work and Workplace**

Humanization of work and workplaces have been particularly criticized. Crisis stimulated, when economic losses occur through worker dissatisfaction, they have been termed inauthentic. Humanization of work centers on the importance of work in our society, economically, socially and psychologically. Suggestions for humanizing work have included the creation of new reward systems, putting greater emphasis on communication and participation in decision making, improving the fit between the worker and his environment and altering various aspects of job design, known to be associated with high job dissatisfaction (Heisler et al., 1977, p. 86). In general the problem is not a paucity of plausible and worthwhile suggestions but rather how to overcome the barriers which stand in the way of implementing each suggestion and how to evaluate their effectiveness. In the case of the Volvo plant humanization a heavy increase in absenteeism forced a complete revision of 'on-line' production, creating a group work concept, including the technological development of a flexible carrier which permits not only flexible timing and movement of assembly work but permits work to be carried out in correct and comfortable working positions (Lotus 12, 1976, p. 25). While this has improved factory work to some degree it is only possible apparently with fairly highly educated populations.

Women, increasingly part of the workforce, have influenced the quality of working environments, particularly in respect to its cleanliness and noise and the determination of the hours to be worked to facilitate household management in conjunction with industrial production
(Lotus 12, 1976, p. 21). Such aspects of work place improvements are valuable, others however could be termed palliatives. Gained free time from flexible working arrangements in factories can still only be spent in company cafés, frequently serving only to instantly restore the will to work while still separating the worker from the pleasure of family life. The clinical separation of the reality of work from the pleasure of life shows the preoccupation of modern work with abstract linkages rather than concrete adjacencies. Through the opportunism of dislocation the so-called "abstracts of exploitation" are said to be kept open and intact (Lotus 12, 1976, p. 40). Cleanliness, tolerable acoustics and healthy air are common concerns in work-place and general architectural humanization efforts, they are less controversial due to their effects on public health, a measurable and important social survival value. Even so, such concerns have not had the impact of universal acceptance of need and implementation.

In office and factory design, aesthetics have been part of efforts to humanize the workplace. The impact is however less convincing in significant user humanization terms, than in company image terms. The concept of care and the associated Hawthorn effect have had wide application in workplace manipulation. While the value of caring seems to intrinsically underly the concept of humanization, it could be termed palliative in workplace improvements, where the Hawthorn effect is used to increase production and profit. Psychological behaviorism applied widely in humanization efforts for justification of certain measures, as seen in studies on effects of windowless environments, is used in workplace studies, to reinforce resulting behavior, positive to production.
Smallness, a theme of humanization already identified in architecture, rarely appears as a suggestion to humanize the workplace. Schumacher and Alexander however see it as a major necessity to bring renewed meaning to work as well as to solve economic disparities (Schumacher, 1973; Alexander, 1977, pp. 51, 222, 398, 432, 702, 712, 737). Arguments for smallness are convincing, implementation nevertheless remains a romantic dream in the modern industrial set-up. The nature component of humanization of architecture appears in work humanization as an image camouflage. We speak of industrial parks which are primarily associated with consumer products. Rarely are industrial or office complexes set in pleasure gardens to be used, but in bleak settings of an arena of deliberate isolation where saplings produce some aesthetic effect, insufficient to create an overall amenity out of the building and its site. The physical and psychological inaccessibility of immediate exterior spaces is not only created through lack of physical connections but through lack of amenity in the landscape treatment in most workplaces.

In work reorganization we probably find the most revolutionary ideas experimented with, an example being Volvo, emphasizing that authoritarianism has been the cornerstone of the factory system since its inception (Heisler et al., 1977, p. 170). Interest in change, shown by managers is influenced by labor unrest where quality and significance of work will more likely be tempered by employment levels rather than real humanitarianism (Berg, 1974, p. 15).

3.3 Humanization of Healthcare

Efforts in healthcare humanization seem more authentic in their intention even though less commanding in their practical application.
Dissatisfaction with healthcare is generally expressed through 'gut interpretations' relying on impacts of illustrations. To put attempts to humanize healthcare into practice and to measure levels of care, some researchers use indicators of: the extent of interruption of relationships between patient and providers, the use of signs and the comfort of the environment (Howard et al., 1975, pp. 57-91). Signs and comfort connect directly to issues in architectural humanization. Discussions in healthcare are hampered however, by a lack of definition of real comfort in public settings. Signs, often used to show impersonality in institutions, are disputable as real indicators. In any public place knowledge of the environment is naturally variable. Architectural clarity and simplicity can alleviate disorientation. In a strange setting however users are concerned with information and it is doubtful whether they are happier if a human being provides information orally. If signs are necessary because of crowding and difficulties of individual attention, it is the crowding rather than the signs that are dehumanizing (Feingold, 1975, p. 113).

Advances in technology in the healthcare system have come between the patient and his needs as a psychological being. Technology and reductionist science can be accused of fragmenting the whole person, denying equality of status, blocking shared decision making and limiting freedom of action (Geiger, 1975, p. 27). The fragmentation of the whole human into treatable compartmentalized parts is one of the most obvious factors contributing to dehumanization. Information about the biological substratum, the process we share with other forms of life is applied solely, ignoring what is uniquely human or related to groups of humans (Geiger, 1975, p. 26). Disparity of knowledge of physiology versus
sociology and psychology influences the treatment of people in hospitals as: things, as machines, as guinea pigs, as lesser people, as isolates, without option, having to interact with 'Icebergs' in static, sterile environments (Howard et al., 1975, pp. 61-66).

Better understanding of sickness, birth and death should underly all efforts to humanize both the environment and the human relationships to care for these states. When people become ill a self-dehumanization process occurs through human stress reaction. The salience of pain and of all sorts of distressing inner cues involve psychological changes, creating a sense of separation between the conscious and the bodily self. This separation is said to provide the ground work for perceiving oneself as an object or a thing (Janis, 1975, p. 163). Acknowledging this state persisting in illness should direct healthcare personnel to give attention to psychological issues coupled to the necessary purely medical issues. The time factor of additional attention given to eliminate disruptive ambiguities and misconceptions about a disease all weighing on the psychological state of a patient is an important factor to consider in putting humanization into practice. Personal interaction, a type of "buddy system", between doctors and patients can be supported by some time saving devices such as video tapes with correct accounts on diseases, but must rely mainly on direct interaction with patients. Sources of humanization dealing with interpersonal relationships are proposals for: patient relationships with a group of doctors, the development of new health careers, the rejection of the concept of illness as social deviance, the definition of health care as a right, and the formation of consumer groups to participate and share control with practitioners (Geiger, 1975, pp. 33-55).
With all good intentions, and treatment of patients as wholistic selves with inherent worth, sickness in the hospital setting is bound to suffer from the psychological effects of separation from family life and the impact of technologically supported treatment. The assumption that families and household groups represent strong centers of humanizing influences in our society has motivated the reconsideration of the home as the place to deliver various health care services (Kennedy, 1975, p. 190). Basic arguments against home delivery are: 1) inconvenience to physician or nurse, 2) lack of access to equipment and supplies, and 3) poor utilization of the time of health professionals because of the need to travel. If as a means to humanize healthcare one is serious about the proposal for expansion of home services then one must overcome and cope with these objections (Kennedy, 1975, p. 193).

Death from non-accidental causes and birth, being natural states have been frequently discussed as belonging in the home rather than the hospital. The importance given to the 'houseness' or homeness humanization concept seems to be less linked to physical aspects of the house, although the familiarity of the setting and its 'coziness' is often inferred in discussions. Home care is associated with the ease of providing familiar, personal, nurturing relationships in a private setting, to the patient and to the ease of personalized care possible in idiosyncratic terms of food, privacy, entertainment and scheduling preferences.

The dehumanizing effect of bigness of typical hospitals is influenced by the so-called 'tyranny of technology' as is the absence of choice to be sick at home or in a hospital setting. Very little is known about the optimal size range for organizations that provide human
services. The discussion on school size pointed toward the few suggestive studies of value in this respect. Barker's (Barker, 1964) high school research seems until today the most comprehensive and reliable source of information on size applicable perhaps to hospitals and other institutions as well. Smallness is a more common theme in school reform, but studies to clarify the issue of what service load is in the best interest of consumer clients and the general welfare of society, repeatedly recommend smaller, better distributed healthcare centers, to reflect the value of early diagnosis, preventive medicine and readily accessible ambulatory care (Lindheim, 1975, p. 293).

Nature and aesthetics are rarely mentioned in healthcare humanization attempts. Predominant attention is given to types of care and interpersonal relationships. Nature and aesthetics are psychologically the more powerful ingredients of architectural humanization. It is therefore interesting to speculate on the lack of attention shown to these two concepts of humanization of architecture in the healthcare setting. We suggest that researchers in healthcare humanization are less concerned with image packages, as was found in workplace humanization. The concept of aesthetics is included in their global concern for comfort. The lack of attention to the nature concept may be due to several factors: 1) the priorities of other salient factors, principally those of human interaction concern, 2) that nature has shrouded many terribly dehumanizing conditions associated with isolated mental hospitals in park settings, 3) that the concern for nature is contained in the development of care choices outside the hospital for the natural processes of life, especially birth and death. Houseness can show advantages in operational terms of humanizing healthcare, the ingred-
ients of aesthetics and nature however are less palatable for institutions traditionally preoccupied, as is industry, with efficiency, economy and the additional concern over hygiene and sterilization.

3.4 Humanization of Education

School reform has been a permanent preoccupation since the birth of schools, due probably to the up-to-now non-deterministic nature of learning and social changes exerting influences on behavior. While workplace and healthcare humanization are influenced by technology, exact and biological sciences, the schools' connection to these disciplines is less tenable, although inferred in many reform attempts. Change for the sake of change is often coupled to industrial and agency efforts to produce instruction systems, promoted by self-style innovative groups lacking evidence of learning improvements (Hamilton et al., 1969, p. 1).

As in other humanization efforts schools use the building environment as an indicator of its degree of dehumanization, while discussions concentrate on interpersonal relationships, behavior of teachers and staff, the possibility of individual student attention through school size, discipline, curriculum breadth and scheduling procedures. Attention shown to the physical environment in humanization efforts has curious connotations. We showed the physical environment to have little responsibility for dehumanizing behavior. Interest in architectural modifications seem coupled to the following issues: 1) the ease of producing visible change, producing a behavioral Hawthorn effect through newness, and 2) the inauthenticity often present in changes where traditional set-ups are left unaltered through habit, fear and difficulties in managing behavior changes.
Proposals for education, be they for changes in the organization, curriculum, classroom practice and staff behavior modification are generally tested on the quality of the people affected by it (Monen et al., 1969, p. 8). Presumptions of this nature are valid in goal and research terms providing efficiency measures for proposals, but ignore influences outside the school on behavior. The difficulties of isolating influences from within and without the research control, affect most teacher effectiveness and learning climate studies. Teacher effectiveness research before 1960 can in general be summarized by a hypothesis "that nothing seems to make any difference". The exception being still Barker's (Barker, 1964) high school size study with its very comprehensive and directly applicable data, demanding no forced behavior changes of staff or students. The lack of attention shown to the Barker data, except for occasional mention in the literature, is therefore all the more puzzling. Is it that school systems do not want to change? Or is it that a lack of common sense prevails? - with a preference shown for behavior modification, promised by many change programs and their innovative appeal. Newness relies solely on the Hawthorn effect, without long lasting repercussions or necessarily humanitarian concern or other improvement goals.

