

**AN EXAMINATION
OF THE ROLE OF THE
ARCHITECT
ON THE DEVELOPMENT
OF THE CHILD
IN THE CITY**

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TO THE O.B.M. THE O.B.D. AND THE O.B.P.

ABSTRACT

According to population projections, by 1980 almost one-third of the entire Canadian population is expected to live in the three giant urban complexes of Toronto, Montreal and Vancouver. The effects of such population growth and resulting urban concentrations on the individual are not yet fully understood, particularly with respect to the development of children, a large percentage of whom are spending their most formative years in such environments.

In order to arrive at meaningful solutions for organizing spaces within the urban centres, suitable for child functions, the architect must be aware of both the requirements of the child for proper development and the effects which environmental influences may have on him.

Preliminary investigations indicated that this information was presented as statements of accepted facts which were derived from observations of existing phenomena or as statements made directly upon general observations. This information did not deal with the reasons behind the behavioural information cited. Unless architectural statements are based upon actual reasons behind behavioural activity, they are merely projections or combinations of given statistics. Consequently, no true meaningful solutions can be produced using this information.

As suspected however, the information required was not available in empirical studies, relevant source materials, or from

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specialists in many fields of study. As a result, a proposed theoretical system for obtaining such information was developed. The system illustrates what kinds of information the designer requires from a researcher, where the information should generally be obtained (ie. child extensions), and how it can be made available for designers in order to become an integral part of the design process. The recommendations of this system and the resulting implications have been exemplified by means of theoretical postulates which illustrate what kinds of information could be applied in order to arrive at meaningful solutions for the development of the child in the city.

Consequently, the hypothesis, based upon the assumption that a new kind or a new form of information would have to be generated for architects (all physical designers), was successfully confirmed.

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INTRODUCTION

Almost three-quarters of our population live and work in the cities and towns occupying only 1-1/100th of the huge Canadian land mass. By 1980, almost one-third of the entire Canadian population is expected to live in the three giant urban complexes of Toronto, Montreal and Vancouver. The Economic Council of Canada Report, concerning the Canadian Economy from the 1960's to the 1970's, predicts that by the year 2001, ninety-four per cent of all Canadians will live in an urban corridor between Toronto and Montreal. Toronto will have approximately 6.5 million people, Montreal 6.3 million, joined by a corridor of three million.¹

The effects of such population growth and resulting urban concentrations on the individual are not yet fully understood, particularly with respect to the development of children, a large percentage of whom are spending their most formative years in such environments.

In order to arrive at meaningful solutions for organizing spaces within the urban centres; suitable for human (child) functions, the architect must be aware of both the requirements of the child for proper development and the effects which environmental influences may have on him.

¹Economic Council of Canada, The Canadian Economy from the 1960's to the 1970's, pp.173-87.

HYPOTHESIS

In examining the development needs of the child in the city, sources of information prepared by psychologists, sociologists, education-
alists, medical doctors, and physical designers were consulted. All of
this information was presented as statements of accepted facts derived
from observations of existing phenomena or as statements made directly
upon general observations. None dealt with the reasons behind the be-
havioural information cited.

Hence, unless actual reasons are given as to why certain activ-
ities are engaged in or why certain behaviour occurs, architectural state-
ments cannot be made that are anything more than projections or combin-
ations of given statistics. Consequently, no true meaningful solutions
can be produced using this information.

The fact that a new kind or new form of information would have to
be generated for architects (all physical designers) became apparent.
This information is required from social scientists and other disciplines
related to the specific problem since the physical designer cannot be
expected to have sufficient depth of knowledge in all fields. If,
however, the various disciplines do not participate, architects themselves
will have to produce knowledge specialists from within.

Based on the assumption that a new kind of information is re-
quired, further examination by review of relevant theory and empirical
studies, by interview and first-hand observations was continued in order
to further ascertain specifically what kind of information designers require
and whether this type of information is available. If, as suspected, such

information is not available, suitable recommendations for obtaining such information will be presented.

OBJECTIVE OF STUDY

The objective of the study is to verify the quality of the information available to the architect, and if unsuitable for his purposes, to make recommendations for the amelioration of this situation.

For the purposes of this thesis, the information concerns the development of the child in the city.

SCOPE

Having made an initial investigation into information available concerning the child in the city, and consequently having a preliminary suspicion of the kinds of information available to the architect for designing, a research methodology was followed which allowed the study to continue in depth and yet cover as much information as possible.

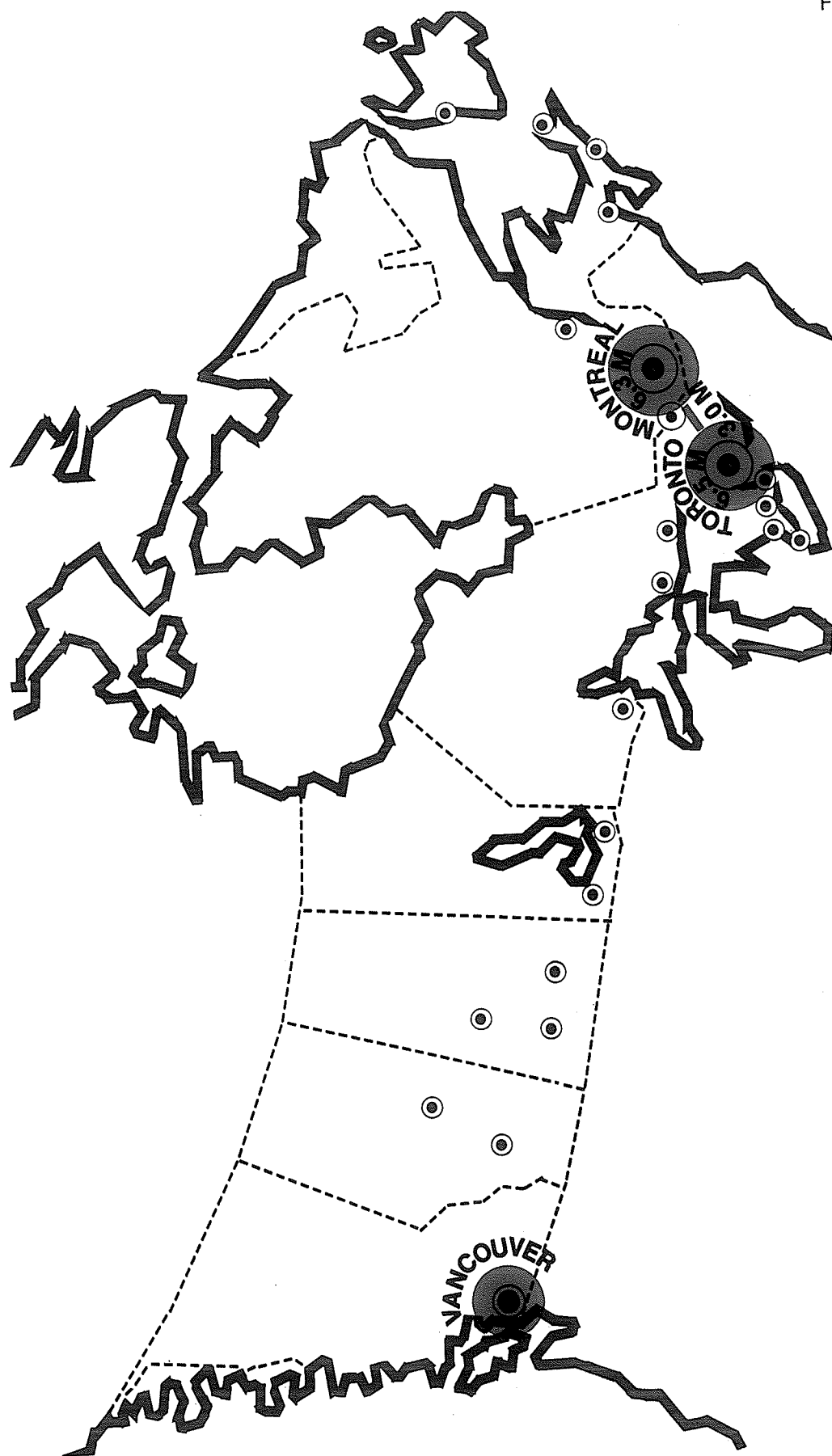
The areas of study concern the developmental influences on the child in the city. As a result, information was collected and observations were made on a fairly broad scale, as will be apparent in the following thesis material. The city of Toronto, with the highest projected population in Canada, (see figures 1 and 2) has been chosen for this study, to which all research is applied or evaluated from the view point of the role of the architect on the development of the child in the city. Specific divisions for research were chosen as follows: Social Units, Dwelling Units, Developmental Spaces, Education, Community - City.

In each area, a great deal of written material was examined and observations made, as indicated in the sources consulted. Since the hypothesis makes a negative assumption which is difficult to test by systematic means, such as questionnaires or actual child testing, the methodology included both interviews with persons involved in the various fields related to the area of study and actual observations and visits to situations existing for children.

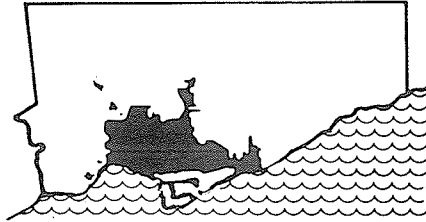
Consequently, both first and second-hand research were conducted simultaneously. The relevant theory and empirical studies were directly accompanied by actual discussions and observations of specific areas dealing with influences on the child. Since it was obvious from

preliminary investigations that children develop at various rates, no age limit was specified for the study with the exception of designating the period from infancy to adolescence.

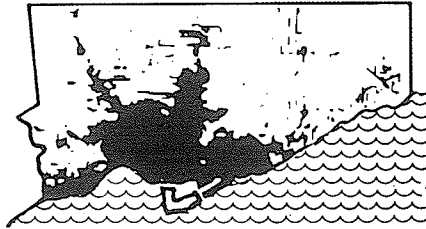
Conclusions of the examinations were made, followed by recommendations and theoretical postulates of usable information.



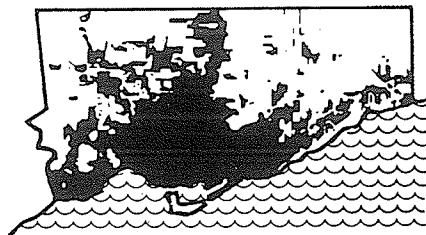
CANADA - URBANIZATION 2001



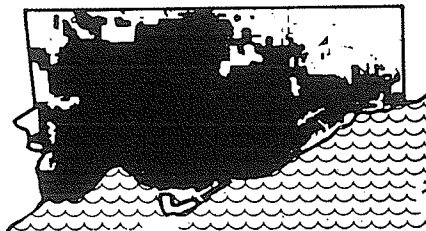
1918



1945



1953



1968

**GROWTH
METRO TORONTO**

CHAPTER ONE

I N F L U E N C E S O N T H E D E V E L O P M E N T O F T H E C H I L D I N T H E C I T Y

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DEVELOPMENTAL INFLUENCES

SOCIAL UNITS

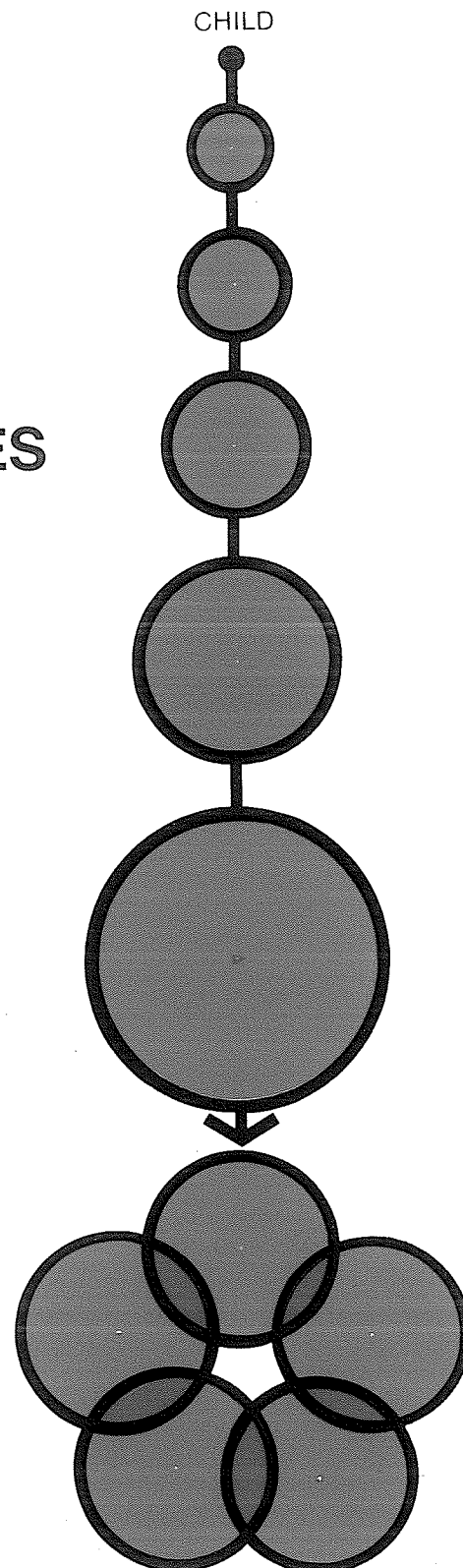
DWELLING UNITS

DEVELOPMENTAL SPACES

EDUCATION

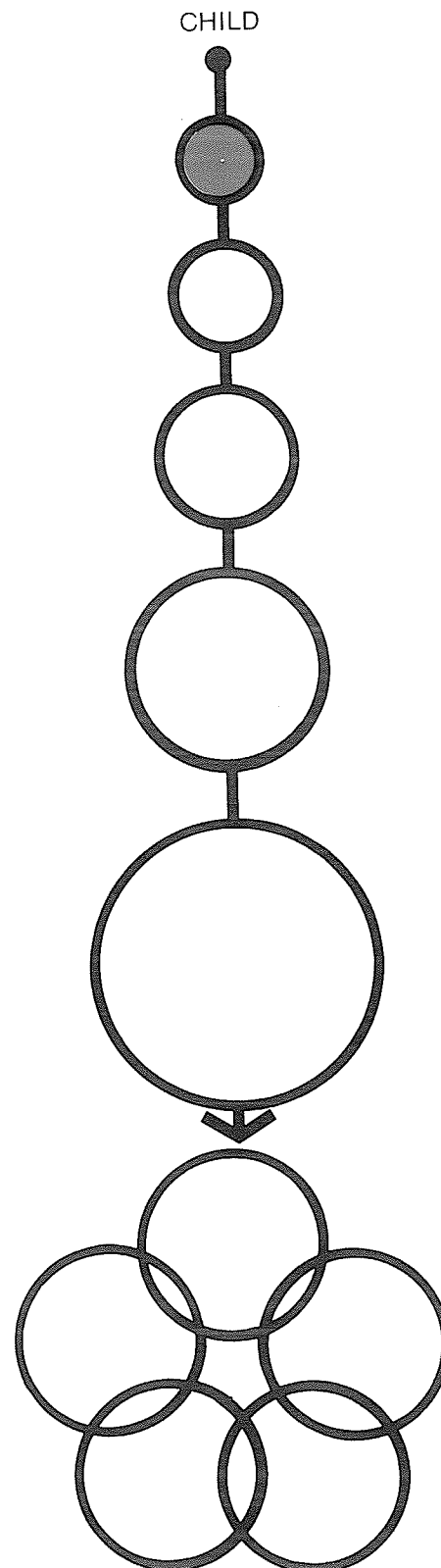
COMMUNITY - CITY

SUMMARY



DEVELOPMENTAL INFLUENCES

SOCIAL UNITS

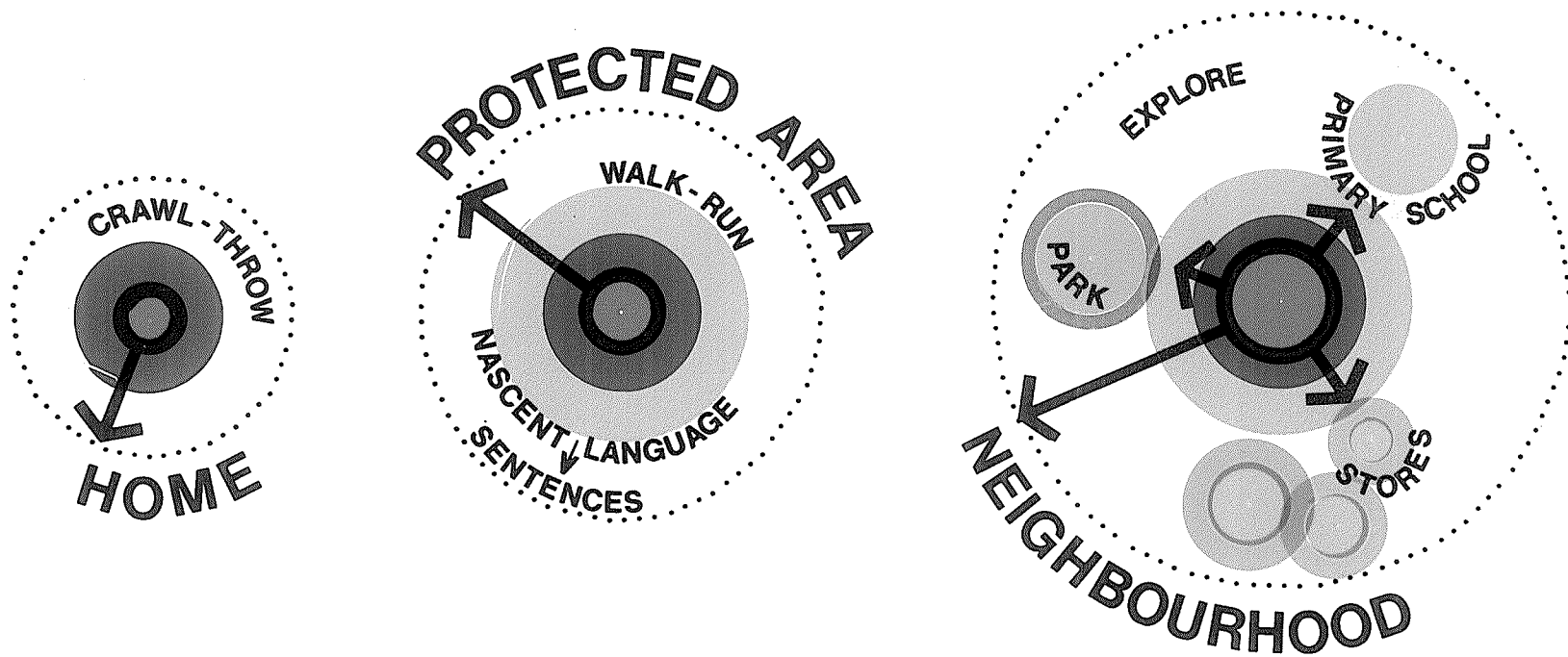


SOCIAL UNITS

The following is a discussion of the nature and importance of the social unit within which a child is born. The first eighteen months of a child's life are extremely important, for during this time all the cognitive substructures are formed for later perceptual and intellectual growth. In the first two weeks of life, the resting stage, the child primarily eats and sleeps. The only real action is the sucking reflex, an automatic action taken by all babies. From the first day of life until the child can manoeuvre by himself, he is seldom left alone, unless he is sleeping. He becomes familiar with his immediate environment, but his needs aside from human love, are minimal.¹ Figure 5 illustrates the gradual development and mobility of the child in relation to his physical environment.

The Harvard Pre-School Project research operation started by psychologist Dr. Burton White first discovered that children's success or failure in school seemed determined before they began grade one. Further investigation concluded that something very important occurred between the ages of ten months and one and one half years (see figure 6), which caused children to diverge into one direction of development or another. Mothers of children who developed positively did not deliberately teach their child and seldom gave him their undivided attention for more than ten per cent of his waking time. At intervals of perhaps twenty seconds, these mothers paused to speak to their child. They capitalized on the child's particular interests and initiative in doing things in order to enhance his thinking and curiosity. Mothers of children who displayed poor development

¹Jean Piaget and Barbel Inhelder, The Psychology of the Child, pp.1-7.



CHILD DEVELOPMENT - MOBILITY

generally over-protected their child and restricted his instincts to explore and discover things for himself. Consequently, although this mother may love her child, she fails not only to share his achievements and excitements but fails to stimulate him intellectually.²

If a child continues to remain in the same general environment, his fate is almost certainly fixed, either positively or negatively, by the age of three. As a result, plans for early mother training, before child-rearing patterns have done irreversible damage to the child, and plans for introducing educational check-ups similar to physical check-ups available today, are seriously being considered.³

In the sensori-motor period, or the period we commonly call baby-hood, which lasts from the first two weeks of the child's life to the end of eighteen months, actual language is absent. A child progresses from his first spontaneous vocalization to one and two word sentences. He gains control over his body ocular control after the first month, and head balance about the fourth. Once these actions are accommodated, he is able to co-ordinate his vision and prehension. From then on, he learns to stand and walk. By the eighteenth month he is usually running.⁴

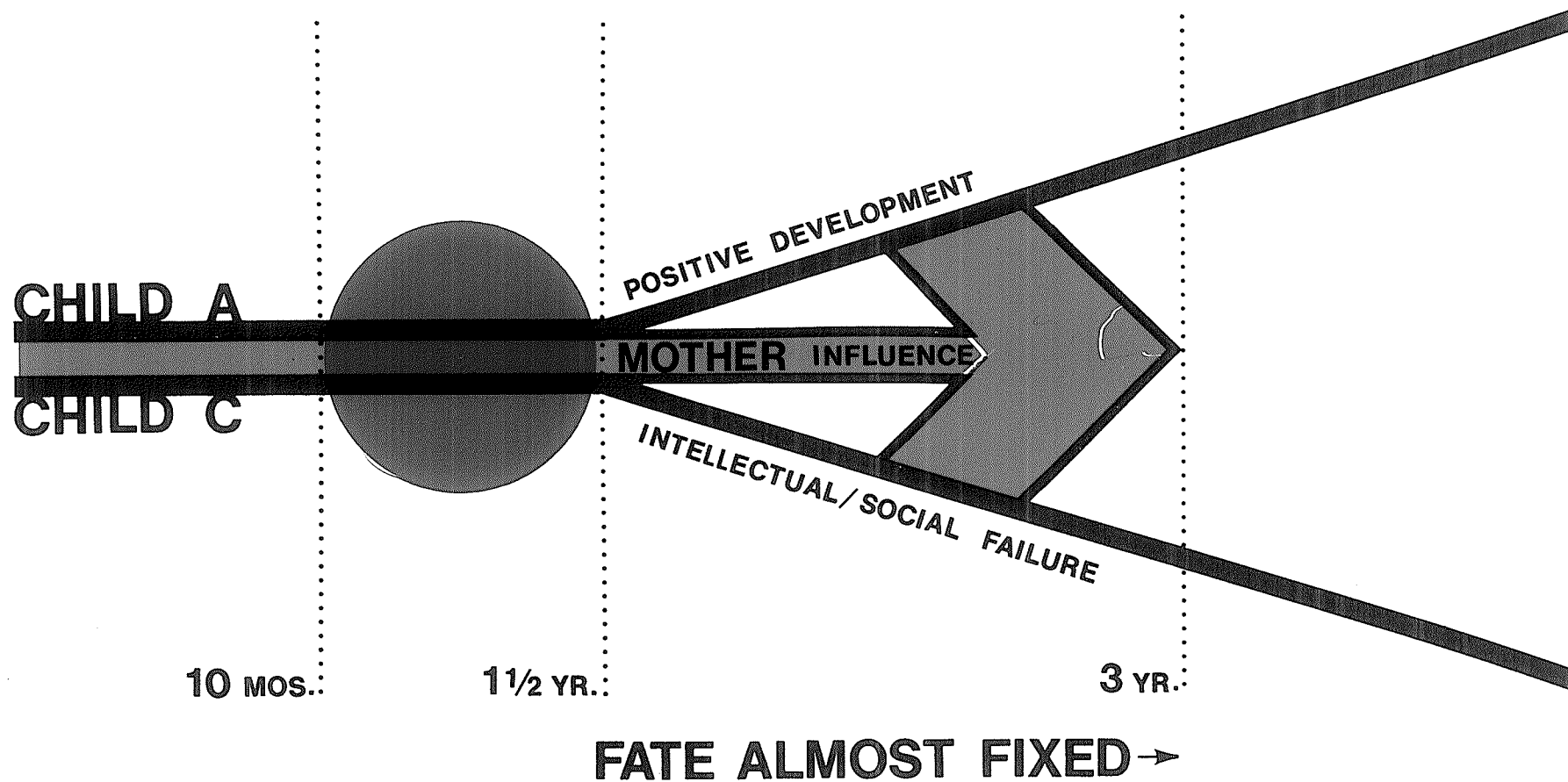
According to one observation, children up to the age of one year, loved and cared for, but born in a poverty environment (characterized by over-crowding) may experience a wider variety of auditory and visual input than the children of the same age, also loved and cared for, but born in

²M. Pines, "A Child's mind is shaped before age 2," Life Magazine, Dec. 17, 1971, pp.63-68.

³Ibid.

⁴Piaget and Inhelder, The Psychology of the Child, pp.9-10.

← EDUCATIONAL CHECK-UP ? →



CRITICAL YEARS

the middle upper class environment.⁵ A result of a psychological experi-¹⁵
ment with mothers and children in a Milwaukee ghetto contradicts this.
It proved that children reared in such impoverished conditions did not
develop normally unless the mothers were taught home-making and baby
care.⁶ This coincides with the report of Dr. White, just discussed
(see supra p.11).

As the child grows older, he needs more space for crawling,
walking, throwing things - all indicative of childhood play. The usual
frustrations exhibited by parents with monitory problems are no help to
his development. The problem for the child in a poverty situation becomes
more acute as he grows older and needs suitable answers to his questions.⁷

These observations indicate very strongly that the family and/or
the social unit which the child is born into greatly influences his later
developments.

Basic animal traits are prominent in shaping man's family life.
Man like other animals, is helpless at birth and would die quickly without
care. Elkin in his book, "Child and Society" describes several cases of
underdevelopment in children who lacked adequate emotional and physical
care at birth.⁸ Man matures later than any other animal being unable to
care for himself until he is much older. He has no instincts to simplify
his adjustments to the environment, although he possesses the most complex

⁵J.M. Hunt, "Implications of changing ideas on...How Children
Develop Intellectually", Children Vol.2, No.3, (May-June 1964), p.89.

⁶"Nurturing Intelligence," Time, January 3, 1972, pp.40-41.

⁷Hunt op. cit., p.89.

⁸Elkin, Child and Society.

brain of all animals.⁹ This lack of instincts suggests that a critical problem may endure particularly in children who are constantly facing new environments. "One might then view culture as an evolutionary adaptation to a large brain and a lack of instincts; or a lack of instincts may be attributed to man's no longer needing them, after he developed a large brain and culture".¹⁰ Man must then live in some sort of grouping, wherein he is taught, fed, protected. With such a social environment early in life, he then begins to learn to develop more rapidly than any other animal due to his complex brain.¹¹

In Plato's utopia the nexus between parents and offspring played no part. Plato believed that the child should be taken from the parents at birth and reared by designated people under special conditions. Similarly the Israeli Kibbutzim (see figure 10) and the Russian experiments separated children from their parents. The adults contributed their best skills to the co-operative unit each day, while their children looked to nursery attendants for affection and direction. Marriages were based on emotional and personal bonds, no obligations existed concerning a family. Men and women worked equally without regard to family ties or sex status. Our contemporary communes and feminists attitudes are not so revolutionary.¹²

The communal pattern of living slowly fell away as ambitious men and women wanted to set out on their own, away from group controls. They disliked the constant separation of the family members. Communal arrangements did not permit enough intimacy between husband and wife. Parents

⁹W.J. Goode, The Family, Vol.4 of Foundations of Modern Sociology Series, ed. by A. Inkeles, 19 vols., pp.11-13.