Since 1960 we find educational research and its findings to be somewhat more productive. Better methods of systematic observation of the classroom are to some extent responsible for better results (Soar, 1969, p. 57). Current findings on the relationship of teacher behavior to pupil growth shows that in general a more indirect, more open, more supportive style of teacher behavior does increase pupil growth (Soar, 1969, p. 75). In addition the increased growth goes beyond subject
matter and includes more favorable attitudes and increased creativity, including summer growth (non-demanded growth). Yet these general principles require qualifications. It is clear from research that the optimum level of indirectness is not the maximum but short of that. It is also clear that the optimum level of teacher criticism is not the least but an amount greater than that. Furthermore there are suggestions that both learning tasks and pupils differ in the level of these behaviors which are optimum.

Such results lack defined levels for guidelines on the humanization of teacher-pupil interaction, they are however the bare threads of data that most change programs in the schools rely on.

Humanized schools according to the sum of proposals, ought to be characterized by a diversity of goals, patterns and opportunities, based on the admittance of the fact of human variability and uncertainty of knowledge, allowing all aspects of humanness to develop. Schools should be characterized by an ethical concern for students, to be of service, to be just, to be authentic and to be beautiful physically and psychologically. The school should be as concerned with processes and uses of knowledge as it is with the forms and content. It should be a vital living fulfilling continuum of experiences for students (MacDonald, 1969, p. 53). Attention to basic student needs of primary importance in humanizing schools has sprung from abstract research as well as 'gut' experiences such as the locked lavatory syndrome so often mentioned as characteristic to dehumanizing situations. Needs include the right to be alone, (legally repressed through education codes forbidding pupils unattended use of any space in a school), the right to safety, acoustic, eye, climate and posture comfort; and attention to nourishment in terms of food, love and approval (Grambs, 1974, pp. 16-19).
Repeated mention in humanization of education discussions of locked lavatories in schools has further reaching implication than might be expected from a topic of this nature. The importance of acknowledging natural human needs is implied. Natural human needs connect to knowledge about human functioning, particularly learning mechanisms. This type of knowledge has had little influence on schools in terms of staff behavior, discipline procedures, scheduling, curriculum organization as well as specific physical modifications answering emotional needs. In healthcare a preoccupation with physiological human needs has led to dehumanization. An absence of attention to human brain function has perhaps not led to dehumanization but to a decline in the effectiveness of teaching.

To come closer to the understanding of learning and effects of institutionalized teaching, man must be understood as a cultural as well as a biological organism (Hall, 1976, p. 167). Overcoming what Hall has termed the "hidden grip of culture" relies on: 1) acknowledging the extent and value of this grip in various ethnic group terms, 2) recreating education around what is already known about: how the human nervous system works, stores and retrieves information in a variety of sensory modes, and 3) man as a primate (Hall, 1976, p. 166).

The implications for education of brain holography and how culture works, point toward the following profound changes: abandoning the compartmentalization of knowledge, presenting all subjects with reference to context (knowing and doing), liberating learning from time slicing habits, and licensing certain, previously negatively termed, overt behavior actually coupled to learning processes (example being fidgeting) (Hall, 1976, p. 174). While knowledge of neurology points to
revolutionary changes in education demanding changes in the behavior of teachers, the same studies point toward reasons for the difficulties encountered in changing once-formed behavior. A study on the holographic nature of the brain, showed that scrambling the anatomy does not alter the program. It explains the conservatism, once-programmed by culture of individual human beings and whole cultures as well (Hall, 1976, p. 171). Studies on creativity have on the other hand shown, that the creative brain is a forgetting mechanism. We see on the one hand the brain as a pattern preserver, on the other its creative ability enhanced through the development of a forgetting mechanism (Hall, 1976, p. 173). One could explain these opposing mechanisms as safety valves on creativity and conservatism trying to establish a balance for best human functioning. Both mechanisms however can have adverse effects if not understood or incorrectly applied.

Knowledge about man's capacity for symbolic behavior and the notion of depth and age of such brain activities as spatial function, point towards the importance of school humanization's preoccupation with size. Unfortunately school reform programs rarely refer to inquiries on the effect of size on groups and their performances. They limit themselves on some 'gut' experiences not convincing enough to effect overall planning attitude changes. The ideal size of a group, coming from our evolution as a primate, is a natural phenomenon and is between 8 and 12 individuals (Hall, 1976, p. 178). How often do we see this fact applied in learning situations? Bigness as a dehumanizing component is coupled to several other factors in schools. It creates spatially ambiguous buildings, often lacking a minimum of orienting cues. Referring back to brain functions, it can be shown that in the lower-left parietal region
are located: orientation in space and dealing with order, a necessity for any type of computing, complexity of grammar and logic. Being spatially disoriented can therefore have implications not yet fully understood for learning. Bigness as well hampers learning through play and from peers, both proven crucial to learning, due to the schools need for overstructuring, bureaucracy and disciplinarian actions (Hall, 1976, p. 179).

Summing up implications of human cultural and biological function knowledge, would point to a number of reform issues scattered through the school humanization literature. The deschooling proposals seem particularly responsive to the issues referred to above. Illich, Holt, Schumacher and Alexander all argue this idea with reference to economic, political, psychological and educational issues (Illich, 1971; Holt, 1964; Schumacher, 1973; Alexander, 1977). Admittedly the power of the deschooling idea is profound, but the grip of culture has as yet not allowed a freeing of the institutionalization of learning, at least not in industrialized, developed countries. Schools are needed for other than learning purposes, such as the school's day care function and the peer grouping function. Exploiting the positive functions of schools and alleviating the negative functions would seem the most urgent need in school reform. So far the schools' preoccupation with man-power concepts, away from the concern over the wholeness of students has influenced its major effort: the making of competitive producers (Thelen, 1967, p. 29).

The competitive system is the basis of Western culture including its success as well as associated social problems. Deschooling movements on the other hand are based on more cooperative social system
ideas. Present school reforms therefore putting down the typical Western reward and merit system, advocating cooperative spirit as humaneness without instilling intense competitive drives among students ignores the setting of such reform. To advocate such profound changes in the school systems alone, seems unrealistic when operating in thriving Western cultural systems.

The power and failings of deschooling ideas are closely related to general criticism of humanization ideas in architecture. Many items advocated are possible only with profound social changes. Operative ideas in deschooling reform mostly reduce to solutions of school smallness, houseness and a return to nature as a major object of study, with an importance given to handcrafts and other essentially aesthetic occupations. Philosophic ideas behind such solutions are appealing to the liberal mind. We may endorse the ideas, but should be skeptical of implementations and their impact due to political powers underlying cultural systems.

3.5 Humanization and the Basic Needs Theory

In our introduction we connected present humanization movements to the major humanistic movements in Western man's history, the classical and Christian humanisms, with their ingredients of interest in past achievements, admiration of nature and humanitarianism and its concept of love and care.

Preoccupations with care, love, happiness and health in humanization, mentioned throughout this chapter lead us to speculations on basic human needs and values. The concept of basic human needs has been considered unproductive by many sociologists. However, the concept seems to reappear periodically with the following reasons for its use-
fulness: 1) to correct the oversocialized conception of man, and 2) to bridge two main sociological traditions, that of structural-functional analysis and that of alienation. What is meant by 'needs' are specific kinds of experiences which can only at a cost of intrapersonal tension be denied a person. The focus is on distinctly human needs and not those we share with the animal world. The needs most commonly discussed are those of: affection, recognition, security, consistency in goals, variety and creativity. These needs are assumed to represent a universal set, which have attributes of their own, not determined by the social structure, cultural patterns or socialization processes (Etzioni, 1968, p. 871). A universal preference for frequent satisfaction in terms of basic human needs could be termed to be humanization's principal endeavor.

Needs are said to be functional prerequisites of human beings, whose malleability is limited with reference to such needs. The concept of limits of conditions, personal cost and satisfaction lead to research issues on measuring conditions according to their authenticity and alienation function. Alienation denotes social situations which are beyond the control of the actors and hence unresponsive to their basic needs. Humanization can be said to attempt to act on reducible sources of alienation from socio-cultural patterns which can be made more responsive to basic human needs. For instance, efforts towards a more egalitarian allocation of resources, knowledge of the system and access to its controls can reduce the total level of alienation. Participation is less alienating, therefore humanizing.

A basic research issue in humanization is thus the identification of situations as alienating or their degree of authenticity and poten-
tial alienation. Alienating situations are characterized by interpersonal violence. These phenomena can be used as measures of conditions able to be humanized. Our research showed the literature abounding in references to interpersonal violence in schools. A conclusion that schools are basically alienating situations follows, where both appearances and underlying structures of the institutional organization are unresponsive to basic human needs of adolescents. Our research data from Chapter 2 however denied the extent of the violence problem. It showed however extensive bottled-up aggression in the form of expressed dissatisfaction, lack of personal involvement with the school and declining achievement rates. From these findings the schools' situation would be termed inauthentic showing responsive appearances to basic needs with an underlying unresponsive structure.

The diagnostic method, based on the basic human needs hypothesis and the associated capability of identifying situations through the concept of alienation, authenticity and inauthenticity becomes a powerful tool for humanization efforts. Problems associated with application in practical terms are the lack of quantification of basic human needs. We seem to be able to identify some ingredients as necessary components of satisfaction, but are unable as yet to define the extent and amount of those needs.

3.6 Conclusions

Humanization efforts in work, healthcare and education turn around the concepts of care, love, happiness and health. Humanization of architecture attempts to answer the needs for care, beauty, happiness and health through the components of houseness, smallness, aesthetics and nature. We referred to these components in the discussion on human-
ization of work, healthcare and education and found frequent references and use of the components of architectural humanization to bring about humanization in other disciplines. The extent of satisfaction of needs of care, beauty, happiness and health sought purely from the physical environment needs further investigation to reach conclusions about universal applicability of these principles.
Chapter 4

The Design Principles of Aesthetics, Nature, Smallness and Houseness, their Attributes and Contributions Toward Humanization in Architecture

"The only imperfect thing in nature is the human race." (Fowler's note)

4.1 Basic Needs and Architecture

The concept of alienation can direct our understanding of concepts of architectural humanization. The question arises repeatedly, why efforts in humanization refer to traditional rather than creative concepts. The rise of alienation in modern society is often associated with the emergence of industrialized economies, bureaucratic nation-states and the age of rationalism and science. In short, alienation and modernization are said to go hand in hand (Etzioni, 1968, p. 882). The tendency to refer back to traditional patterns of living, teaching, curing the ill, working as well as building seems a logical step in humanization. The validity of concepts for today must however be assessed not only on grounds of traditional occurrences but on functional as well as behavioral and emotional grounds. A building to be a delight, in the broadest sense from Vitruvius to Venturi, must have comfort components that stimulate all senses.

Establishing basic human needs has been a controversial subject, establishing basic architectural concepts is equally controversial. The problem lies within the modification of perceptual sensations through experience, culture, age and other motives acting on emotions. Since basic human needs ought to be independent of culture, the concepts of
architectural humanization as well ought to stand such a test. So far as presented by the two most outspoken 'humanizers' in architecture (Alexander, 1977; Sommer, 1974) their proposals have not liberated themselves of the 'grip of culture' and should perhaps be considered more in the light of values than needs.

4.2 Constant Needs and Architecture

The idea of basic needs and architecture can be studied in terms of constant needs over historical time. A list of constant needs in architectural terms can be said to be the following:

(a) The individuals sensory needs of heat, light, sound and smell control which are usually summed under the heading of comfort (Broadbent, 1973, p. 154). (It can be construed that treating the body kindly is part of the basic human need of affection: smell and silence may be related to the basic human need for privacy.)

(b) The needs derived from social developments for territory and privacy (Rapoport, 1969, p. 80). (Somewhat related to the basic human need of recognition.)

(c) The need for security (Rapoport, 1969, p. 79). (Also a basic human need.)