¹⁰Ibid pp.12-13. ¹¹Ibid p.13. ¹²Ibid pp.2-5.

often felt a somewhat empty existence without a close relationship with their children.¹³

Although Society has gone through many changes, they were usually, as in the Israeli Kibbutzim, for the good of the society at large and not particularly for the individual members of the society. Eventually the family unit in some form has survived.¹⁴

The main result of the socialization process is that individuals attain a natural desire to continue the same social process in their children. Parents gain personal satisfaction from guiding and teaching their child but also contribute to the continuance of their particular society. If the individual infant is to survive and consequently the society is to survive in its present form the child must be socialized.¹⁴ One or more individuals must want to socialize him. Socialization, which Elkin defines as "the process by which someone learns the ways of a given society or social group so that he can function within it,"¹⁵ is thus a continuous cycle of society which relies on obligations within a special unit which we call 'family'.

Families or social groupings form households. The number in Canada rose to 5.1 million from 1960 to 1970. This is a rise of two million over the past twenty years. The number of Canadian households is estimated to grow to a level of 7.5 million by 1980. Possible sources of new household formations are not only new families but a rise in the number of

¹³Ibid pp.5-6. ¹⁴Ibid p.18.

¹⁵Elkin, op. cit. p.16.

single persons or several individuals forming their own households.¹⁶ ¹⁸
Also, families now living in shared accommodation intend to set up separate households as soon as they find it economically possible. The structure of family units vary from one society to another, but also vary within each class of the same society. In the United States in 1960, eleven per cent of all households were one-person units, one per cent contained ten or more persons but half of all families consisted of married couples with their own children under eighteen years of age and no other relations or lodgers in the households.¹⁷

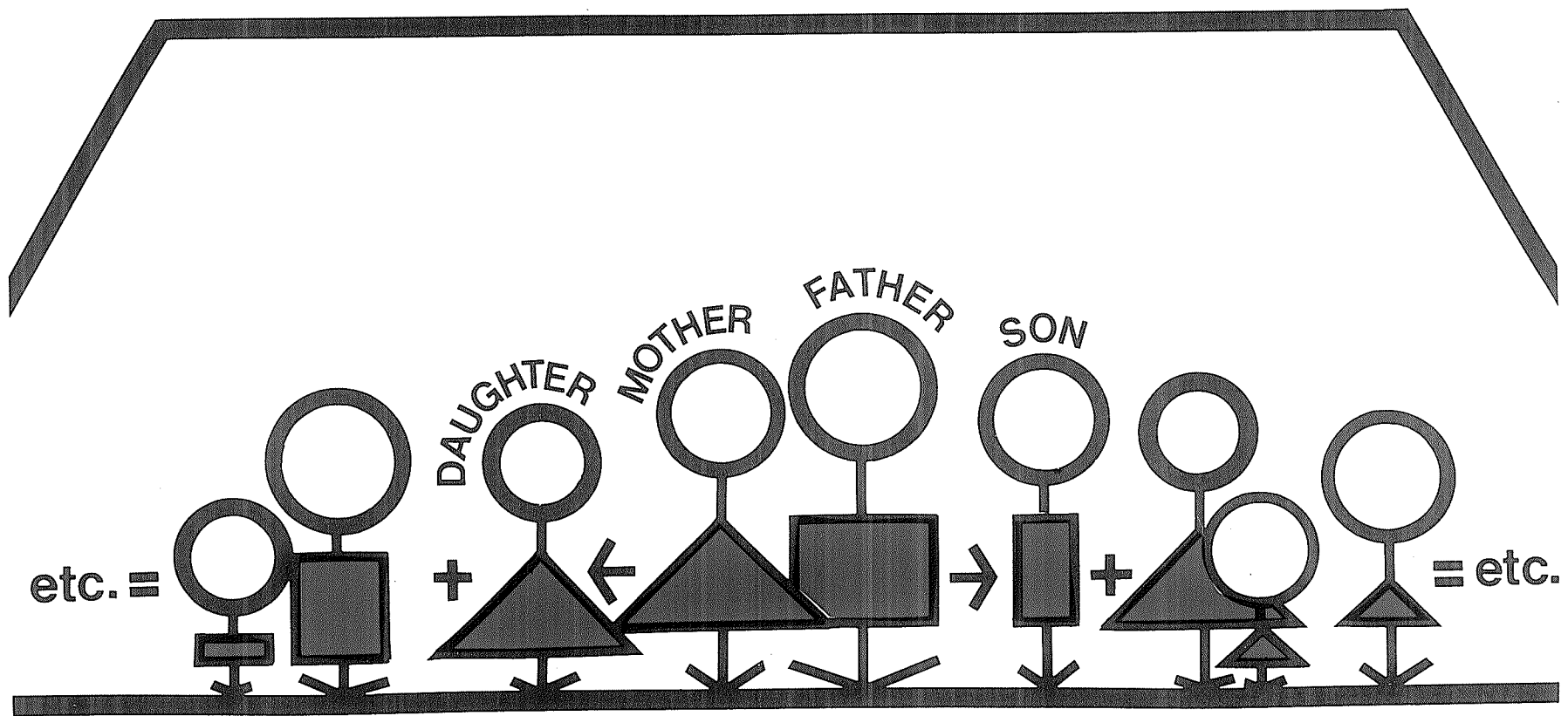
Extended Family

The extended family situation (see figure 7) is the result of a societal ideal that many generations should live under one roof. Although the family retains very close ties, each individual has so many more people with whom he can dispense his social energies, that there is an actual lessening in intensity of emotional ties between any two individuals in this grouping. The unit is more durable than most family formations since it can maintain its identity and collective responsibility if individuals come and go. The cost of maintaining the ill or the aged is also less for each active member.¹⁸ Parents in these 'familistic' or closely knit units rear their children to adjust to the immediate family, preferring that they remain loyal to the family and not go as individuals into the larger society. This extended situation is common in ethnic groups, very often of a working-class status. Because of their economic position, there is

¹⁶Economic Council of Canada, The Canadian Economy from the 1960's to the 1970's. pp.60-63.

¹⁷US Census of Population, Families, 1960 (Washington D.C.: U.S. Bureau of the Census 1963), p.21, cited by Goode, The Family, p.44.

¹⁸Goode, op. cit., pp.45-51.



EXTENDED FAMILY

often a particular need for mutual aid and solace within each household and between relatives and friends in the immediate neighbourhood.¹⁹ The new Canadians, the first generation of many of the ethnic groups, often have great difficulty accepting the tight family roles within which they are born, when they are exposed to the much more lenient values of their new culture.²⁰

Conjugal Family System

Most families in modern urban western countries are conjugal or nuclear (see figure 8). Conjugal is the preferable term when referring to the family system since no 'nuclear' system exists. In these families there is more emphasis placed on the conjugal bond or in the structural form of the family than in other family systems. The marriage is usually founded on mutual attraction and love. Neither the bride nor the groom's family are likely to gain much from the marriage because custom does not demand economic or social exchanges. The death or absence of a mother or father in a nuclear family can seriously impair or possibly destroy the unit since parents play such a major role in a small group. Members of such families, as opposed to those in the extended family, no longer accept without question, the obligation to care for the old.²¹

This family unit, is definitely neolocal. Each couple sets up its own household apart from either set of parents. This system facilitates industrialization by freeing many wage earners from the roles and inherited occupations of the extended family. Workers can be drawn by higher wages

¹⁹D.S. Stern, "The Use of Neighbourhoods by Mothers and Children", pp.8-15.

²⁰Toronto Daily Star, Family Section, Aug.14, 1971, p.73.

²¹Goode, op. cit., pp.51-52.

to occupations most in need of labour. Husband, wife and children live in their own home, fairly isolated from relatives, although social ties usually remain. This family unit is particularly typical of the middle and upper class.²²

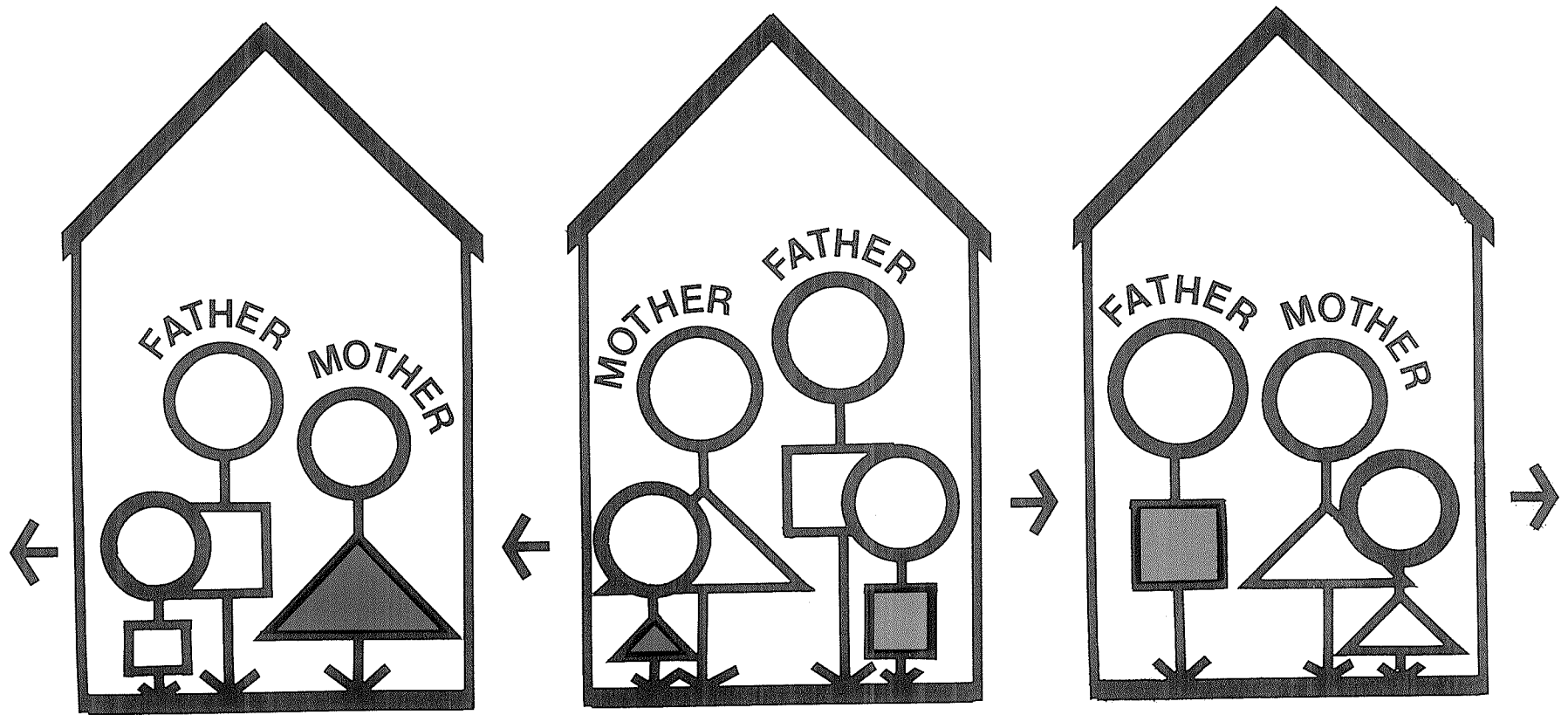
The nuclear unit, in its most progressive form is often called 'atomistic' wherein all members of the family lead exceedingly autonomous lives. This individualistic arrangement is often called the 'decaying family'. Women are less likely to remain domestic or to bear many children. There is a decline in the spirit of self-sacrifice in all the family members.²³ Children leave home at an early age, often before marriage, to set up households of their own. However, the atomistic family does not necessarily suffer a lessening of the emotional bonds.

One-Parent Home

The Child Study Association of America, in its conference in March, 1967, indicated that although eighty-seven per cent of American children lived in two-parent homes, over 6.5 million children lived in a one-parent home, headed by a woman (see figure 9). The review also indicated that actual formation of the model American family may not be as functionally two-parent or as patriarchal as assumed. Further analysis shows that the one-parent family is not only becoming more prevalent since society has lessened the stigma against the unwed mother, but there is no reason to believe that children are adversely affected by such a situation. Psychiatric research emphasises that one-parent homes can, in some cases, be more successful for the development of the child than a two-parent home,

²²Ibid. pp.45-46.

²³D. Spence, "Under One Roof" C.B.C. based on a series of six programs presented under the same title in the series : Take Thirty.



OVER 50% NORTH AMERICAN SOCIAL UNITS ARE NEOLOCAL

CONJUGAL SYSTEM

if the two-parent home is a superficial arrangement under an 'empty shell' wherein people carry out formal duties but no longer show affection or support for each other and where no communication exists within the group.²⁴ Separations within a family, wherein the parents continue to live together unhappily, avoiding divorce, are usually more conducive to problem behaviour in children than actual divorce. The role failure within the home can have a more destructive impact on the child than the withdrawal of a spouse.

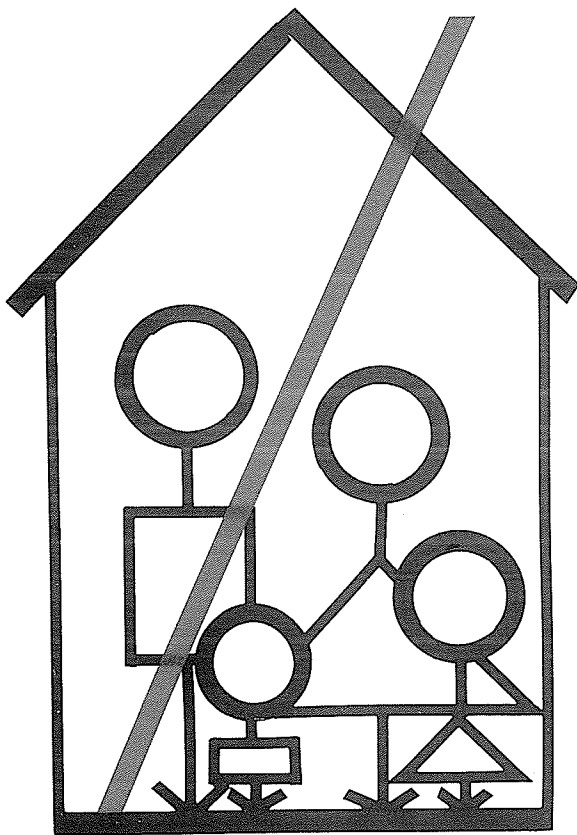
Adoption rules have been relaxed such that many single adults may adopt a child. This increases the number of one-parent households. The resultant decrease in the number of orphan children has produced a definite shortage of adoptable babies.