(d) The need for spatial orientation and constancy (Rapoport, 1969, p. 78). (Also a basic human need.)

(e) The need for aesthetics, visual order and beauty, is least basic in terms of causing direct stress in users, but may be viewed as constant in terms of historical precedence (as part of the basic human need for creativity and variety).

(f) The need for some variety in sensory stimulus (Broadbent, 1973, p. 140) (as part of the basic human need for creativity and variety).
Forms of satisfying these needs have varied greatly over time and are culture, geography and climate dependent. The architectural humanization hypothesis, that human needs can be achieved through the concepts of houseness, nature, smallness and aesthetics, lacks independence of form, since all four ingredients seem to imply some components of form, which emphasizes the inherent aesthetic preoccupation of architectural humanization. Architectural needs in terms of constancy and pluralism have been treated extensively in Broadbent (1973). Architectural humanization studies have treated needs in emotional terms rather than abstract or analytical terms. Alexander sees a fault in the concept of need and claims for his patterns a wider range of factors influencing the form of a building, called forces, such as the fact that people tend to walk in straight lines, not considered a need but considered important (Alexander, 1972).

To test the principles of humanization in architecture we refer mainly to needs as shown above. Other architectural theories have had their strict concepts, impinging as far as dictates on life styles of users (Broadbent, 1973, p. 76). Similarly critics see Alexander's 'patterns' (Protzen, 1978). We will attempt to verify, whether Alexander's and Sommer's underlying concepts, ingredients of a humanized architecture, can represent the above listed constant architectural needs or at least make them possible.

In Chapter 1, identification of the two hypotheses of humanization of architecture, pointed to a conflict; a conflict of principles versus facts. Linking principles with deterministic models has been unfortunate in architectural humanization research. The deterministic model in architecture was rejected. Its weaknesses undermine the credibility of
the principles of a humanized architecture to stand on their own ground of tradition and conviction through result.

In the discussion on the basic human needs theory, a similar conflict seems to be the foundation for the rejection of such a theory and at the same time its periodic reappearance. Basic needs on their own are appealing, can be said to exist in their own right, as principles do in advocates beliefs. They however get rejected when hard proof is sought as to their effect on behavioral and social phenomena.

In this chapter we will discuss the principles of humanization in architecture as unrelated to deterministic claims as possible. We will show the limits of influence and power of each principle on user satisfaction, design perception and building functioning. The ingredients' long standing existence, utility and beauty is discussed.

4.3 Aesthetics, Beauty, Ornament and Color

The recent humanization movement in architecture can be said to have started with an aesthetic preoccupation. Criticism as pointed out in Chapter 1 was founded on the general ugliness of modern urban scenes, which enlarged into a general concern for the human condition under urban circumstances.

The Pruitt-Igoe housing complex of St. Louis is probably the key example quoted, to demonstrate that architectural basic needs exist and that when not satisfied alienation occurs and consequently violence. We have already rejected such a direct causal relationship. Pruitt-Igoe was built with Le Corbusier's theories in mind (his concepts of basic architectural needs). His rational ideals demanded tidy, almost unemotional lives surrounded by bare walls. By 'needs' Le Corbusier meant utility, comfort and practical arrangement (Broadbent, 1973, p. 76).
The absence of a mention of any aesthetic preoccupation is evident. His own designs however have originality which creates its own aesthetics, an ingredient not evident in the Pruitt-Igoe design. Returning to our arguments in Chapter 2, a reexamination of the failure of Pruitt-Igoe could quite possibly come up with other than purely architectural causes. In Brazil apartment buildings of the Pruitt-Igoe kind are middle class aspirations, where Le Corbusier's utility concepts in the form of his play decks on each floor, would be decorated for visual appeal rather than use, the building would be fenced, a guard employed and a 'tropical garden' planted in the one meter space surrounding its perimeter. This is what the middle class hope to aspire to for reasons of their basic needs for security, tidiness in their own territory and visual effects of having reached a certain status, taken care of by service personnel rather than the do-it-yourself American home dream. One could argue stresses within this lifestyle, unhealthy for human development. Such arguments are no doubt important especially in social terms, though I believe futile to a certain degree in architectural concept discussions due to the lack of evidence in the success of imposed new lifestyles (Etzioni, 1968, pp. 876-877). Behavior and aspirations are influenced by the 'grip of culture'. Equally is architectural fit to such behavior. Conclusions about Pruitt-Igoe could therefore show failure due to the culture and social status of the population the housing estate tried to accommodate, a population already deprived of a 'slice of the cake' and whose aspirations were far more than just practical arrangements, but whose economic status and social behavior did not allow them the kind of modifications the Brazilian middle class would make, to obtain an architectural fit. They vandalized instead of
decorated. Sommer argues that a lack of aesthetic elements is at fault (Sommer, 1974, p. 55). We question such simplistic conclusions, since deeper causes are at work with deprived populations. Furthermore, one could test a hypothesis that it was crowding rather than architectural form which was a major contributor to Pruitt-Igoe's failure. Even this argument seems precarious in view, once again, of Brazilian density levels and their apparent ability to provide satisfaction to comfort, territory, privacy and security needs of the Brazilian middle class. Were technology able to provide clean air and less traffic jams it seems possible to contest that Brazilian city arrangements fit its middle class culture in its present state.

Rationalism propounded by Le Corbusier, Gropius and Mies van der Rohe and his "less is more" dictate are now attacked as "less is bore" with consequential stresses within users (Hoelterhoff, 1978). How far is there any proof of this? Pruitt-Igoe may be one, but buildings have been sacked and vandalized, due to political and social pressures as well as the human need for change and novelty. The need for change or novelty can be linked to a need for visual stimulation richer than bare walls. Sensory deprivation studies show that a homogeneous and unvarying environment produces boredom, restlessness, lack of concentration and reduction in intelligence. It was found that the ingredients of novelty rather than beauty was the cause. Subjects in such studies demanded more frequently human contact than purely physical visual stimulation (Broadbent, 1973, p. 140). Although not conclusively in favor of visually stimulating environments these studies point toward a hypothesis that timeless buildings will produce boredom, rather than fashionably styled for the moment buildings. Such a hypothesis runs
however contrary to Alexander's humanization aims. This hypothesis would seem difficult to prove, not only due to the inconclusive data from sensory deprivation studies, but also due to the problems associated with a definition of 'timelessness' in architecture. The rationalists of the international style claimed their buildings to be timeless based on lack of ornament of limited time appeal, ornament seen as subject to fashion. On the other hand Alexander argues for 'patterns' of timeless appeal drawn in part from observations of long standing utility and traditional attraction.

There exists today one salient study in favor of aesthetics. Maslow and Mintz (1956) investigated the effects of physical environments on people's judgment. Their findings of judging photographs in beautiful, ugly and average rooms seem almost too good to be true, but conclude (to the relief of architects and interior decorators) that people's feelings might be affected directly by their physical environment. Such findings are probably substantiated by a universal presence of decorative motifs applied to objects of utility including buildings. The need for visual comfort in the form of aesthetics or ornament is therefore confirmed, although we lack proof to the extent of basic needs theories. Further proof was cited by Sommer (Sommer, 1974, pp. 14-16) with regard to graffiti and its diminished occurrences in decorated environments, places where graffiti had been a major problem and where the application of murals seemed to have solved the problem. We do not see this as direct proof of the need for aesthetics only, but as proof of the need for care and participation in the physical environment by the community.
There remains the argument that it might be termed inconsistent that design should pay attention to thermal, and aural comfort and neglect the third sense, visual comfort, presumably achieved by some form of aesthetic principles (Broadbent, 1973, p. 75). It is the form that causes the polemics in aesthetic discussions. Humanization arises out of criticism of what rationalism in architecture has wrought. Objections are against the internationalist's style's "aesthetics". Humanization's own formulation of aesthetics is then imposed. The weakness of the aesthetic need hypothesis of humanization lies in the determination of the form of aesthetics, in view of pluralism and aesthetics, and changes in aesthetic principles over time and culture. That design for sensory visual delight has its place cannot be doubted, its form however is arguable and undetermined. This gets us back to the illegitimacy of form as a topic in architecture (Brown, D. S. 1971, p. 389/11). The argument here is not negating importance of form but its pluralism is asserted. Determination of form ought to stem from in situ analysis and participation, where personal belief is expressed, rather than conceptual principles.

Aesthetics can provide the ingredient of novelty so important to cause behavioral stimulus (Hawthorn effect) by renewable visual effects within a set frame. The need for change in decorative elements in architecture seems particularly pronounced in present social and cultural conditions. The advent of this is clearly visible in schools today, where lack of architecturally provided aesthetic elements have led to a fever of applied murals painted by students under the guidance of school administrations (see Figs. 3 and 13). The topic of these murals varies greatly dependent on the type of adolescent subculture
thriving in the school's neighborhood. Prevalence is shown for fashion-
able scenes of 'Star Wars', 'motorcycle gangs', 'John Travolta' etc.
Next year, if allowed, it will be whatever catches the fancy of the
moment. We can refer such banal topics to the concept of beauty as
brought forward by Heidegger:

"Truth is the unconcealedness of that which is as something that
is. Truth is the truth of being. Beauty does not occur alongside
and apart from this truth. When truth sets itself into the work,
it appears. Appearance - as this being of truth in the work and as
work - is beauty. Thus the beautiful belongs to the advent of
truth, truth's taking of its place. It does not exist merely rela-
tive to pleasure and purely as its object...
...Reality becomes objectivity. Objectivity becomes experience.
In the way in which, for the world determined by the West, that
which is, is as the real; there is concealed a peculiar confluence
of beauty with truth. The history of the nature of Western art
corresponds to the change of the nature of truth. This is no more
intelligible in terms of beauty taken for itself than it is in
terms of experience". (Heidegger, 1971, Epilogue)

In our survey of schools in the East Bay Area in Chapter 2 we noted
the lack of sensitivity of designers to the mural, novelty and change
needs in architecture. Aesthetic flexibility requires proper frames.
The problem of providing for aesthetic flexibility seems to be linked to
size problems. Large institutional buildings present repetitions above
visual comprehension of delight levels of users. Murals in abundance as
they occur in long school corridors lose their effect even of novelty
(Fig. 3). Furthermore, architectural use of color in schools seems
particularly lacking aesthetic sensitivity to decorative changes by
users (Fig. 10). Color has been studied extensively as to its psycho-
logical responses (Sharpe, 1975). Color can be said to be quantifiable
in terms of being a raw material of visual delight. General criticism
with institutional color schemes may be due to a lack of such knowledge
being applied and due to the fact that there is no objective constancy to perceptual experience (Arnheim, 1974, p. 151).

Some peculiar contradictions to color uses in school buildings and Alexander's pattern of 'Soft Color' and colors from nature was observed in our survey in Chapter 2. The predominance of brown through wood paneling or other building material choices of such color tone was evident in some school buildings (Fig. 6). The overall effect of such abundance of brown is however not that postulated by the 'patterns' on natural and soft colors. Gloominess results in low ceiling corridors and the 'tapestry of light and dark' that is created has too much contrast to be comfortable to the eye. Causes of aesthetic failure of colors in many school buildings are we believe not only architecturally determined but due to administrative policies in choosing colors for availability in district depots and belief in color and its maintenance function (Fig. 12).

Aesthetics as an economic commodity has been argued in court cases since the 1950's. The visual impact of architecture has as well been of concern to the general public as shown by the trend for new designs in prestige office buildings (Stamps, 1975, pp. v - vii). Less application of such concerns are found in school buildings. Here we find some concern for functional and social aesthetics but little or no real efforts toward visual aesthetics. Visual aesthetics is said to increase total costs of design. This can be found to be true due to the fact that current design determinants are intrinsically bound up with the regularity and economics of mass production (Stamps, 1975, p. vii). It may however be argued that even with mass produced design components and the possibilities of new materials 'good visual design' is possible even
at a cost of mass production. The argument would lead in school design toward the need for impulses from administrative bodies in the direction of real concerns for visual aesthetics. A conclusion on aesthetic attention may therefore be the need for changes in administrative procedures in institutions rather than physical environmental changes by themselves.