MARRIAGE/DIVORCE

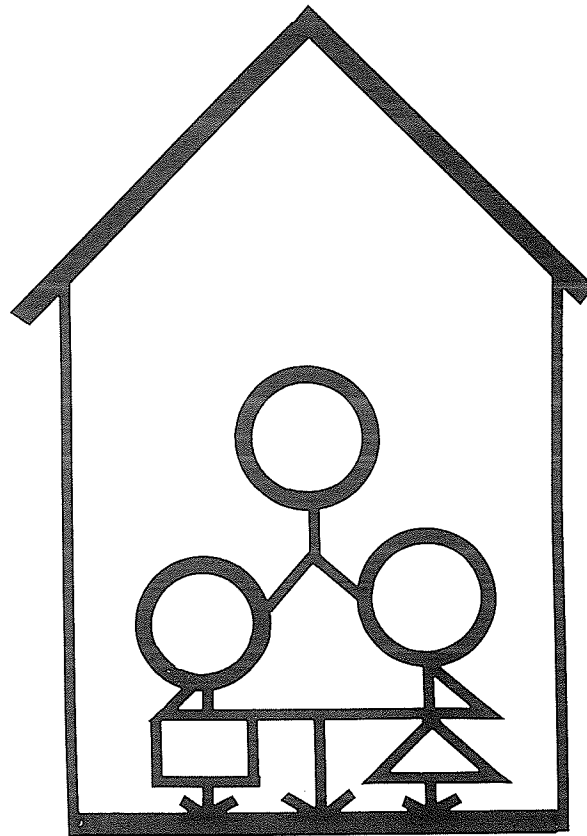
Marriage (see figure 9) in its traditional patriarchal form seems to be dying. One half of the marriages of the future are projected to end in divorce. On first analysis, this concludes a negative influence on marriage. However, the marriage rate although still below the level of the 1940's has steadily increased since 1963. Most experts agree that monogamy will prevail, although constantly redefine itself due to the changing roles of men and women in society. Another observation is that divorcing people usually re-marry. Divorce seems to be merely a contemporary adaptation to the old institution of marriage. Longevity of life has definitely taxed marriage bonds. A lessening of social pressures to endure an unsuccessful relationship has forced a relaxation in the divorce laws.²⁵ Divorce has become easier in a society which boasts marriages of

²⁴Goode, op. cit., p.92.

²⁵M. Hunt, "The Future of Marriage", Playboy, August, 1971, p.116.



NEXT DECADE
1/2 MARRIAGES =
DIVORCE



1967 - U.S.A. - 6 1/2
MILLION CHILDREN
IN ONE-PARENT
(WOMAN) HOME

DIVORCE/ONE PARENT

independent individuals who see no reason to stay together when their developmental patterns are no longer compatible.

Family Size

Although marriages are still the largest single source of family formation, aided by the economic and social conditions of our country, family size is diminishing. The number of children per family is down to an average of 2.3, just over the figure necessary for the Canadian population to replace itself. This is much below the 1960 average of 3.9 children per family. Although Canada has one of the largest school populations, in relation to total national population in the world, the number of pre-school children decreased during the 1960's. However, existing and projected population growth reveals that the child population is now increasing rapidly, although not per family.²⁶ The factors which contribute to the diminishing family size and the increase in non-family households are new attitudes toward marriage and birth control, and the growth in the number of women, both in Universities and the labour force.²⁷ By 1980, it is expected that thirty-five per cent of the total Canadian labour force will be female. Both affluent and low income women are in this group.²⁸

Counselling

Many communities are initiating family therapy centres which deal with the general family conflicts in communication's breakdowns within

²⁶"Canadian Families Getting Smaller," Toronto Daily Star, Sept.8, 1971.

²⁷Ibid.

²⁸Economic Council of Canada, op. cit., pp.71-73.

families.²⁹ The YMCA in North York offers programs for both divorced and separated men and women. Programs are also offered to families in an effort to promote better communications between parents and children.³⁰ The University of Alberta now offers a four year program providing general educational background with special courses relating to family problems and possible solutions.³¹

Non-Legal Unions

Non-legal unions were prevalent in low-income groups, who found such 'common-law' arrangements more feasible economically. What the low-income group termed a 'natural' partnership, the middle and upper-class are today calling 'moral'. The latter have no compunctions upon entering similar relationships which they once frowned upon. However, statistics do prove that marriage is still the greatest form for new households (see supra, p.18 n.17). Non-legal unions are often pre-marital trial situations.

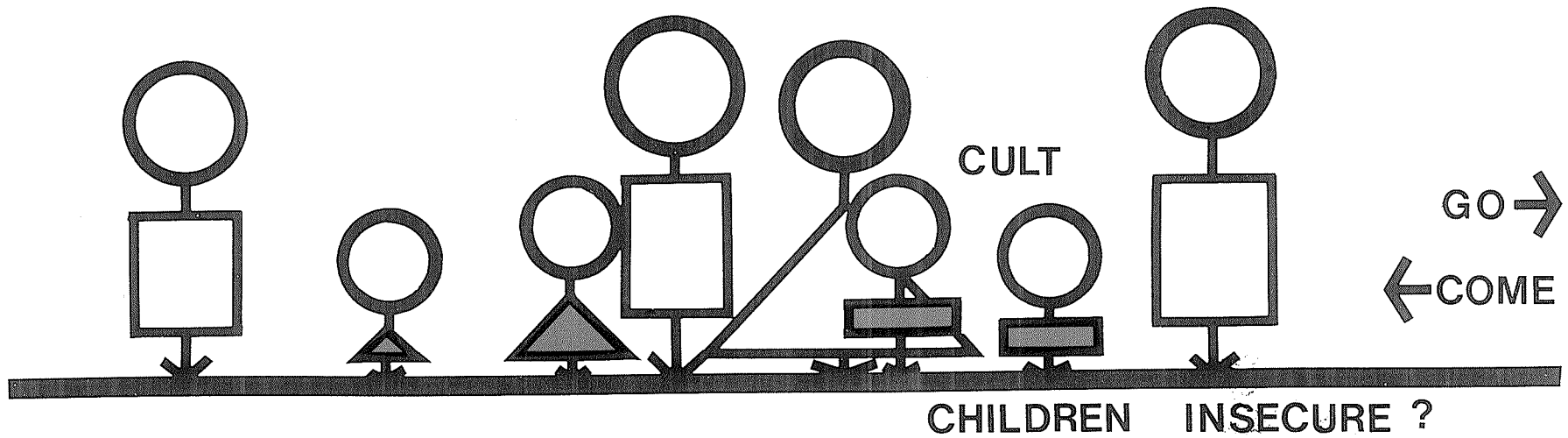
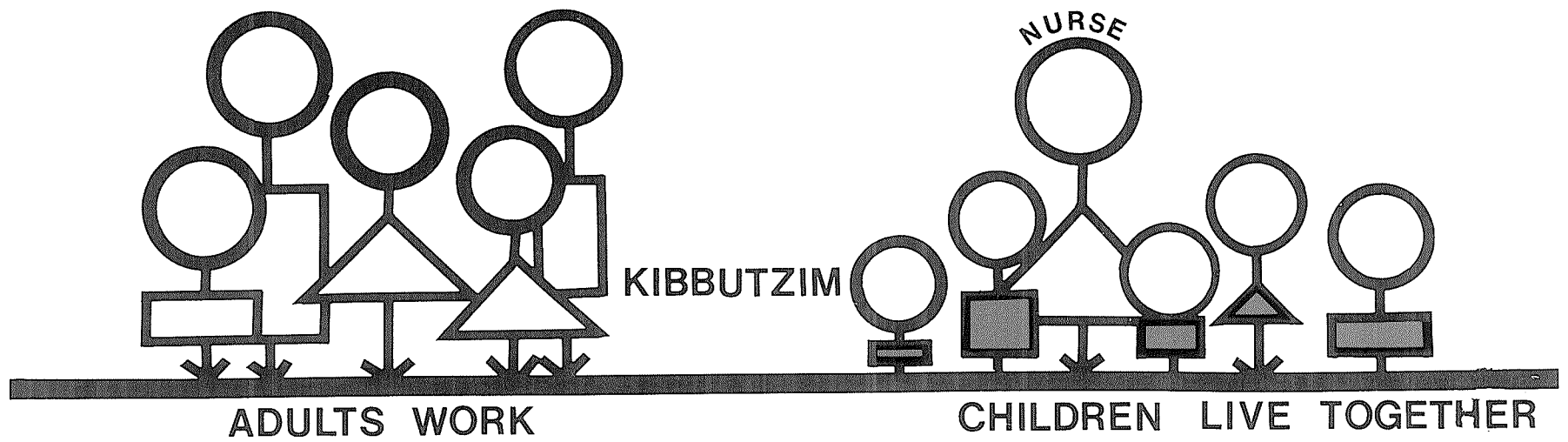
Communes/Cults

Although many experimental group structures (see figure 10) have been formed, none have survived long enough for the results to be measured. Three or four adults usually have difficulty living compatibly very long. The agrarian communities suffer on account of the labour requirements which in small settlements conflict with the ease allowed by new technologies. The burden falls on the male participants while the female again achieves the domestic role which the feminists are revolting against.

²⁹"Community Worked Out," Toronto Daily Star, June 14, 1971.

³⁰"Y.M.C.A." Toronto Daily Star, Sept. 22, 1971.

³¹"University Trained Workers", Toronto Daily Star, June 6, 1971.



COMMUNAL LIVING

Aside from these individual problems concerning physical ability, which in many cases would not be a problem, there is not enough available land to support a great increase in these low-efficiency farm efforts. Since the rate of turn-over within these groups is usually very high, it is unlikely that children involved will experience a great deal of stability or benefit from the opportunity of many fluctuating parent identities.

In the study of Yorkville subcultures, the variety of cults are said to be results of a social pathology related directly to individual family difficulties and basic societal sickness. Both hippie and non-hippie cults, often based on drug marketing, live in a 'present' oriented world in which they see work as conforming to an oppressive competitive system.³²