4.4 Nature

The component of nature in architectural humanization is related to visual delight, sensual perception of picturesqueness of landscapes and the feeling of a restoration to wholesomeness. These ideas have not been as constant over time as aesthetic preoccupations have been. With Constable the tide of occidental landscape taste turned away from the formal and classical to the natural and homey (Lewis et al., 1973, p. 24). However, the farmer struggling against nature has quite a different view of nature than the city gentleman who apraises scenery for its purely aesthetic values (Lewis et al., 1973, p. 3). How widespread the aesthetic appreciation of nature extends is not determined, that it is widespread could be measured on economics of tourism and appeal of landscape paintings, as well as sales of gardening supplies in Western Culture.

There is some evidence that nature least modified by man has the most widespread appeal over a population (Mumford, 1952, p. 144). Correspondingly, depersonalizing milieus are said to be those that deviate from natural ones, constricting people's freedom, sense of growth and completeness (Howard et al., 1975, p. 65).

Nature in late Humanism was the center of interest of philosophers, writers and scientists. Nature regarded as serious leads to respect for
landscapes. Seriousness is an aesthetic quality of natural environments. Nature is deemed serious because mountains and plains, forests and grasslands are molded by necessity operating through geological time, and are not the works of capricious will (Lewis et al., 1973, p. 26). For Alexander the ecological ordering with diversity, found especially in fauna, and resulting in natural landscapes provides a model for design, a built environment through non-monotonous uniformity (Alexander, 1972). Equally Bachelard (Bachelard, 1969), frequently refers to the perfection of natural things, especially natural dwellings such as shells and nests:

"they are built on the same plan, the object of which is to provide shelter for animals. But what variety in this simple plan, each one has its own perfection its own charms and conveniences" (Bachelard, 1969, p. 121).

Natural inspiration, as pointed out before in relation to its use in design methodology, is therefore an important ingredient of the principle of nature for humanization in design. It teaches us 'transcendental geometry' (Bachelard, 1969, p. 105).

As to the human environment, nature although some of it hostile to man, can provide him with his livelihood, is our basic source of food, and affects our climate and the air we breathe. For these reasons, man has not yet been able to live independent of nature, so that its basic need persists. The arguments in the humanization of architecture hypothesis were however independent of nature as a survival need, and rely primarily on nature as a provider of perceptual satisfaction. Topophilia, the affective bond between people and place or setting with natural elements is implied (Tuan, 1974, p. 4). Most cultures have some visual image of an idealized place, usually a place for afterlife,
molded roughly on native landscapes but in all cases unpleasant and distressing aspects of the terrestrial environments are removed (Tuan, 1974, p. 114). Humanization seeking more greenery and less concrete jungle can be compared to the idealized place formulation prevalent in most primitive cultures. Urban populations live with the memory of sylvan valley or other naturally determined landscapes. Among urbanites we see the phenomena of the idealized place in their own backyards. Longstanding experience with urban life creates a yearning for natural landscapes, reproduced without the unpleasantness of uncontrolled weed growth, pests, dirt from decaying plant material, etc. in the form of green painted concrete driveways, plastic flowers and the like. Nature is valued for its picturesqueness and charm only. As a picturesque quality, nature is integrated with the world of make-believe (Tuan, 1974, p. 133). The need for picturesqueness or visual charm from nature can however not be substantiated as a basic need or even a very constant need. Landscape history as well attests to the variability of forms of picturesqueness of nature.

Nature has however the ability to satisfy other more basic needs. Nature, as a provider of daylight, an air filter, air cooler or warmer through wind, sun and trees performs an important functional need. Daylight has been proven to be a strong need. Matters of opinion, belief and custom act on such needs. Most people for instance believe that daylight is a 'better' source of illumination than artificial light. They feel it is essential to their well-being and believe there are physiological reasons as to why it should be better for the eyes (Broadbent, 1973, p. 151). Hopkinson and Langmore (Hopkinson et al., 1959) suggest that the Scandinavian neurosis known as 'Lappsickness' is
an extreme example of daylight deprivation. These beliefs persist although no acceptable medical or psychological reasons are found in support of the assumption that daylight is fundamental to a satisfactory lighting environment. In their absence, the only valid argument appears to be that people demand daylight as being a necessary condition of an acceptable environment, which ought to be respected in design (Wells, 1965a).

The need for variety in sensory stimuli can be provided by nature. Visual stimulus is provided by the variability of the sky. The need for variability in luminous and thermal conditions is seldom adequately served by nature alone. In temperate climates a neglect of nature as an adequate provider of these needs can however be termed unecological.

Nature's value as a traditional part of our lives can be cited as well, with little proof however as to emotional effects, when absent. Spatial orientation provided through nature once constituted a need, today however natural landmarks have become negligible in their role as spatial orienters (Tuan, 1977, p. 70; Mumford, 1972, pp. 9-14). Similarly nature served once the need for security, i.e., the fleeing to the forest for cover, building on top of mountains and in the middle of lakes where nature provides difficulty of access by enemies. That a universal preference for natural settings seems to exist may be postulated. Proofs for a conclusion on the need of nature in relation to the human physical environment were not found. The value of nature in the West increased with the rise in the romantic movement. The city symbolized corruption and country life health (Tuan, 1974, p. 196). Basically it is these arguments we see repeated in the humanization movement today. Agrarian ideals, frontier lores, life seen in the fruits of the
soil, in cool green colors, pure water, clean air and healthy family 
life were the arguments used then and revived today. Ideas have become 
ideals. Man's capacity for self-delusion is however great. Ideals are 
not always substantiated in reality. Country air may be dusty:

"Suburban villas, highway-side retreats
That dread the encroachment of our growing streets,
Tight boxes, neatly sash'd, and in a blaze
With all a July sun's collecting rays,
Delight the citizen, who, gasping there,
Breathes clouds of dust and calls it country air"
(Tuan, 1974, p. 232).

Nature can be cruel. Farming community and idyllic suburban statistics 
show high crime and divorce rates as well (Tuan, 1974, p. 239).

Our conclusions about nature as a necessary component in architec-
ture are as for aesthetics: that people's feeling might be directly 
affected by their physical surroundings and that the picturesqueness of 
nature, its aesthetic affinity, its variability, colors, practical 
climate control functions are more often than not regarded as pleasant, 
therefore satisfying and necessary. Nature however does not exclusively 
provide us with our comfort needs in the physical environment nor any 
longer with our needs for security, territoriality or spatial orienta-
tion.

4.5 Smallness

In our second chapter we referred to school size studies with no 
conclusive evidence for or against smallness in relation to teaching or 
learning problems. Barker's study seems today still the most compre-
hensive and conclusively in favor of smaller schools (Barker, 1964). 
Hall's tracing of facts from evolution and brain holography pointed as 
well toward smallness as a means of providing for the needs of spatial
orientation and best human group functioning (Hall, 1976). According to Yi-Fu Tuan, only space thoroughly familiar becomes place or territory (Tuan, 1977, p. 72). Kinesthetics and perceptual experience, as well as the ability to form concepts, are required for knowing large places. Difficulties of integrating large space into familiar place seem to be linked to developmental stages and intelligence (Tuan, 1977, pp. 73-74). Human beings are not endowed with an instinctive sense of direction, only through training and ability, orientation can be acutely developed. In most of us however spatial orientation depends on landmarks and limited space.

Monumental architecture is not directly connected to the size problem as is implied by most criticisms. In institutional design, we find criticism connected with utilitarian monumentality and monumentality in disrepair. Furthermore judgment of institutional large buildings is not purely architectural, but colored by feelings of distrust of 'big power' and big institutions. School monumentality is probably most criticized for its permanence. Large solidly built edifices are difficult to replace periodically, a trend most prevalent in modern schools, whose validity rests more on the power of the need for novelty than other functional or emotional needs.

From Mayo's Hawthorn studies those who believed in architectural determinism have been disappointed. In those studies the environment consisted of three things: the sensory environment, itself with variable physical conditions of heat, sound, light and smell control within a fixed room shape; and two distinct social environments comprising respectively of members of a working team, usually called users and the observer supervisors who may be called the management or administration.
The room in the studies was shown not to have any effect on output (judgment was not studied here as in Maslow and Mintz). It was the single constant among a host of variables (Broadbent, 1973, pp. 158-160). Smallness of total building configurations and room sizes however can act on the two distinct social environments, on the user group size and on the structural set-up of management, bureaucracy and remoteness of the administration. That smaller groups act more efficiently has been shown (Hall, 1976, pp. 177-78). Smallness can therefore bring benefit in limiting user groups physically. Administration tends to grow in remoteness, overstructuring and overbureaucratization in large complex institutions. Administration's influence on user comfort was shown in studies of the effect of room naming, furniture and traffic flow arrangements, stipulated use of entrances, all administratively controlled. These variables can cause satisfactory or inhibiting social interactions independent of other physical conditions (Sommer, 1974, pp. 81-89, p. 98; Broadbent, 1973, p. 166). While room shape, the placement of windows and doors affects furniture arrangements, administrative control plays often a larger role in the variables above.

A study in favor of small spaces showed a wide range of human activities able to be housed adequately in quite small spaces of under 200 sq. ft. (18.5 sq. m.) (Cowan, 1964). This research implies individual spaces per activity in contrast to the present tendencies of open plan design. Cowan in his room size study included almost all activities normally found in a school although he was investigating hospitals where only one percent of normal activities is represented by large spaces. In a school the large activity percentage may be slightly higher. Critics may object to his areas per activity for schools,
although we would argue that the higher areas necessary in schools today are imposed by group size determination not derived from activity patterns but from school policy and economic viability. There is also some evidence that open plan high schools are defended not for their functional improvements but for economic reasons, showing lower construction costs and a reduction in total space requirements (David, 1974, p. 700). On observation of open plan high schools one can find a correlation with Cowan’s study, a different reality emerges from that envisioned by open plan advocates. Traditional programs prevail and foster traditional activities where furniture is used to create nooks of proper activity size, barricaded against invasion of other group activities. Groups as well tend to cluster near the perimeter and especially corners of spaces (Figs. 13 and 14). Architectural determinism is unsuccessful in open plan high schools. Assumed effects on behavior are not actual effects. That smallness creates territories of the proper human need size is the strongest argument we found in favor of humanization proposals, corroborated by both observations and studies on size quoted in this Chapter and Chapter 2.

Smallness as a limit of room and building size can add positive functional and perceptual attributes to institutional buildings. A note of caution must be added here. Limited activity areas point toward smaller spaces. Rooms are usually associated with the term space, at least in popular terminology. We hesitate however to delineate each activity area as a room. Preference is shown to a more flexible viewpoint on space. Activities we conclude from findings on smallness, should be given their own realms delineated through some physical means,
fixed and private to a high degree, but not necessarily totally enclosed through four walls, ceiling and doors.

Smallness can represent as well positive concepts associated with imagination and its powers. Miniature and its value has been beautifully described in Bachelard's 'Poetics of Space' (Bachelard, 1969, pp. 149-182). Tiny things are said to stimulate the imagination, imagination which takes us back to childhood and youth: "the magnifying glass is youth recaptured". Importance given to miniature, represents attention to a sense for intricate detail, increasing an object's value and importance. Attention to detail is connected to interest, and amazement:

"The surest sign of wonder is exaggeration, ... beauty and magnitude cause spores to swell, one of the powers of attraction of smallness lies in the fact that large things can issue from small ones." (Bachelard, 1969, p. 107 and p. 108).