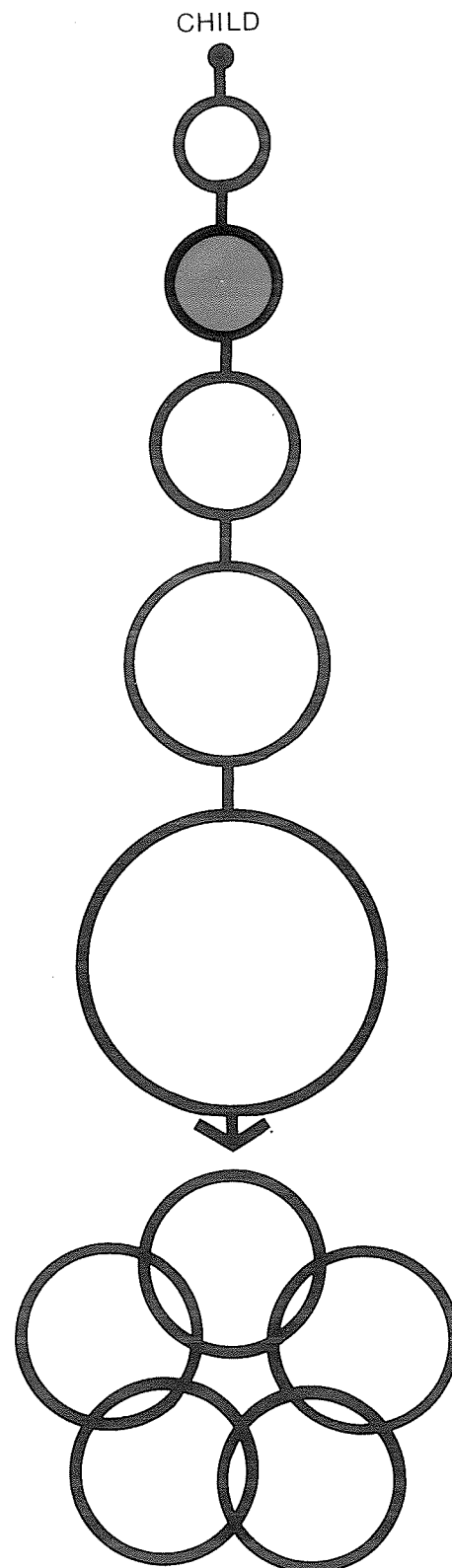
Summary

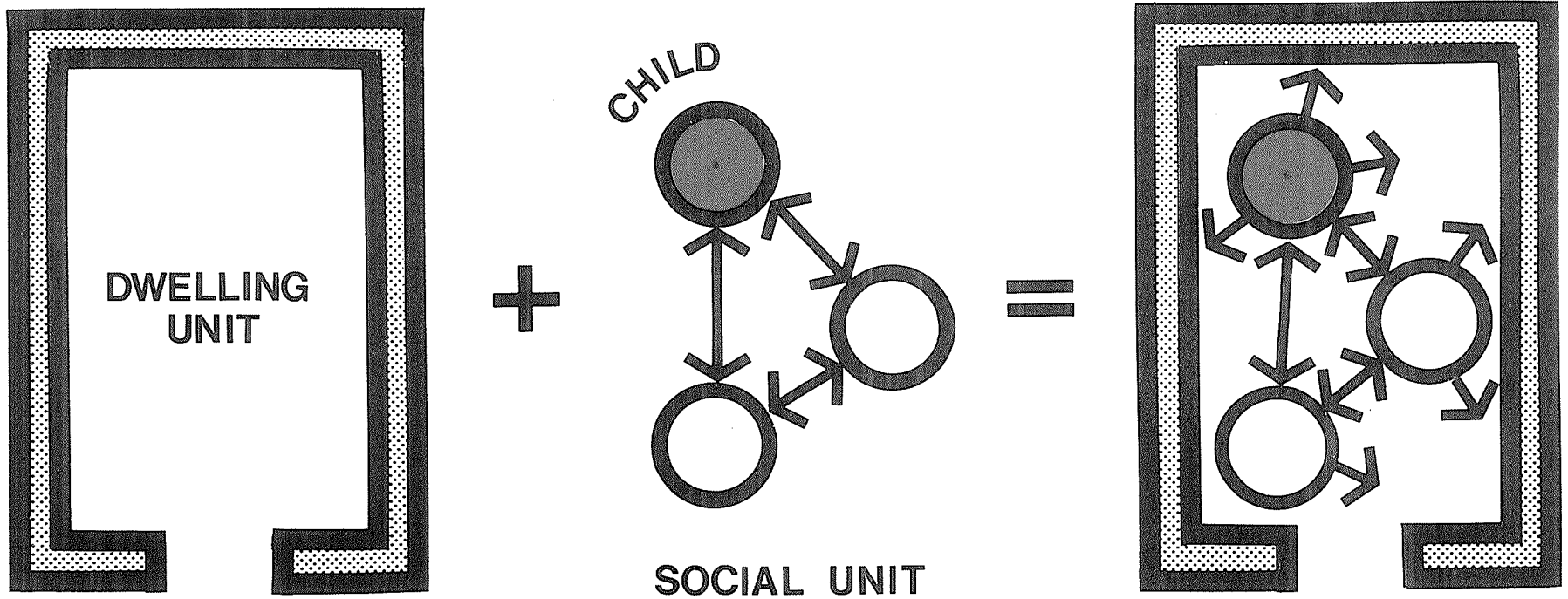
Although we are aware of some of the problems which children experience during the developmental stage of infancy, the implications or the effects of the social unit within which the child is born are not fully understood. To complicate matters, even less is known about the inter-relationships between the social unit and the physical environment within which the grouping exists.

³²"R.G. Smart and D. Jackson", The Yorkville Subculture : A Study of the Life Styles and Interactions of Hippies and Non-Hippies, prep. by G.A. Alampur (Addiction Research Foundation, 1969).

DEVELOPMENTAL INFLUENCES

DWELLING UNITS





INTER - RELATIONSHIPS

DWELLING UNITS

By the time the child can run and jump, the provision of recreational space becomes very necessary. Now the child is learning to occupy himself, to manipulate his own play-things. The normal child thus learns independence but still requires the security of an escape route back to mother.¹ Consequently, many planners have indicated that the 'ideal dwelling' for young children, is one in which there is almost no boundary between the in and the out side (see figure 13). This arrangement allows the child the security of knowing that he may easily run inside for protection. Safdie (see figure 14) elaborates on this idea by proposing that a living space be provided outside for every family equal to that which is adequate on the inside.²

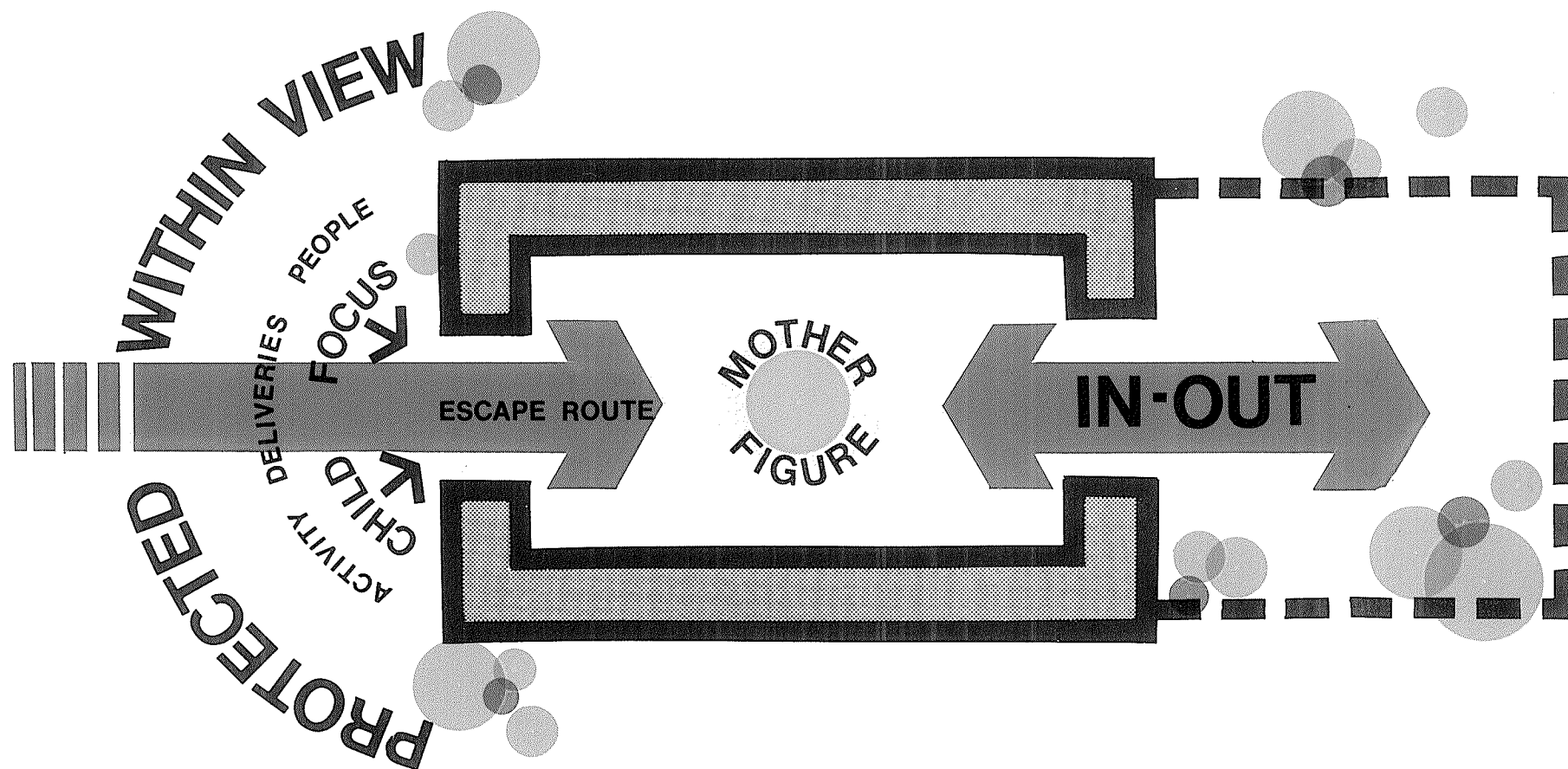
In the cities of today, where towers are prevalent it seems unrealistic if not impossible, to suppose that all children be so housed. From 1953 to 1966, the rate of apartment buildings increased in the city of Toronto from seventeen to twenty-nine per cent or from 50,000 to 160,000 units.³ Consequently the effect should be noted. The relationship between high-rise dwellings and ground level may be the most critical difference between them and single family dwellings.

One of the first observations of the problem in the tower concerns mothers and pre-school children. They seem to have the most difficulty adapting to apartment living. According to building by-laws, recreational

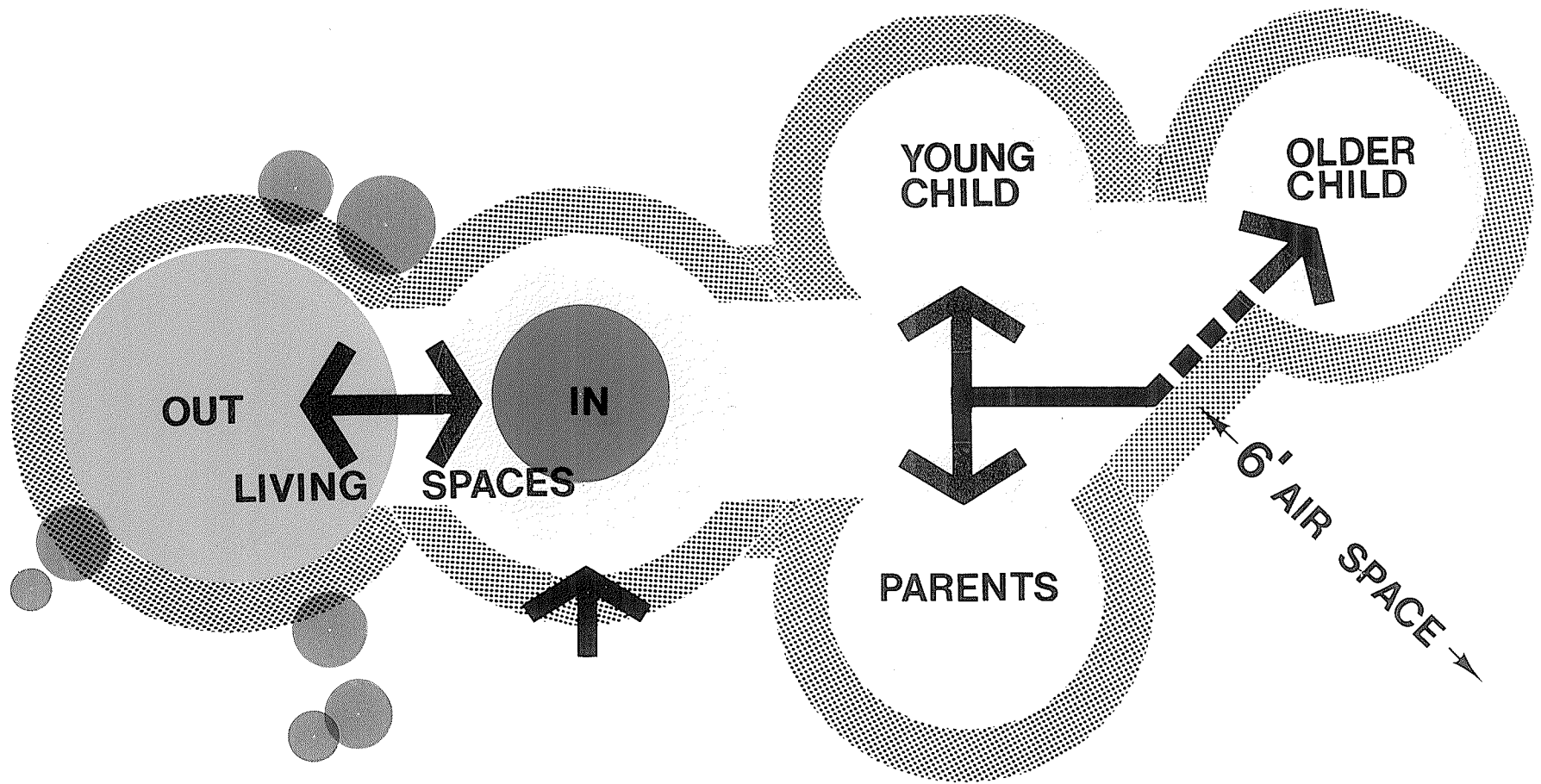
¹A. Bengtsson, Environmental Planning For Children's Play.

²M. Safdie, Beyond Habitat, ed. by J. Kettle, p.158.

³E. Annau, "Housing," People Design/II, Canadian Interiors, December, 1970, p.26.



CHILD'S FIRST PLAY SPACES



CRITERIA FOR FAMILY ?

facilities must exist on every high rise site. Mothers are compelled, not only to accompany their children to the play areas, but to constantly supervise them as well. This could conceivably have an adverse affect on the development of independence in the child.

Personal observations indicate that apartment dwellers hardly use their balconies. Unofficial records indicate that only three out of five use their balconies at all and half use them only once a week. The typical rectangular shape does not seem conducive to comfortable conversation or play grouping. Dust and wind often interfere with activities. Many railings do not provide adequate protection for children, particularly in low-income housing. These descriptions are not always true in the more spacious but middle class towers, where balconies are very often large and weather protected.

Michelson refers to a study by D.M. Fanning comparing the health of mothers and children in self-contained housing to those living in three and four storey apartments. Apartment dwellers suffered a morbidity rate fifty-seven per cent greater than those living in houses. Rates of neuroses increased directly with the height of the block.⁴

The results of the study were attributed to the social isolation of women in apartments which had no outside extension of the family living space. The health of apartment dwellers who did not have any children was excellent. Unfortunately no particular conclusions concerning the neuroses in children is evident.

⁴D.M. Fanning, "Families in Flats," British Medical Journal, Vol.18 (1967) pp.382-86, cited by W. Michelson, Man in His Urban Environment, pp.161-62.

A study which may reveal causes of frustration in children living in the high-rise is under way in the Borough of North York, adjacent to the city core of Toronto, where almost one half of the population lives in high-rise buildings. The study concerns the effects, if any, that high-rise living has on school children. Included are comparisons of the academic levels and after school activities of children from high-rise and single family homes. The child's sense of self esteem, development of motor skills and any behavioural problems will be observed.⁵ The Kubas report for the same geographical area advocates more low and medium density development in the area in an effort to curb the social problems which he feels are a direct result of the confined living quarters. He refers to an untitled study done in the United States which discovered statistical relationships between high-density living and various social malaise, as well as to a survey indicating that seven out of ten tenants disliked their accommodation, hoping to leave as soon as possible.⁶ The ratio with families with young children is not given. Again these are observations of specific high-rise buildings, not an analysis of the cause of the problem.

Vera Denty, a child psychologist at Mental Health Clinics in the suburb of Scarborough, outside Metropolitan Toronto, deals with the problems of children living in high-rise towers in that area. She believes that the fairly uniform apartment suite layouts do not usually suit the various needs of the individuals living within, particularly the play of normal active children. Children are often frustrated when they are prohibited from activities of play or told to stay quiet on the account of

⁵"Study will watch effect on children of High-Rise Living," Toronto Daily Star, June 1, 1971.

⁶"Curb on high-rises," Toronto Daily Star, August, 1971, pp.1-2.

the adults in the family or immediate neighbours. From accounts of child frustrations, the main problem seems to be a lack of adequate interior spaces conducive to the various operations of a family and similarly a lack of exterior space with direct access to the living unit.⁷ Such observations do not prove that these are the major problems or that these are the only problems. Architects require specific information concerning the needs of the child for normal physical and mental development or the reasons for their existing behaviour in order to effectively manipulate the environment for the child rather than permitting the opposite situation to prevail. Until more than assumptions about apartment facilities exist, doctors and psychologists must treat the manifestations of such problems (unmanageability, phobias, sleep disturbances, speech difficulties, and so on)⁸ instead of the designer dealing with the cause itself.

Population projections show an increase in urban density. This places even more emphasis on the importance of fully comprehending child development needs so that the environment may be designed primarily as a vehicle in contributing to and not hindering such development.

The designer can consider investigations which have been concluded on the effects of the high-rise tower on the play of young children (see figure 15). In London, England, reports show that seventy-two per cent of the children examined seldom play with children of their own age when they live above the fourth floor of any apartment building. Similarly, in Stockholm, children who live on any of the lower four floors of the

⁷"Mothers of Pre-Schoolers," Toronto Daily Star, June 26, 1971.

⁸Ibid.

building play out of doors at least an hour longer each day than children above them. They also went in and out of the building twice as many times, either alone or with playmates, as did the children living higher up. Children living above the eighth floor were almost always accompanied by an adult.⁹ Many schools in the city of Montreal are providing bicycles and tricycles in the school yards only for children living in the upper floors of apartment blocks who very often never learn how to ride since they seldom play outside. This is a first hand observation.

One cannot be sure why children living in the upper floors of buildings behave in this way. If there is a particular safety problem concerning the automobile traffic, children on every floor would probably be prevented from leaving the building unattended. The results of the investigations suggest that a possible psychological fear exists, relating to the vertical distance from grade level. The parent exhibits caution, feeling too far removed from the child if he plays outside. The result is that this child does not venture outside alone or as frequently as the child living nearer to grade. There is no evidence that it is safer for a child living on the third floor than on the tenth floor to go outside. There is also no evidence that children are psychologically hindered by the longer elevator ride when they live above the fourth floor. If children are plagued with delinquency along the internal 'streets' of the building, a problem in many densely populated slum areas, it would possibly effect every child.

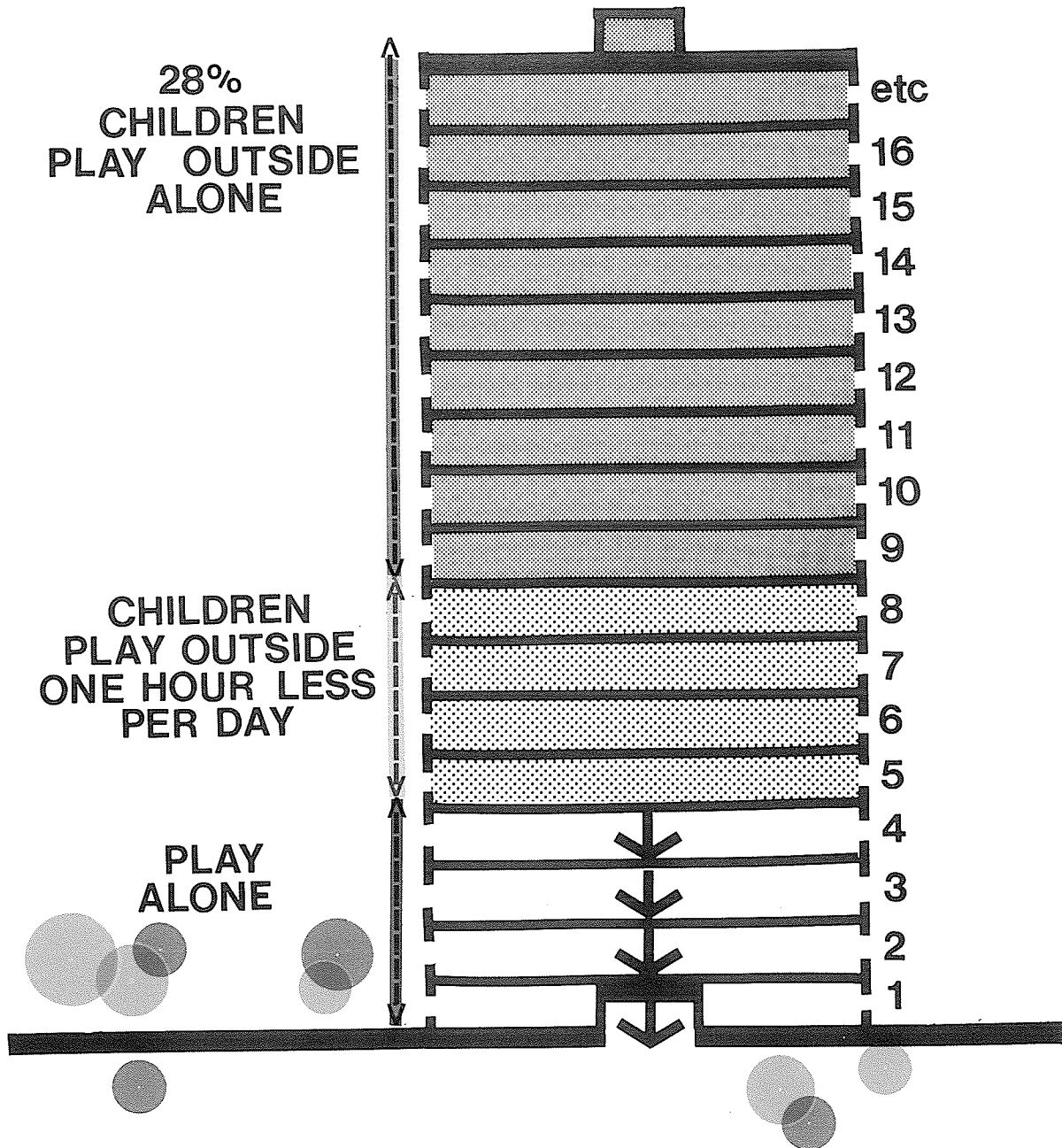
As indicated, there are many facts which architects require before they can provide good physical solutions. However, there are some

⁹Bengtsson, Environmental Planning.

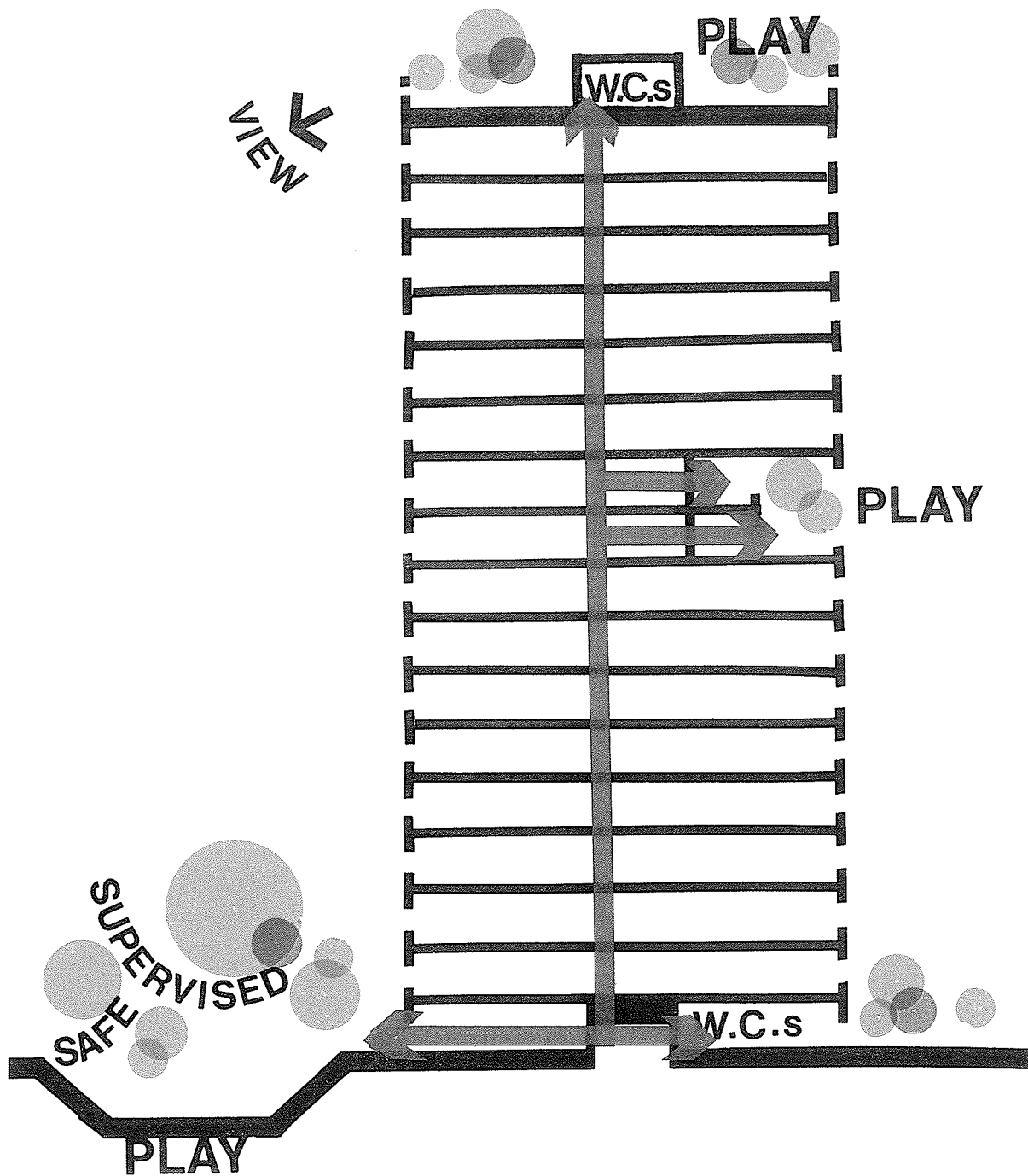
immediate measures which can be taken in providing better recreational facilities for children in the high-rise (see figure 16). One is the provision of washrooms at grade level, either within the building or adjoining the playground. Another is proper supervision in the playground, particularly for the youngest children. This supervision would be of particular benefit in poverty environments where children need the experience of relating to other adults who could perhaps answer their questions. This constant supervision, along with a well-designed play space could alleviate the conflict between children and traffic. Another solution is to provide similar play conditions on the roof tops of the blocks as in Corbusier's design for his apartment at Marseille. This could easily be an alternative play area when lack of space exists on grade or more probably could be another play experience for children where they would hopefully have the added advantage of a long range view. Children living on the upper floors would have less distance to go for play, if such a concern does exist. Children from lower floors would be entirely away from traffic and experience the view as well.

The security of the direct 'escape route' back to mother still does not exist for the child beginning his childhood career of play, while living in an apartment. Perhaps, better balcony design would contribute to a solution. However the child would still have to eventually make the plunge into the unknown, as contact with other children is a necessary part of his development.

There are no actual facts concerning the child's developmental needs which indicate that these physical relationships are the most important considerations. Again, more answers are required. However, the first four or five years is the period of the most rapid physical and mental