Love of miniature increases the value of imagination over perception, where the question is posed: "Why should the actions of the imagination not be as real as those of perception? (Bachelard, 1969, p. 158). Images obtain value and can be turned to needs. Once admitting imaginary values over perceptual values, theoretical abstract proofs on concepts seem to lose importance. Images cannot be measured, (Bachelard, 1969, p. 172). Nor in general too, do facts explain values. Attraction of smallness as an image of miniature, adds to architectural functions the need of the successful transmission of images. Values are added to needs in architectural humanization where conceptual proof is out of place. Values grow out of experience, which models sensory expectations. If humanization in architecture can be defined as building for humans to be comfortable, respecting all their senses, then
architecture must match expectations regardless of available statistics. Pluralism and participation are implied, not conceptual determinism.

Smallness refers to size as well as scale. Scale is implied in many humanizers criticism of architectural monuments, particularly those representing the power of corporations or institutions. Aesthetics of bigness has fascinated architects, (as well as spectators and users) but touching daily lives of users only since the advent of the elevator. Pruitt-Igoe was criticized for its height. Newman correlates building height to crime (Newman, 1972). Alexander uses the argument of a human need for proximity to nature and earth as well as relating mental problems to living in high rises (Alexander, 1977). We have not been able to substantiate this, but concede the practical value of low 2-3 story buildings. Horizontal locomotion is still the more human in anatomic terms. Anatomy is the reference when scale is criticized in modern architecture. Humanism used the human figure, its ideal, as a measure of proportions, so did Le Corbusier. Alexander uses the human figure as a limit of measure. With humanization it is not the perfection of the human figures proportions that are emphasized, but the limit of height of the human figure creates an absolute value for heights of buildings. Economically, practically and functionally we can defend this limit, conceptually the idea refers to few proofs of real and constant needs. Schools have rarely exceeded the two to three story building height limit so that no data exist on detrimental effects of higher buildings on learning. Monumental façades created through high ceilings, used traditionally for daylight and ventilation in schools, are however said to symbolize pretension and repression of educational institutions (Fig. 2) (Weinstock, 1073, p. 27 and p. 49).
Motifs in architecture as in most forms of creative thinking have to a large extent been based on natural forms (Bragdon, 1978, pp. 64-77). Latent geometry in architecture is in general formed around patterns in nature, the human figure included. But this may be linked more to the ways imagination works than based on inherent need of such patterns. Gerard de Nerval put it best by saying: "I believe that the human imagination never invented anything that was not true in this world or any other" (Bachelard, 1969, p. 153).

Our conclusions are strongly in favor of smallness. The arguments for smallness are diverse and based to a large extent on non-clinical psycho-social effects, on influences on morale and some aspects of job performance (Wells, 1965b, p. 164). However the concept of smallness as size can cause problems of misuse. Typically we see this misuse in the private housing market where houses are made smaller under the influence of imperfect and fragile money markets. Using fewer resources creates the "lowered ranch".

Fig. 22 (Miller, 1976)
Similarly open plans are misused in schools. They enable smaller allocations of space per users therefore cost reduction. Where smallness goes beyond the adequate limits of all needs, functional, comfort and emotional it is no longer defensible.

4.6 Houseness

Cowan's (Cowan, 1964) activity and room size study showed most human activities to be able to take place comfortably in small spaces of 150 sq. ft. (14 sq. m.) - 200 sq. ft. (18 sq. m.). A housing study (Hole et al., 1966) showed the lower figures to correspond to space requirements of adequate housing. 'Houseness' in humanization of architecture, can be said to be linked to the spatial needs, or territory ordering of human activities. A well-build house can be said to serve adequately not only daily family life, but most common daily human activities whether educational, recreational or as part of healthcare and work. That domestic architectural configurations are not deemed adequate for such activities seems to be due more to economics and imposed crowding, 'so-called efficient size', than real user needs, user activity patterns and their spatial needs.

The argument of size is however rarely brought forward in the literature on the humanization of architecture, when the concept of houseness is advocated. 'Coziness' enriched by images of farmhouse kitchens, living rooms with comfortable furniture in front of a roaring fire in the hearth seems the concept's main aim. 'Gemütlichkeit' (sociability combined with snugness and comfort) is implied. Research can show an overwhelming preference for certain furniture types associated with activities of leisure, conversation and reading, which might imply
a basic need for such coziness (Broadbent, 1073, p. 169). Our sensory needs for heat, light, sound and smell control have all been formed through experiences, experiences of traditional living: houseness. Houseness exploits the notion of precedents. The house is presumably the building type we know the most about due to daily experiences. A note of caution is in place however, since no proof exists, that familiarity creates accurate judgment when counter examples are not available for discernment. The traditional house may thus be said to answer adequately human basic comfort needs. High school activities are by and large activities found in the home, i.e., conversation, reading, some manual work, some laboratory or kitchen kind of activities, some garage kind of tinkering, etc. The comfort needs for such activities with expectations influenced by the house, can be viewed as equal in both the house and schools.

Similarly one could argue that 'houseness' answers best human needs for territory, security and spatial orientation. The threshold of a house as a psychological factor, has often been used to show the house's function as a territory and security provider (Marc, 1977, pp. 9-20). Needs for territory, security and spatial orientation suggest the need for constancy. The element of change we referred to previously as a need in visual stimulus seems to vary in degree of need in different cultures, but not to the exclusion of constancy (Rapoport, 1969, p. 80). It is this element that the concept of houseness strongly represents. The value of past solutions to common problems of long actuality is represented through houseness in humanization. The definition of territory seems basic to the house and the constancy of elements of vernacular architecture tend to facilitate life by giving cues for behavior
(Rapoport, 1969, p. 80). Adaptation is fostered by familiarity. Evidence with regard to man's biological nature indeed is more in favor of constancy (Rapoport, 1969, p. 78). Perception and social behavior suggest on the other hand a favoring of change. For a proper fit of man and his environment both constancy and change must come into balance. Through the concept of houseness, the value of permanence, and stability of form becomes dominant in humanization. Cowan's room size study pointed to the success of old forms, adaptable to today's needs, technologically dominated spaces such as kitchens, bathrooms, laboratories etc., apart. The unspecialized nature of vernacular buildings and consequent success over time is a strong concept to use in architecture if one believes in the value of permanence. There are two curious issues connected with unspecialization in architecture and success over time. Cowan started his investigations due to the rapid redundancy found in hospital construction and arrived at a conclusion of overwhelming constancy in space needs.

Furthermore unspecialization and success over time are used to defend the concept of flexibility in architecture, a concept guiding open plan buildings in opposition to vernacular buildings planned around cells for normal human activities. The use of architectural concepts seems dependent on interpretations, based on convictions and values, not facts.

The concept of houseness bases its permanence value on two issues: (a) Small spaces provide good fit to common activities and are scaled in practical terms, to provide good horizontal mobility for human users. (b) Residential architecture is resistant to totalitarian views. Houses therefore change due to adjustments to changing social behavior, rather
than other impulses. It has been said that: 'houses change the secret history of style' and 'that monuments determine its public fate' (Hughes, 1979, p. 31). We would argue that architectural tendencies are frequently criticized through a relook at the house, a return to a real continuing living tradition, from which new architectural tendencies or styles spring. In present humanization movements we see a similar phenomena, the modern house is however analyzed not as an inspirator but against its traditional ancestors, and found to be lacking. This aspect of humanization efforts in architecture must however be viewed most critically. If the modern house is indeed resistant to forces outside, forces imposed due to the money market in the housing scene or other factors not related to family housing needs, then the modern house would actually be able to show great congruence to present social behavior therefore good fit. Architectural humanization in using the traditional house principle reinforces its deterministic tendencies in the advent of altered social behavior.

The ingredients of territory, security and personal space implied by houseness have psychological connotations belonging to feelings of possession rather than based on the form of the house itself. The house and its threshold symbolize possession. The house as a form does not provide this if in fact the inhabitant does not own the place in reality or psychologically. Humanization puts a claim on houseness as an architectural form favoring psychological possession. This may be related again to houseness presenting small spaces, able to be taken over, therefore possessed. How deep this type of psychological possession is, is probably time linked. In institutions such as schools, where growth, change and development are major aims, a psychological possession of
space is difficult to achieve for all users due to time limits imposed on the use of spaces. Even with changes in scheduling and a reorganization of the use of spaces in schools, teachers would win in possessing spaces due to unintended mobility. Students are meant to move along, ahead and out of school! Possession of spaces is therefore in most instances not 'houseness' dependent but favored by personalization of spaces, occurring not due to architectural determinism but due to use over time, administrative permission and encouragement, as well as psychological feelings of belonging fostered through group climate, loyalty spirits, common values and intentions in a community of users. There is however some evidence that the American high school space use system is particularly unfavorable to any feelings of belonging by students. On a comparative basis it appears that the German traditional system of unspecified spaces in high schools, belonging to a group of students for a period of one academic year is more humanizing, answering the need for territory, personal space and particularly spatial orientation: the needs for constancy. The American high school system favors absolute possession by teachers through overspecialization of spaces and prohibition of student use of classrooms when unsupervised. The space labeling system according to use rather than groups of students encourages the sense of drifting among high school adolescents. Psychological effects of domestic architecture are less substantial than suggested by humanizers, when not coupled with feelings of ownership.

Specific details predominant in domestic architecture seem however to act psychologically on daydreaming activities. Daydreaming is considered important and positive according to Bachelard (Bachelard, 1969). Images take root in our daydreams when allegations are made to "felici-
tous spaces". House images are images of intimacy (Bachelard, 1969, p. xxxii). House images and space that has been seized upon by the imagination, does not remain indifferent space, but exercises attraction. Details seized upon by the imagination augment the value of reality. The house or houses we retain in our memory as the various dwelling places in our lives, retain the treasures of former days, nourish our life-long memories. Particular details especially conducive to the imagination can stimulate such memories or reawaken them when confronted once again with similar details in new places. Traditional elements enrich such repeated awakening. Bachelard refers predominantly to dwelling place associated memories. One could argue similarly for schools, where children and adolescents spend a large part of their youth, that the place of school should be retained as a treasure for future memories.

"Elaborate places but not over-picturesque, with nooks, garrets, corridors and various stairs give our memories refuges that are all the more clearly delineated" (Bachelard, 1969, p. 8).

To secure memories and allow for daydreaming activities in public places or institutions poses problems not present in house associated memories. Memories are achieved through silence and solitary dreaming. To achieve the necessary type of silence in a school is not dependent on fragments of space only, on the availability of nooks, stair landings, window seats, warm sunny comfortable small isolated spaces, it is also dependent on the activity patterns of the institution, the permission to isolate oneself. Daydreaming has rarely been tolerated in educational institutions, deemed counterproductive to education growth. The present 'mania' for background music, even in schools, seems to negate the posi-
tive value of daydreaming and memory building, a constancy need of human beings. The effect of absence of proper spaces for daydreaming and the absence of silence, on daydreaming activities of children may be important areas of study, if the value of rich memories is recognized.

It should be remembered that silence is part of space, therefore design. It is usually nature associated and not directly connected to the concept of 'houseness'. Its need varies greatly along cultural lines. But according to Langdon and Keighly noise is said to cause the most disturbance among users in space evaluations (Langdon et al., 1964). The lack of direct attention to noise problems and architecture in the present humanization efforts emphasizes once more the aesthetic, behavioristic and deterministic preoccupations underlying these efforts. Absence of silence has to our knowledge not been tested as to effects on behavior, learning or other factors. Research of effects of noise in contrast have shown physiological and psychological damage with high noise levels, but show no effect on job performance in a comparative study of subjects in quiet rooms and rooms filled with ordinarily termed annoying noises, i.e., buzzing etc. (Hovey, 1928). Daydreaming is however not work performance so that these studies help us little in fixing some necessary components in the environment for this activity of the imagination.

Bachelard, besides arguing for the value of daydreaming, shows memories to be sounder when securely fixed in space. Details taken from the house, its maternal features of enclosure, its special places of attic, cellar, stairways, vaulted ceilings, roofs, its details of brief light from narrow windows, corners, nooks, drawers, chests and wardrobes represent the power in fixing memories due to their being particularly
attractive. (Note the similarities with 'A Pattern Language'.) The extent of such attraction over a population has to our knowledge not been determined. One might extrapolate some measure of need, or attraction from popular architectural elements and the recurrence of details from the vernacular. Since elements and details are in line with the details Bachelard advocates and seem quite predominant in popular architecture, we would conclude in favor of a need for such details. This however does not prove their real influences on daydreaming and its believed positive value.

Similarly modification of buildings by subsequent users point to some extent to the value of a continuity with a living tradition, a tradition of the simple elemental forms of the farmhouse, fitting tastes of privacy and family life. From renovations or modifications of houses built on stylistic principles contrary to the vernacular, we find a predominant return to traditional elements. A particularly rich survey on this subject is provided by Boudon in 'Lived in Architecture' (Boudon, 1969). We find modifications of Le Corbusier's houses at Pessac: from flat to pitched roofs, from horizontal wall to wall windows to smaller shuttered, mullioned windows; from aesthetics of form to aesthetics of applied ornament, particularly at windows and entrances; from homogenetic and identical façades to separate and highly individual façades; from highly contrasting colors to pastels (Boudon, 1972, pp. 165-193). Whether alternations stemmed from real value placed on the newly introduced elements is hard to judge. That they occur with frequency is significant. The reasons may be coupled to technical problems with the original designs, i.e. leaking flat roofs, heating problems and large windows; use of standard material available on the market rather
than custom made material. That the Le Corbusier cubism houses however produced such a facility of conversion is also significant. The convertibility of these houses becomes an important characteristic. It may be seen as more important than an architectural characteristic of exact fit to user needs and values. Alexander's insistence on such traditional elements of pitched roofs, small mullioned windows, trellises, vine overgrown entrances etc., neglects user modifications according to individual values. If users themselves provide these elements when lacking, the need is substantiated, as is conservatism among users. However the 'self provision' gives users added private satisfaction of individual spontaneous participation in the environment.

The provision of timeless elements alone does not substantiate humanization's aim of a building's function to be adaptable to users. An analysis of the Pessac houses showed that 'houseness' does not seem to be a necessary part of house designs. It will be created by the house owners themselves. However houseness and the need for its elements has not been resolved for institutional buildings where modifications of the type found in the Pessac housing complex are rarely possible. When space is public or 'unpossessed', needs are not individually defined, pluralism reigns. On the other hand needs should be satisfied to a maximum degree, since public users rarely become modifiers to their own needs. They are adapters in behavior and feelings, mostly unsatisfied in their basic needs. While the Pessac analysis and Bachelard's work on daydreaming and memory building showed need and value associated with traditional domestic architectural elements, we hesitate to put an absolute value on vernacular details. Experiences similarly rich in stimulating the imagination but unrelated to tradi-
tional houses could probably be shown to exert similar effects on daydreaming activities. What seems to be the strongest argument in favor of tradition are the forces of experience, forming expectations rather than inherent worth of traditional houseness associated details. We conclude therefore regarding the ingredient of houseness, that tradition in design must be respected, taking into account expectations and familiarity as cues for the behavior of users. On the practical side, house associated space activity separations through smallness and the house's direct relationship to the ground, and the provision of good horizontal connections between activities, can be termed valid design considerations.

4.7 Conclusions

Universal preference for frequent satisfaction of basic environmental needs and needs coming from expectations can substantiate in part the concepts of smallness, nature, aesthetics and houseness. We found smallness and nature to be the components with more practical attributes. Aesthetics was substantiated as a provider of visual stimulus. Houseness leads us to phenomenological speculations and the problems of substantiating the need for imagination and daydreaming as a basic human need. Conclusions on the power of tradition and consequent conservatism of user expectations were reached.
Chapter 5

Conclusions: A Perspective on Humanization in Architecture

"The solution to a problem changes the nature of the problem." (Peer's Law)

5.1 Review of Conclusions Reached

Our investigation of humanization in architecture uncovered the fallacy of determinism within the present trends. We pointed to the limits of effects of design and the limited yield of cause and effect thinking in architecture. In the previous chapter we furthermore discussed principles of a humanized architecture. The point was not to bicker about the examples and ideals used in architectural humanization but to show the difficulties in finding principles which are universal. Some objective differences could be shown to result from inclusion or exclusion of ingredients of what is termed a humanized architecture. Smallness showed real advantages with respect to present knowledge of human social behavior and its architectural management. Preferences were found to be strong as well for presences of natural and aesthetic elements, often in the form associated with regional, domestic, traditional architecture. It seems to us however that such preferences are not exclusive enough to give us a theory of humanization in architecture.

The humanization attempts in architecture today are therefore on the one hand too simplistic, and on the other hand too overbearing, presumptuous. The simplistic thinking of cause and effect acts within an environmental fallacy excluding the questioning of a wide environment
and the actions of time and space in conjunction. A romantic wishful thinking approach underlies such use of conceptual restoration and often inaccurately reported precedents, as was evident not only in humanization attempts today, but also in 19th century architectural theory (Collins, 1971, p. 95).

5.2 Some Speculations on Future Endeavors in Humanization of Architecture: the Concept of Renewal, Value of Precedence, the Concept of Equity, Moral Rules and Argumentative Design Processes

Architectural humanization grows out of aesthetic preoccupations with enlarged visions for the betterment of man and his social condition. We will attempt a definition here including a vision for 'good' in the environment, betterment and especially contentment with the built environment. With a definition of humanization endeavoring contentment we hope to direct efforts into ways of thinking away from determinism but toward a pursuit of 'good' relationships of users and their surrounding. Contentment is not comfort or beauty alone since it was shown that to persevere in a progressive life is a necessary condition to contentment (Singer, 1945 in Churchman, 1974). The idea of progress must enter humanization efforts not as a purely forward movement, but its process ingredient (on-going research) is seen by us as important.

Out of the present mood of discontent, stimulated by humanization movements themselves, we can extract a key concept for future humanization endeavors: the concept of renewal, a process thinking in architecture, a disbelief in perfection creates a driving force toward discovery and a quest toward 'truth approximation' (Churchman, 1974), which is seen as an endless process in view of constant changes occurring in

1No static meaning is implied.
social, technological and environmental conditions. Present humanization in architecture uses ideals of social conditions as well as environmental fit drawn from precedence. Previously architectural theories through negating a recognition of history ended up with static principles as well. Both tendencies lead to time limited applicability in architectural theory building.

We shall retain for architectural endeavors the ideal of humanization and its ingredient of precedence, viewed however more in legal terms than absolute terms. The legal connotation grows out of a preoccupation with the principle of right and wrong in the architectural context. Our previous discussions might lead to assumptions, that architectural humanization must be a sort of relativism, where a right or wrong is never reached because of a 'it depends'. Architectural judgment however as legal judgment ought to rely on reasons for decisions and that such reasons are the principles of a specific decision. The existing corpus of architectural principles, enshrined in precedence data can be adduced by the aid of reason and applied to new and even hypothetical situations. The congruity of the context is seen as essential however to the proper application of such principles. Ever renewed questioning of the principles with ever new problem decisions as well must be included to reach 'reasonable' reasons. Application of such precedence principles may otherwise produce "mechanical, alien and moribund pastiches of the type which brought the rules of architecture into dispute" and which have once again brought Alexander's patterns into dispute as well (Collins, 1971, pp. 47-49).

A rigorous collection and review of precedence principles for the use of planners, programmers, designers, and participants in a design
process must enter humanization if it is to stand the test of time. We may view this again in legal terms through the concept of Equity: "A means of either limiting the literal interpretation of laws when their strict application would be manifestly unjust or of providing a remedy for justice when no remedy could be found" (Jowitt, 1959). We see therefore a need for humanization in architecture to be coupled to the argumentative planning idea with as broad an input as possible since architectural decisions cannot be tested in a sufficiently closed system².

Architectural humanization based today on direct principles of form determining ideals of nature, aesthetics, smallness and houseness ought maybe to revert back to the older and broader principles of "commodity, firmness and delight," (Sir Henry Wotton, 1624), or translated into "health, beauty and permanence" (Schumacher, 1973). Attempts at humanization in architecture are thus seen as setting some moral rules for argumentative design processes, where the 'nicety' of participants in the process is seen as insufficient to safeguard decisions and their social and ecological obligations toward present and future users.

It might be argued here that since we have so strongly denied direct effect of architectural configurations on social and individual behavior, that architecture has also lost the need for social obligations. We will not discuss this theme extensively here, since it seems to us that the negation of direct effect does not exclude the need for

²Alexander invites argumentation on his patterns. To us however the conditions for discussion are not favorable for valid discourse. a) Underlying values and intentions of each pattern are not always clearly expressed to uncover disparities. b) The language found in 'A Pattern Language' is so authoritarian, as to discourage discussion. c) The manner of absolute truth and need as expressed in the patterns is of a quasi religious faith to exclude the need for argument.
possible conditions for the development of presently deemed positive social systems and behavior. Although architecture cannot change man, a change in environmental form can provide better conditions for man and his actions and instinctive socially influenced behavior, as well as surrounding him with conditions regarded (even if temporarily) as pleasant.

Present trends of humanization in architecture negated the need for specialist input in design, due to, on the one hand people's own ability to decide on the definition of pleasantness and on the other hand the application of Alexander's value laden principles which are seen as absolute 'good' for humanity. We see the need for specific kinds of input into the design process with humanization intent, due especially to architecture's limits of effect on measurable phenomena but important nonetheless due to its felt effects (or the belief system lying behind it), and perceptual effects. Such input is seen as twofold.

5.3 Issues Concerned with Humanization in Architecture

We need ever renewed attention to what we termed the moral rules for argumentation, drawn from ever increasing collections of information on definitions of health, beauty and permanence in architecture. Data on physical component relations to users, their feelings and ultimately even if limited their behavior, would be collected to make decision reality as accurate as possible. Such special input is seen as a way of controlling extraneous effects of particular design decisions, to bring into a realistic balance the economic and moral priorities underlying decisions and to evaluate social costs involved. Direct application, unquestioned, of principles, ideals and ideas as envisioned today in humanization trends, with no doubt good intentions, is seen as dangerous
due to our limited knowledge on the problems with which human nature is confronted. The precedence principles of humanization as discussed previously may show us the way to create moral constraints in architectural design. At present they rely to a large extent on some form of recognized needs which are however modifiable through time and location and the changing value system. Therefore precedence principles need ever renewed reinvestigation, reaffirmation to serve what we envision architecture's purpose to be: to create health, beauty and permanence in the built environment. Definitions of these three terms at present relate to the following issues:

Health:  
- functionality for present and some future uses of a building;
- conditions related to present knowledge of human biological health conditions, creature comfort, hygiene, minimum space requirements, ventilation, heat and light conditions, and noise level recommendations;
- regard for the present ecological system of survival;
- stress factors related in existing data to specific conditions in the built environment, such as density figures, isolation of users due to spatial configurations, or building height; noise levels and the data referred to in 'A Pattern Language' as causing harmful stresses within users;
- order and orientation facility;
- care of built conditions, i.e., the health of the physical fabric itself, maintenance facility, weathering conditions, detailing, choices of material.