CHILD IN THE TOWER

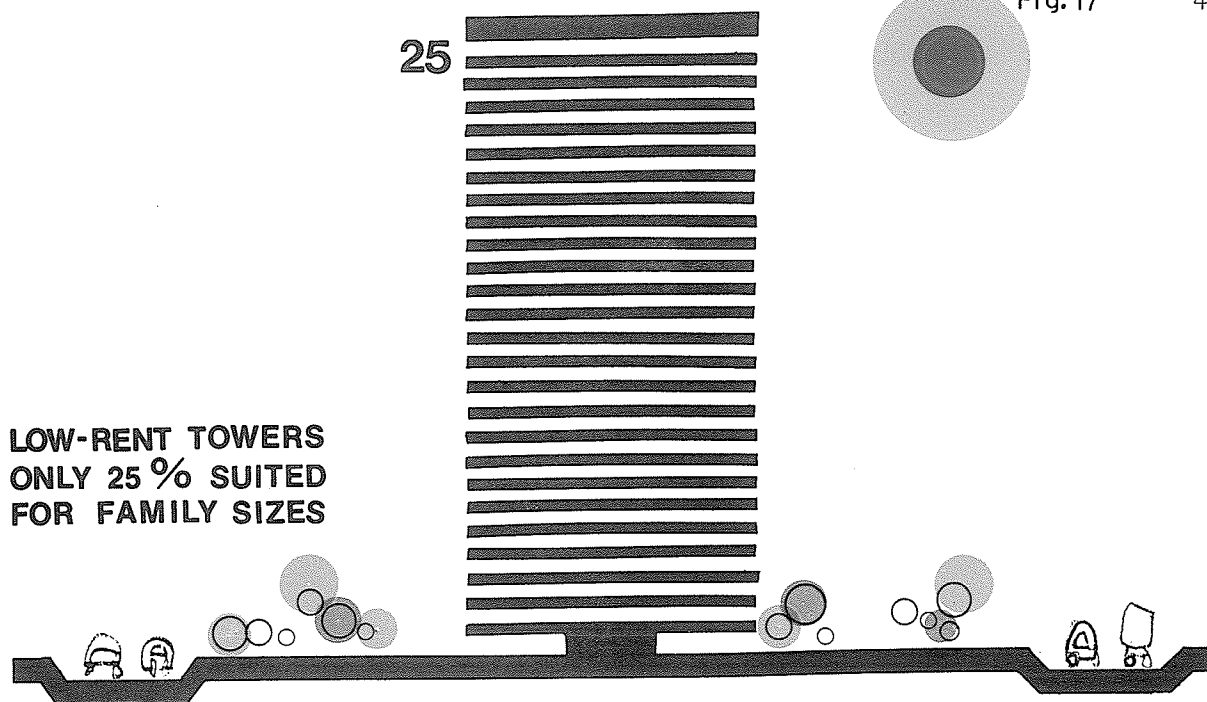


POSSIBLE SOLUTIONS

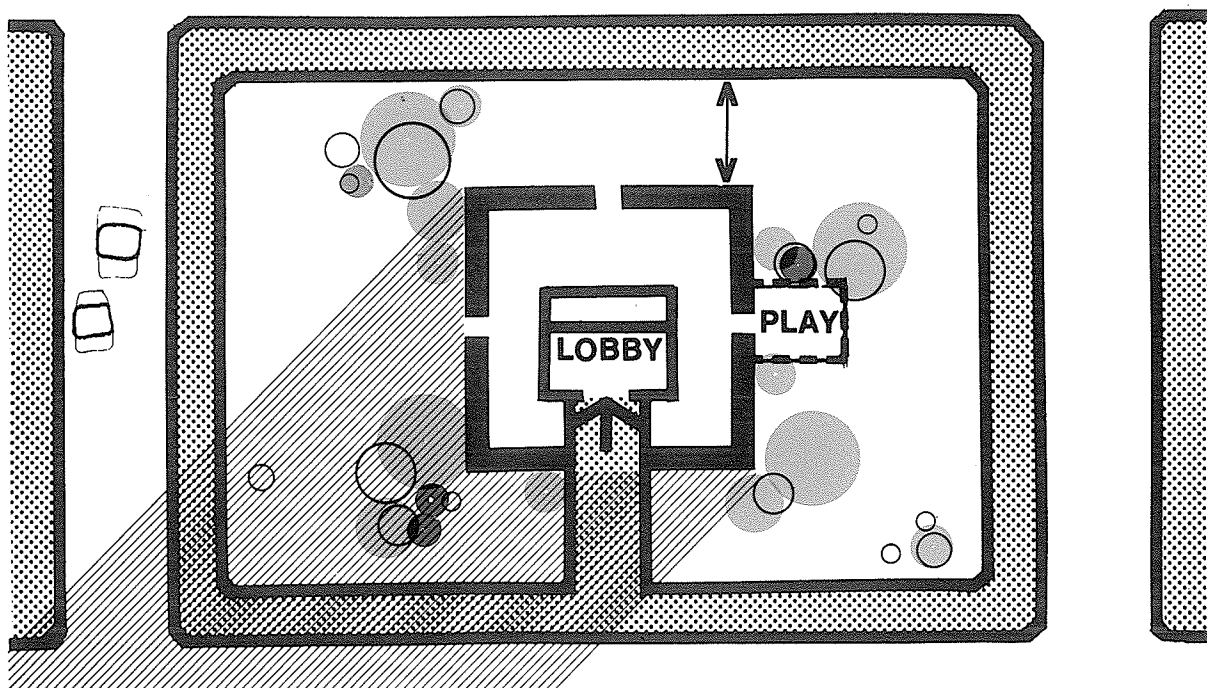
development of the child, a time in which he is most susceptible to environmental influences.

Conditions in the city core of Paris, France, where apartment blocks are an acceptable way of life and almost no private houses or complaints about high-rises exist, may give an insight into why our particular towers are apparently undesirable for so many people.

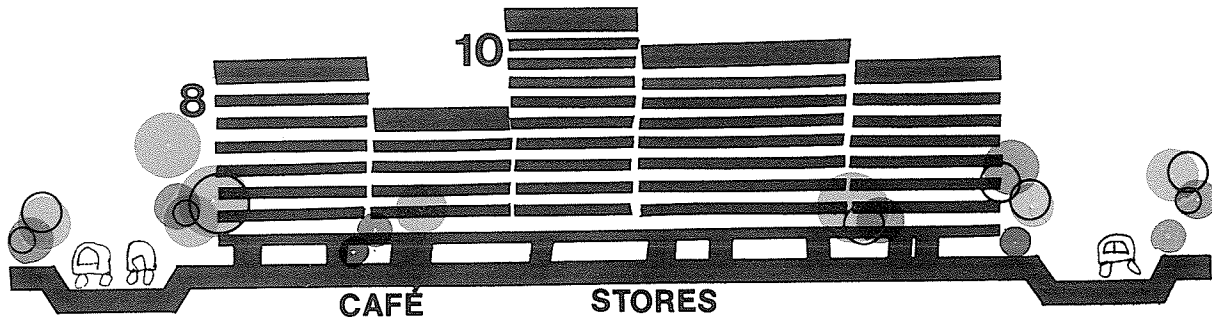
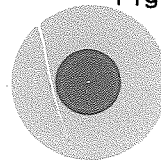
An immediate comparison is the difference in height. Our towers tend to reach twenty five to thirty stories whereas the older blocks in the city of Paris, are seldom higher than ten (see figures 17 and 18). Consequently, they are much smaller in scale and do not dominate the surroundings as our towers seem to do. Developers in Toronto, receive a bonus of extra floor space (height) within the building, if they turn more than fifty per cent of their site into landscaping. This resulting area is usually flat monotonous, shadowed space which only serves to isolate the building from sidewalk activities and contact areas where people could meet or at least feel a sense of community. The buildings in Paris are proximate to the pedestrian sidewalks, leaving a protected inner courtyard within the block serving for private residents' functions while allowing light and fresh air to reach the lower floors. Our towers boast a formal interior lobby, rarely open to the public, especially children. Many public activities occupy the street level of the Parisienne blocks. Shops and cafés provide focal points, a place for people to gather with a resulting sense of community, although actual social contact is not necessary. Perhaps by introducing amenities and activity spaces, conducive to people interaction of all ages, high-rise areas in our cities would lose some of their alienating qualities and offer a sense of neighbourhood to the residents. The resulting activities would hopefully have a positive



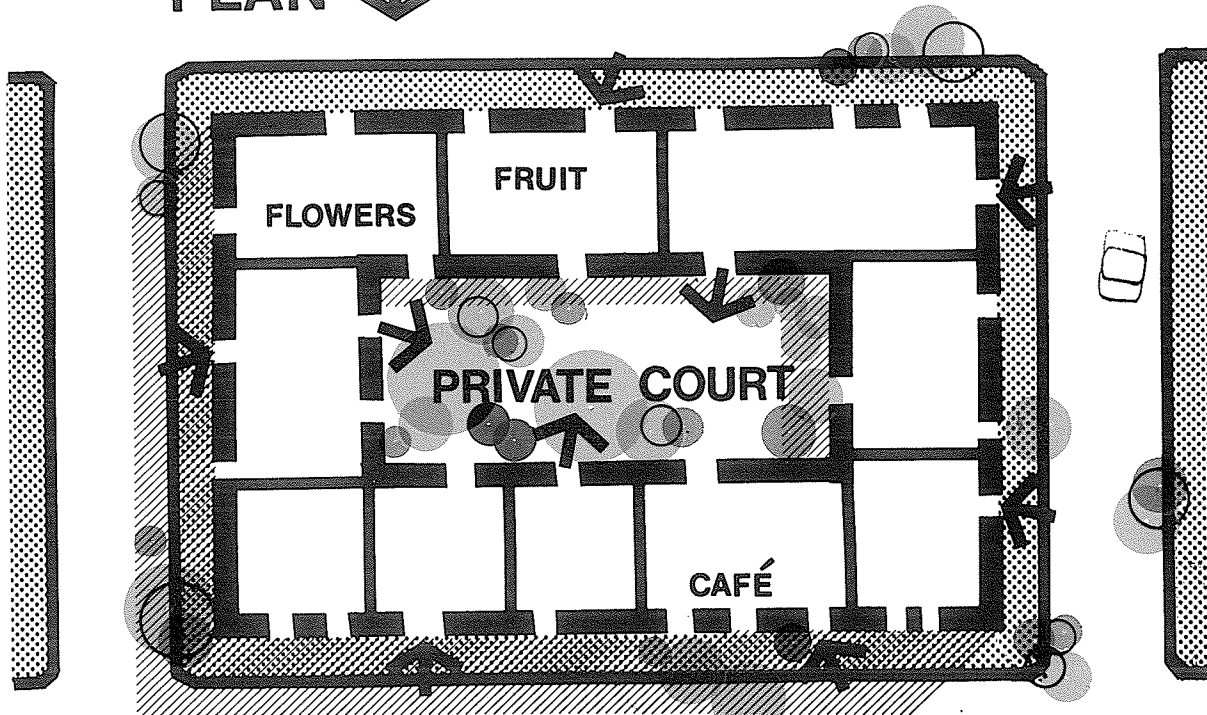
ELEVATION
PLAN ↕



TORONTO
TYPICAL APARTMENTS



ELEVATION
PLAN



PARIS TYPICAL APARTMENTS

effect on the child, by giving their homeplace a feeling of human scale and identification.

Although the effects of one of the child's early developmental spaces, the dwelling unit, is prevalent throughout the city, the problems seem to become more acute in low-rental or subsidised housing areas. The rise in the number of households formed in urban centres has caused a definite housing crisis, which first effects the low-income group. There is a particular urban renewal and public housing pressure felt in Canada. Nearly one million Canadians, naturally including many children, are housed in sub-standard dwellings. One quarter of these are in large cities, mostly concentrated in older metropolitan sections. By 1980 the annual new housing demands in the twenty-nine largest complexes in Canada will probably be as great as the entire national demand in 1970.¹⁰

The economic and social costs of poor housing and urban decay are bound to mount sharply unless long range rehabilitation and preventative measures are made. The added problem of displaced families is a direct result of urban renewal.

In the 'Program for an Urban Canada', the Federal Task Force on Housing and Urban Development prepared a 'Declaration of Principles' concerning primary goals and priorities. Following are principles four and five:

4. Within the natural constraints of geography and necessary economic and social limitations, the aim of government policies should be to generate sufficient housing stock of various forms so that all Canadians may exercise their own freedom of choice as to the style and tenure of housing in which they live.

¹⁰Economic Council of Canada, The Canadian Economy from the 1960's to the 1970's, pp. 187-92.

5. This fundamental freedom of choice should not be restricted to those able to compete in the private market, but should also be an underlying principle of public policies to assist low-income groups.¹¹

There have been many housing schemes researched which would allow fairly high densities and still offer variety and planning arrangements suitable for individual or family. The trend to smaller families lessens the problem.

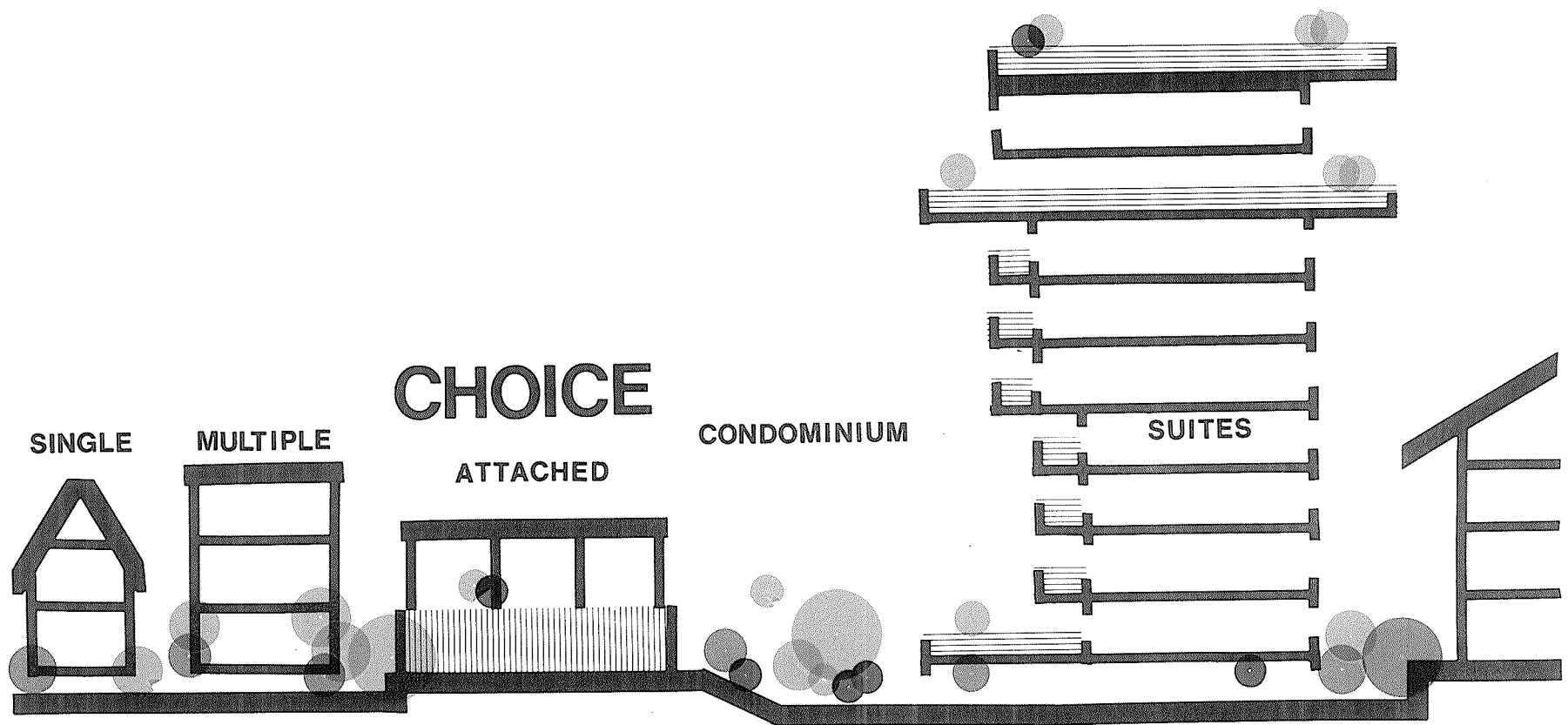
But the free choice (see figure 19), for all incomes is not available under today's conditions while public housing remains a political football and largely in the hands of developers. There seems to be a continual practice to demolish existing urban homes in order to construct, with tax payers money, accommodation apparently for low-income groups. The resulting high-rise towers offer less than one quarter of the units of suitable size for a family.¹²

Consequently, low-income family groups have difficulty finding urban accommodation. The detached dwellings in the suburbs are either of a size and price as to make them available only to the middle-class, or else they are not adequately serviced by public transit to the city core and job opportunities. The shift of many manufacturing concerns to suburban locations has solved some problems while creating others which will not be elaborated in this thesis.