Beauty:  
- emotional issues connected with styles;
- ornament and decoration;
- color, form, volume, light, proportions and material psychology;
- values from presently recognized ecological systems, ingredients of nature;
- order and care;
- aspects of aesthetics and their time limited appeal, novelty and the values of newness;
- personalization;
- ingredients of visual stimulation.

Permanence:  
- renewability, maintenance and weathering;
- ecology;
- attachment, care and respect for the past and traditions;
- assessment (both emotional and unemotional) of decay of buildings: structural, technical and functional; aesthetically;
- user adaptation facility;
- static biological necessities.

This list is by no means complete, but is included here to stimulate further collection of data and arguments on such topics.

We could conclude from Chapter 4, that to some extent the ingredients of nature, aesthetics, smallness and houiness relate well to the issues above. They are at present authoritative recommendations for humanization in architecture, which should however be termed 'coping' instructions for the moral visions for architecture due to limits in knowledge on physical elements and their effect on users.

A note of caution is due. Out of the previous list of issues emerge two contradictions with regard to the principles found in present humanization trends. (a) The ideals of smallness and permanence tend to contradict. Large buildings are over time more resistant to destruction. Analysis of this contradiction should uncover the reasons for monumental permanence. Is it due to structural properties of the built fabric at a cost of user adaptation through stress or is there indeed some emotional belief in the preservation of the monumental underlying its permanence? (b) The issue of permanence is further weakened by the humanizer's insistence on precedence of the humble, domestic architectural examples. The humble is not permanent in real physical terms. It may be viewed however as permanent in its reoccurrence and long standing attraction over time.

There are therefore motivational, emotional, survival objective issues underlying humanization in architecture, non-resolved however once and for all or by one authority only. Argumentation and participa-
tion around issues of the kind mentioned here is seen as a key factor in reaching decisions with ambitions to humanize.

5.4 Issues Peculiar to the Humanization of High Schools

For specific building types, information input, or the issues for argumentation should be amplified to include concerns peculiar to the problems in question. Concerning the high school, our example throughout, some problems which connect to the issues above are enumerated below:

- natural habits of teachers and adolescents in learning situations, individually and in groups. Best physical fit for those habits, judged as positive, not only in terms of area requirements but including questions of volume, surrounding details, creature comfort ingredients and the decorative environment;

- natural habits of learning and teaching with its physical fit as above;

- individualization, personalization, counter arguments of peer grouping and its necessities;

- privacy and the public realm: is it only an adult concern? can it ever be achieved in an unowned space? is it too connected with private home images?

- naturalness and simplicity in solution seeking, a minimum reliance on artificial means of creating good fit between user 'needs' of habits and the environment;

- humbleness coming from a respect for positive values of the home and family life;

- teaching as a labor intensive activity, rather than a technology intensive activity;

- pride found among school personnel and to some extent students with items such as enormous parking lots, sophisticated burglar alarm devices, Muzak systems etc...;

- possibilities of planning a high school excluding the previously considered normal gadgetry of schools, if data is presented that particular items contribute little to learning or security of users;

- psychotic hoarding of gadgetry and the high school;
- the present climate of fear in the high school and the possibilities of planning school buildings without electronic security devices;

- meritocracy and buildings; exaggerated concern for optimum levels of functionality;

- problems of change; the customary and expected becomes sacred;

- novelty and anxiety;

- concern for safety and security its effect on aesthetics and size of school buildings;

- concern for safety and security, its effects on use of school buildings;

- fast obsolescence of gadgets and the concept of school building flexibility;

- abilities to predict spatial demands, related to building flexibility; flexibility performance and degrees of flexibility;

- issues from user evaluation of various types of high schools;

- issues from non-user evaluation of various types of high schools;

- care and control of the built environment and participation of users: exploiting the data of the Hawthorne studies, advantages and disadvantages with fixed impermeable conditions and essentially technologically controlled environments, implications of participation on size of user groups, simplification in design, visual sense of order, natural ability to control order, acceptance of a specific degree of disorder, motivations to participate, traditions in participation (local), traditions in sharing public spaces, bureaucratic structure for participation, resources necessary for participation;

- ample architectural program specifications on physical element quality;

- ample architectural program specifications on aesthetic qualities;

- natural self-dehumanizing processes occurring in adolescence, due to changes in body and mind, its effects on habits, behavior, learning, regard for the surrounding physical environment;

- avoidance of architectural elements connected with images of: repression and the prison, indoctrination and the church, sterility, treatment and pain and the hospital, powerlessness and corporate skyscrapers;
- non-repressive images and nature, the family, the house;

- importance of physical components and the adaptation processes of new users: ambiguity, size, traditional elements, use of signs;

- inauthenticity in humanization efforts and school buildings, assumptions on continuing needs for the high school.

The issues and their topics mentioned here are diverse and incomplete since we envision attention toward humanization to stimulate growth in argumentation and new issues. To operationalize such argumentation we envision an Issue Based Information System as a stimulator in the school planning process.

We may sum up from our own conclusions that concern for humanization and architecture has several overriding themes not regularly treated in architectural design. The themes emerge as:

- Issues on quality rather than quantity,

- Issues on care and process rather than instant perfection and cure.

- Issues on simplicity and naturalness in problem solving.

- Issues on regard for natural habits rather than envisioned or goal behavior.

- Issues on perceptual motivations coupled to purely functional motivations.

5.5 Humanization in Architecture and 'Dehumanizing' the Spirit of Design

The first input mentioned under 5.3 and 5.4 we saw necessary to gear design and planning toward humanization was concerned with specific delineated issues around research and reality based data. We see as well the necessity of a second special input into the design process and architectural research, emerging particularly from our conclusions of
Chapter 2. This input relates to the limited effects found with physical causes. It is an input blessing such limits and therefore permitting a freeing of the spirit of architecture. We may compare it to the ideas put forward in Hillman's 'Revisioning Psychology', (Hillman, 1975). He terms the animation he seeks in psychology as 'dehumanization', i.e., a lesser concern with humans as they behave outwardly but a preoccupation with man's soul. As for psychology Hillman writes (Hillman, 1975, p. 191): "a study of man can never give a sufficient perspective, for a man is fundamentally limited, ........ a poor mortal thing, not fully real." We adapt such thinking to architectural design, recently overconcerned with social and behavioral phenomena at the risk of loosing the ingredient of delight and the animation of imagination. We referred to such topics previously in our discussion on 'houseness' and daydreams. We reaffirm here a need in architectural design to recognize just such thoughts, not limited to physical components of 'houseness' but to the animation of design away from cause and effect thinking on purely outward human behavior. We advocate therefore that design decisions must not be conceived through logic and proof alone nor through precedence alone. All 'these do not convince anima' (Hillman, 1975, p. 213), or act exclusively on perception.

5.6 Speculations on Securing User Input on Humanization of Architecture

How to achieve such a liberated goal in architecture, retaining at the same time the moral constraints derived from collected and revised data on effects or believed effects, remains a serious problem. One may encourage participants in a design process to describe amply their daydream associations with physical environment components. To stimu-
late such articulated dreaming 'A Pattern Language' shows us a way. The power of naming is used. Patterns are named through richly pictorial words, associated with ways of living, of interacting with the built environment, laden with ideals. The question arises, whether such images associated to specific words, as 'Shop Front School', 'Farmhouse Kitchen' or 'Window Seats' or 'Lattice Windows'; are not too confined to a specific experience to yield good congruence in physical elements when diverse groups of differing background are stimulated to dream on such terms. There remains as well the problem of what to do with minority disagreements. Hillman uses naming in his 'revisioned', archetypal psychology to animate 'soul thinking', to stimulate imaginal events within man and therefore a broader and lively understanding of his own psychology. Hillman uses names from mythology, since myths are rich in psychological drama, thus awakening through naming a multitude of psychological internal events and external consequences. We are still hesitant to use an analogue in architectural associated perception. Naming as used in 'A Pattern Language' seems to us limited in its real effects on design decisions. Users, participants in a design process are not motivated sufficiently when confronted with architectural decisions to be fully eloquent in descriptive moods of physical settings, as one might expect in a session with one's analyst. With diminished effect there is diminished involvement. Pictorial stimulation as was seen with naming presents difficulties of reaching diverse user agreement, as well as limiting the richness of user stimulated images to the variations contained in the scenes used.

Thought, image and feeling must interweave to reach design decisions, since they act together on judgment of humanization in architec-
ture. Images particularly must be extracted from users to precede judgment on some agreed upon predominantly moral issues.

5.7 Adolescent Views on High School Environments

In the high school context expressions of images and feelings about physical settings are somewhat facilitated by children’s and adolescent’s own longing to voice their needs and desires often in highly articulate form. Physically connected daydreams, fantasies of school settings are jotted down with marked subtlety when we analyze the writings of school children as criticisms of their own schools or visions of future learning places. The fantasies expressed can be found to be by no means utopian impossibilities, but turn around normality of human relationships, associated with home and family life and its settings as well as some special places of particular aesthetic value, as can be attested by the following excerpts:

"A school building should be like the Liverpool Roman catholic cathedral'; 'classrooms should be large, airy and painted in bright colors'; 'too much glass is a mistake'; 'underfloor heating is needed so that people who enjoy going without shoes could do so in comfort'; 'Decoration by the pupils, quality of decoration, layout and furniture would be so good, that vandalism would be at a minimum'; 'three features of this school that would immediately strike a visitor comparing it with my present school would be: a) comfort, b) little noise, c) efficient central heating and airconditioning'; 'The building would be cramped with interest'; 'Revolution must break out, the classroom must be invaded by novel color schemes, and different architectural styles, taken over by paintings and sculpture.'; 'No two classrooms should look the same'; 'Even a slight rearrangement of the room might stir a thought or two!'; 'Classrooms should be sound proof.'; 'A little comfort wouldn't come amiss either.'; 'Couldn't we have some easy chairs, not deep armchairs, but just comfortable backed chairs.'; 'More space instead of being cramped in about 1 sq. yard of hard wood.'; 'Tables would replace desks, which are small and an enemy of knees.'; 'School should be something beautiful to revolve around.'; 'It does not seem the done thing to have trees around.'; 'How different would be a school with large light corridors.'; 'A classroom should be definitely not square.'; 'Let there be an end to these dreary places where the sun never penetrates, where the electric light is
on constantly.'; 'It is all very odd, we have several large science laboratories that are clean enough to perform brain surgery in, while our lavatories are usually minus chains, or minus doorknobs or minus toilet paper or minus all three.'; 'I believe that actual equipment should be kept at a bare minimum, but there should be raw materials in plenty. In the old concept of a gymnasium, dangling ropes suggest you must climb them. Why not provide trees instead?'; '...with a variation of grass, concrete, trees and bushes.'; 'The building will not be built to last forever.'; 'I attend a school set in delightfully natural grounds. I do not fully appreciate this at my unperceptive age (15) but cannot help feeling proud when its beauty is drawn to my attention.'; 'In towns schools should have greenhouses or at least indoor flower boxes,'; '...learning depends on atmosphere and the teachers and pupils. If you are happy, a shack will doubtless do to be merry in, round rooms with filtered sunlight can be given a miss.'; 'Gaunt buildings, shamed by brick and harsh design, fade hazily into a soft mist of light, To rise again as deep, mellow-hued stone, honeyed by the sun. Long rambling halls merge into being, ochre tiled, shadowy eaved. High arched windows, arrogant and deep, colors subdued by gold, violet, blue or creeping vine. And around are trees, many tall, beautiful trees, Rustling gently on the breeze. Sweeps of green meadowland, bracken, furze tall and uncut, flushed with wild flowers. Here and there are covert concealing leafy arbours of rough hewn stone, majestic statues, Hygeia and Diana cloaked in misty lichens. Stretches of open water, reedfringed, translucent, deep, ruffled by the wind - The home of wild fowl and mosquitoes in summer. Then campus hoves into view - Gone the sparsely vegetated area of former years - Now filmy forms hurl javelins and discuss on buoyant turf, resilient green, And run like the fox and deer fearless from the brush. Gone too is the yard where once were children herded in the winter months, Snuffling and stamping in the cold like a herd of musk-ox in a storm. For the young folk now is the freedom of the woodlands to do with as they please, A place to tumble or run wild, a pleasant classroom to learn, think and dream. At ease with nature as were the Ancient Britons of the past - Then placidly as my vision came, it slips away with the rising heat, And a well-aimed kick in the ribs propels slowly forth, Back to the dusty gloom, the echoing corridors and noisome smell of school.'." (Blishen, 1969)
Ideals and dreams of these adolescents (British) sound reasonable and achievable if they are taken seriously and weighed against administrative demands on security, gadgetry, maintenance and control. Adolescent views of a humanization of school are quite similar to elitist views on architecture, from which humanization stems. Elitists' views are however coupled to ideas that: "visual cankers also betoken equivalent inner corruption, some moral, social and ecological decay. Where everything is seen as sullied; greedy, despoliation of sacred heritages by heedless proliferation of vulgar multitudes" (Lowenthal, 1973, p. 29). Whereas users regard the need for aesthetic quality, nature, comfort, silence etc. as important on its own.

Using the passionate concern for normality in human interactions and quality of environmental settings found among many high school students, if given the chance to reflect and choose, can lead to design decisions embracing naturally the issues of humanization in architecture. Stimulated daydreaming, freed reflections on design in the school environment, although naive in its nature, led to what has been tried to be reached through reason by the authorities of humanization in architecture.  

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3 We referred previously to Max Jacobson's work (Jacobson, 1972) attempting to prove patterns as natural design processes. Our arguments here are somewhat in line with his ideas. Our reservations are however that users may naturally choose the qualities of normality found in the patterns and their traditional precedence values, the translation of those ideas in design decisions however is not naturally reflected by these physical element choices translating the dreams into reality. There seems indeed the need for some safeguarding procedure when desires are eventually translated into actual decisions.
5.8 Speculations on Changes in the Design Process with Humanization

Intent: Issues for Further Investigations

Thoughts on the animation of the design process to bring out user's dreams, desires as well as needs leads us to speculate on changes in the training or personality of a necessary stimulator of a planning process, be it an architect, planner or other expert or interested person. The present groping around for modes of a 're-creation' or humanized architecture must be less elitist, less naive, more serious about the simplicity of humanization's message, its unpretentiousness.

There are furthermore a number of emergent issues which surround humanization in architecture as brought forward here. These issues we believe are latent topics in design. They arise from our investigations in this thesis and need further research in the context of humanization:

(a) We are profoundly ignorant as yet about architecture, its effects, the associated belief system etc. We are as well concerning architectural research still at the stage of 're-inventing the wheel'.

(b) Humanization in architecture, as determinism is like belief in magic.

(c) Humanization in architecture is influenced by present, especially American obsessions with health.

(d) Architecture cannot be evil by itself, but can be a camouflage for evil deeds. Architectural judgment removed from the functions of a building is therefore of limited use to establish some connections between the built environment and its effects on users.
(e) Architectural criticism has 'Zeitgeist'. Physical indicators of dehumanization are therefore context bound, controversial time limited in their application and changeable in meaning.

(f) Humanization in architecture may be viewed as a bridging between research and practice.

(g) The drive toward unambiguity in architectural design, a search for meaning can destroy depth of images. Justifications are valid for building up knowledge and confidence but not at the expense of shackling design imagination.

(h) Exact physical descriptions drawn from research conclusions are not only dubious in view of the bare threads of actual architectural effect data available, but seem to offend the profession, therefore lack application in decision making.

5.9 Architectural Programming and the Humanization of Architecture

As a bridging between research and practice, attention to humanize the environment falls within the activity of architectural programming. From analysis of high school building programs, concerns for humanization as they have been formulated throughout our discussion are not part of this predesign process. A sense of humanization in very general terms is sometimes mentioned in such documents, lacking articulation, however, of detailed attention to issues of perception, detail and aesthetic quality, human group interaction and its spatial needs, and ecological considerations. Humanization in the high school today is viewed as an addition and can be summed up as: carpeting, color coordination, potted plants and Muzak systems. In programming today, it is assumed that the ethical nature of those concerns in design, designated to humanize the environment, will follow naturally through actual design
considerations. Reality shows us however that programs do dictate design decisions to a large degree limiting considerations to what is demanded in the brief. Programs act as regulations: minimum requirements become design principles.

There seems therefore a need to induce expression of the concerns for humanization not only in academic writing but in each specific problem delineated architectural program. Ethical and delight considerations as we may term humanization in architecture should have expression in vivid, detailed descriptions in architectural programming, to gain chances for reality in the building.

The art of programming seems by nature a cause and effect practice, a deterministic activity. For this reason programs have shown little congruence of expected and real effects in building evaluations. On the other hand programming seems a good opportunity to create awareness toward the multitude of issues involved in planning and design decisions. Data can be disseminated, contradictory arguments exposed, extraneous effects related to avoid working within environmental fallacies. In programs one can draw from the literature of humanization in architecture for details, not because they are hard data, but because they seem to work to some extent in some present conditions. An important issue in programming is however to be explicit about what is decided and on what grounds: empirical data, values, practical criteria, technological criteria, ecological criteria, aesthetic considerations, expressed needs, etc. All such considerations should find expressions in programs with full argumentation of each issue, including the possibility of displacing such needs from the environment.
To operationalize such programming activities in the high school building context could be made possible through an Issue Based Information System (IBIS) as mentioned previously operated and therefore accessible through organs such as the California State Bureau for School Facility Planning. These type of departments already act within the process of plant programming through solicited advice and obligatory criticism and consent. Through support from an information system, programming can sensibilize users, the professions, the affected participant public in general, to discrepancies between real effects and ideal dreams which up to now have been glossed over due to programmatic determinism.\(^4\) An IBIS support can help architectural programming out of the 're-inventing wheel' process, since through it the process can learn, eliminate fallacies and incorrect data, uncover problem areas, collect precedence systematically. A systematic input into the programming process of those issues concerned with the humanization of the built environment, especially in the institutional realm, may help to lend seriousness to such concerns, previously regarded as additions to functional concerns.

Humanization in architecture through the loss of its deterministic missions therefore must lend seriousness to not only architectural functional purposes but to regard for each detailed component making up the fabric of a project. Coupled to the present programmatic considerations of area standards, intercommunications of spaces, furnishing and mechanical creature comfort stipulations, seriousness must be lent to volume and proportion of spaces, walls, ceiling, roof, stairs, corners,

\(^4\)Architectural reality seem to us have a tendency to offend in some way due to discrepancies in descriptive form of ideas and ideals and their materialization.
windows, doors, cellars, towers, attics, color, sunlight and wind, decoration. Seriousness thus ought to extend to those components not showing direct effect on usefulness of a building but acting on visual effects, and perceptual satisfaction influenced by belief systems, tradition and the laws of ecology. The isolated parts treated today in programs for their functionality only, need extended expression in vivid descriptive forms to include the components of built spaces and their effect on the whole space and building. While it may be argued, that program elaborations on architectural components stifle designer's creativity, we are of the opinion that designers as part of the elaboration processes of such programs, already employ their creativity but with useful checks on its application. Furthermore we believe that better information and congruity between intent and need of users, are by themselves no handcuffs on creativity, but lend security to the creative processes in design. Descriptions of architectural components are seen as value ingredients which emit checking impulses on the design process against overwhelming mechanical design thoughts. Humanization in architecture therefore, as a conclusion to our investigations here, does not have an exclusive mission toward social and behavioral betterment of users of buildings. Its mission is to lend extended seriousness to the components of architecture and their connections to perception, their effect on ecological equilibriums and facility to biologically sound and socially healthy needs.

In the institutional realm particularly, architecture had lost its traditional concerns inherited from art, for the overextended concern in social, economic, functional and security terms. We rarely hear a cry for the humanization of art. The cry for a humanization of architecture
may be interpreted as a cry for a sense of care: about users, their needs and pleasure; about the components and form of the physical environment, with a sense of seriousness associated with art, where a search for effect and explained meaning is often left untouched to let resultant creations speak for themselves.
Appendix 1

List of Topics Asked to Personnel and Students in the Schools of the Study in Chapter 2

(1) Age of school buildings; (2) Socioeconomic class of student population; (3) Racial mix; (4) Size of graduating class in 1977; (5) SAT test percentages and grade point averages; (6) Drop out levels; (7) Absenteeism rates; (8) Discipline problems; (9) Amount of vandalism in 1977; (10) Types of vandalism damages; (11) Crime rates in 1977; (12) Types of crimes; (13) School security systems; (14) Types and extent of organizational changes in the school; (15) Personal evaluations of the school buildings; (16) Preferred spaces in the school compound; (17) Improvement suggestions.
Appendix 2

List of Schools Surveyed in the Study of Chapter 2

(1) Oakland High School
Address: 3233 Park Boulevard, Oakland, CA 94610
Building age: 1927 (due for demolition)
Descriptive details: double loaded corridor plan, three story building
Materials: stucco, vinyl tile, acoustic tile.

(2) Alameda High School
Address: 2201 Encinal Ave., Alameda, CA 94501
Building age: 1978
Descriptive details: compact plan with internal, enclosed small courtyards, two story building
Materials: stucco, blockwork, glazed tile, carpeting, acoustic tile.

(3) American High School
Address: 36300 Fremont Blvd., Fremont, CA 94536
Building age: 1972
Descriptive details: open plan, one story building
Materials: concrete, blockwork, carpeting

(4) Mission San Jose High School
Address: 41717 Palm Ave., Fremont, CA 94538
Building age: 1964
Descriptive details: isolated buildings, campus type plan, one story building
Material: wood, stucco, shingles, stonework, vinyl tiles.
(5) John F. Kennedy High School
Address: 39999 Blacow Rd., Fremont, CA 94538
Building age: 1965
Descriptive details: courtyard type of plan, buildings grouped around open courtyards for circulation, one story building
Materials: wood (ceiling and some walls), blockwork, carpeting, acoustic tile, concrete paving.

(6) Castlemont High School
Address: 8601 MacArthur Blvd., Oakland, CA 94605
Building age: 1959
Descriptive details: double loaded corridor plan, isolated buildings surrounded by paved open areas, many portable classrooms
Materials: stucco, curtain walls, vinyl tiles, asphalt paving.

(7) Skyline High School
Address: 12250 Skyline Blvd., Oakland, CA 94619
Building age: 1961
Descriptive details: double loaded corridor plan, isolated buildings in garden setting, one story buildings
Materials: stucco, curtain walls, vinyl tiles, stone paving.

(8) San Ramon Valley High School
Address: 140 Love Lane, Danville, CA 94526
Building age: main part: 1930, others 1976
Descriptive details: older buildings are double loaded corridor plan, isolated buildings connected with covered walkways, newer buildings are compact plan, two story unconnected to the rest of the school
Materials: wood, blockwork, carpeting, laminated plastic.
(9) Emnery High School

Address: 1100 47th St., Emeryville, CA 94608

Building age: 1962

Descriptive details: double loaded corridor, compact plan, one story building

Materials: concrete, curtainwall, vinyl tile, glazed tile and acoustic tile.
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