A pleasant alternative to the tower is attached housing. However, there are few cities in Canada which will permit subdivisions of properties for individually owned attached housing. This is only permissible for

¹¹Report of the Federal Task Force on Housing and Urban Development, Paul T. Hellyer, chairman, p.22.

¹²Dian Cohen, "Poor find low income housing is hard on their pocketbooks," Toronto Daily Star, July 2, 1971.



DIVERSITY OF HOUSING TYPES

rental projects.¹³ Although condominium housing brings home ownership within reach of many people, those against it conjure images of instant 'slums', of large families crowded into the units. However, a recent survey by the Condominium Research Associates indicates exactly the opposite. It concludes that condominium town houses average 1.2 children per household, whereas the National Housing Association's single family housing averages 1.7. The ratio of people to bedroom is lower in condominiums than other types of housing, such as the single family home and apartment rental.¹⁴ Renovations of old row houses into fashionable town houses further indicates that they should be considered more than just tenements. This practice is revitalizing the city by cleaning up the old, retaining the smaller scale and bringing the middle-class back into the core, from the alienated suburbs.

If such conditions could be provided for the low-income group, not able to participate in expensive renovations, the city would finally be offering an unrestricted choice advocated by the 'Declaration of Principles'.

Another housing alternative is the mobile home. Over thirteen per cent of all single family homes built in Canada last year were mobile, but few were allowed near the city. Most went to construction sites and other temporary locations or rural areas.¹⁵

¹³H. Michell, ed. "Too Much Red Tape," Canadian Homes Magazine cited by Canadian Interiors, May, 1971 pp.21-22.

¹⁴"Survey Shows Fewer Children in Condominiums," Toronto Daily Star, May 29, 1971, p.1.

¹⁵Mitchell, op. cit., p.22.

A system of subsidized rents has long been discussed as a method of alleviating the stigma of the housing tract. The new town of Thamesmead in London, England is attempting such an arrangement whereby a variety of income groups may live within the general housing scheme. The income status of each household is not apparent.¹⁶

Both housing types and housing conditions influence the inhabitants to some extent. The type of housing has a particular influence on the health, behaviour and attitudes of the inhabitants, particularly if it is extremely inadequate.¹⁷ More moderate effects of the environment are as yet unmeasurable.

A pathology occurs particularly with people who are not among the more adaptable middle-class and are forced by urban renewal from a neighbourhood which has been congruent with their life style. However, relocation of a neighbourhood en masse (see figure 20) or the planned renewal of an area without relocation (see figure 21) are common suggestions which perhaps could have a beneficial effect provided that new facilities suited the needs of the residents. However, information concerning the nature of the inhabitants, which would be of great importance, is usually over-looked in these schemes.

Children are usually ready to accept something new and different but will become particularly anxious if unsure of the outcome of the move or the renewing of their neighbourhood. The sight of housing being demolished is disturbing, since their own home, in whatever condition it may

¹⁶A. Gerry, Constraints (unpublished report in conclusion to CMHC Travelling Scholarship, University of Manitoba, 1971, p.9.

¹⁷W. Michelson, Man and His Urban Environment, pp.151-52

be, is particularly precious to them. Such urban changes should be explained early in the planning, in a manner easily understood by children, perhaps by pictures, or stories.¹⁸

Improvements in housing have not shown extreme changes in residents if they experience serious problems which are social in origin. However, one usual benefit of better housing conditions is shorter child illnesses and consequently better school attendance.¹⁹

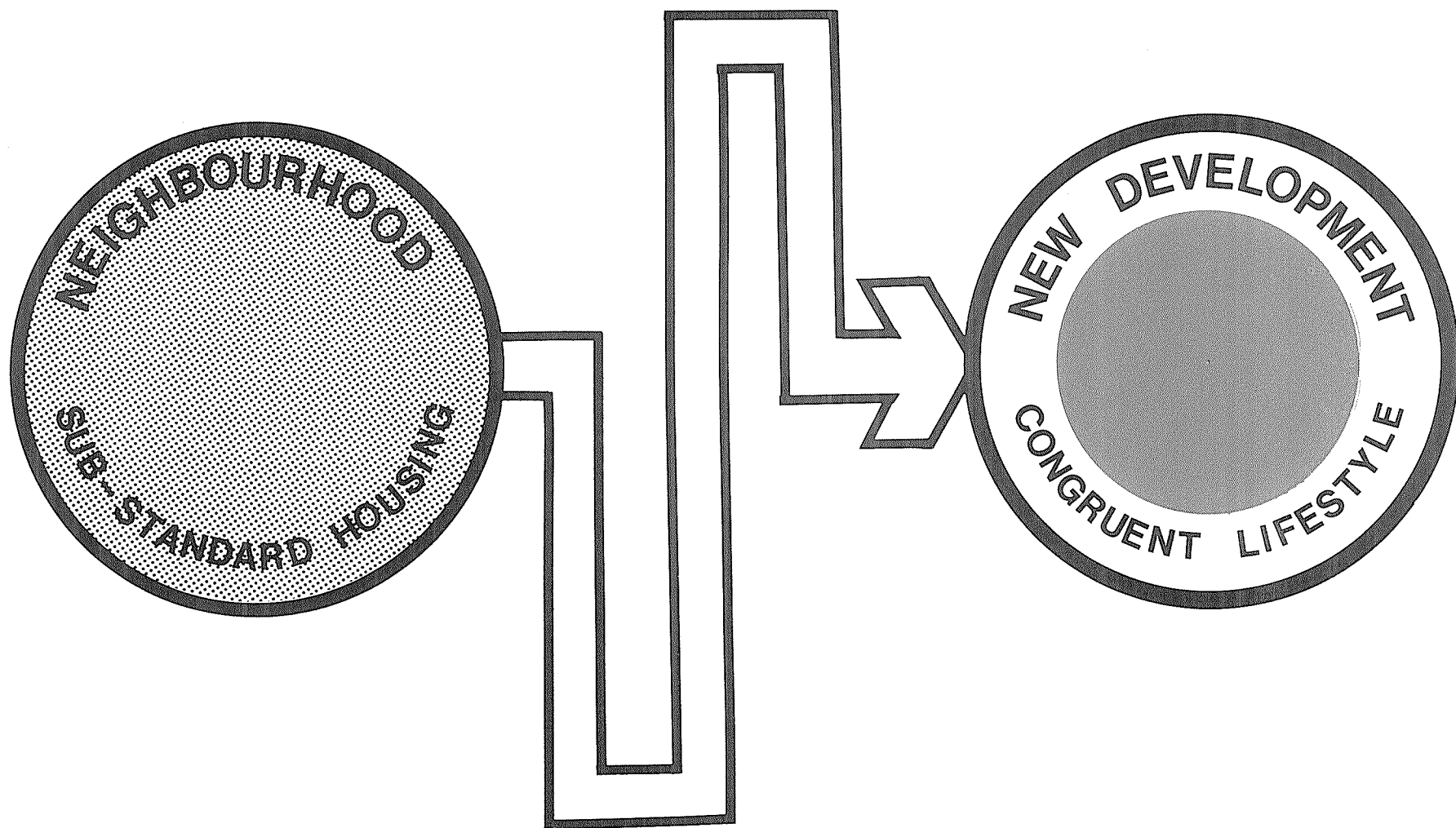
A study concerned with public housing in Vancouver has outlined many safety precautions which should be taken to improve existing public housing 'tracts'. The area includes street planning and identification of access lanes where children inevitably play. Many sites fail to provide even fenced areas for young children. Accidents have occurred where railings and windows are not 'child-proof'. Solutions and specifications to some of the problems, many which could be fairly easily resolved, are the result of the study (ie., railings, should be at least four feet high, with vertical bars not more than 4-3/4 inches apart and the bottom bar near the floor).²⁰

The entrance to house or apartment block is a focal point where children gather during the 'in-between' times, before meals or after school. The small child feels secure here, the older child finds a place to congregate for inactive, informal participation or to merely observe the street action. Christopher Alexander advocates, in his studies for

¹⁸E.D. Cizek, "Children's Perception and Values in the Urban Environment," (unpublished M.C.P. thesis, M.I.T. 1966), pp.149-52.

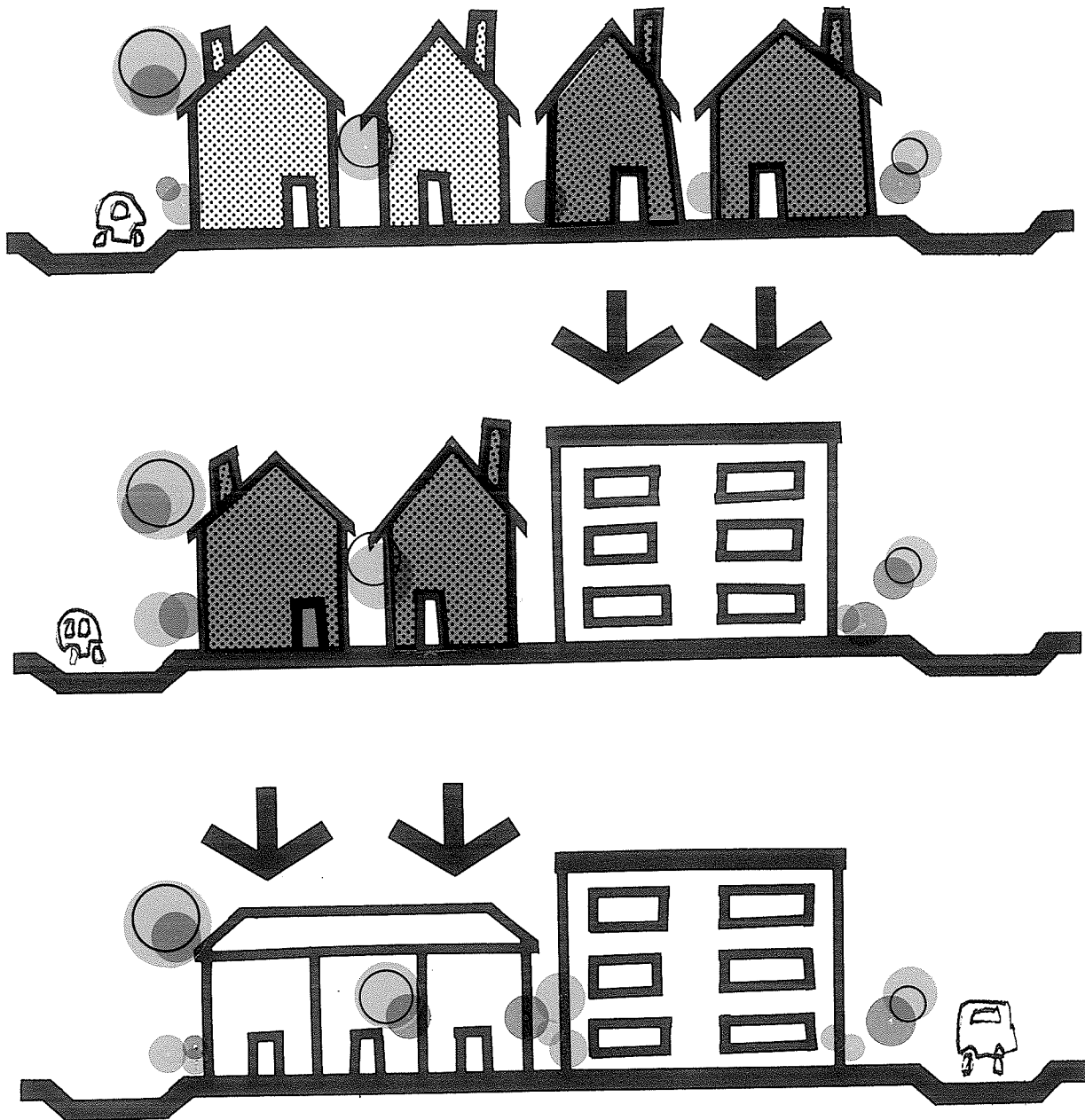
¹⁹Michelson, op. cit., p.152.

²⁰Joan Adams, "A Tenant Looks at Public Housing," The Canadian Architect, Vol.15, No.1, January, 1970, pp.27-34.



RENEWAL RELOCATION EN MASSE

Fig. 20



**RENEWAL
PHASING OLD & NEW**

Peruvian families, that each dwelling should have a recessed entrance, with a transition zone from the street. The idea was to provide a feeling of privacy and security from the public street, allowing one to observe the public while protected within the recess. The entrance is enhanced as a focal point for casual social interaction with friends or family.²¹ Problems with such close spaces off the public thoroughfare in our cities are obvious.

The child plays near entrances because of their proximity to activity. The concept of segregating vehicles and deliveries to the rear of the home, while keeping the front door as a pedestrian entrance, ultimately fails. The constant use of the rear door attracts children and adults to this facade, leaving the 'safe' door unused.

Further studies concerning children's perception in the urban environment indicated that garbage, broken fences, heavy traffic, were definitely noticed and scorned by even the smallest children. Familiarity with their neighbourhood and home place did not lessen their dislike of the disorder. If anything, the poverty environment made them think that the new and clean was always best. Trees, grass, cleanliness, safe play areas, were some of the highest values in their environmental priorities discovered in this thesis.²²

²¹Christopher Alexander, et al, Houses Generated by Patterns, pp.170-76

²²Cizek, "Children's Perception", pp.149-52.

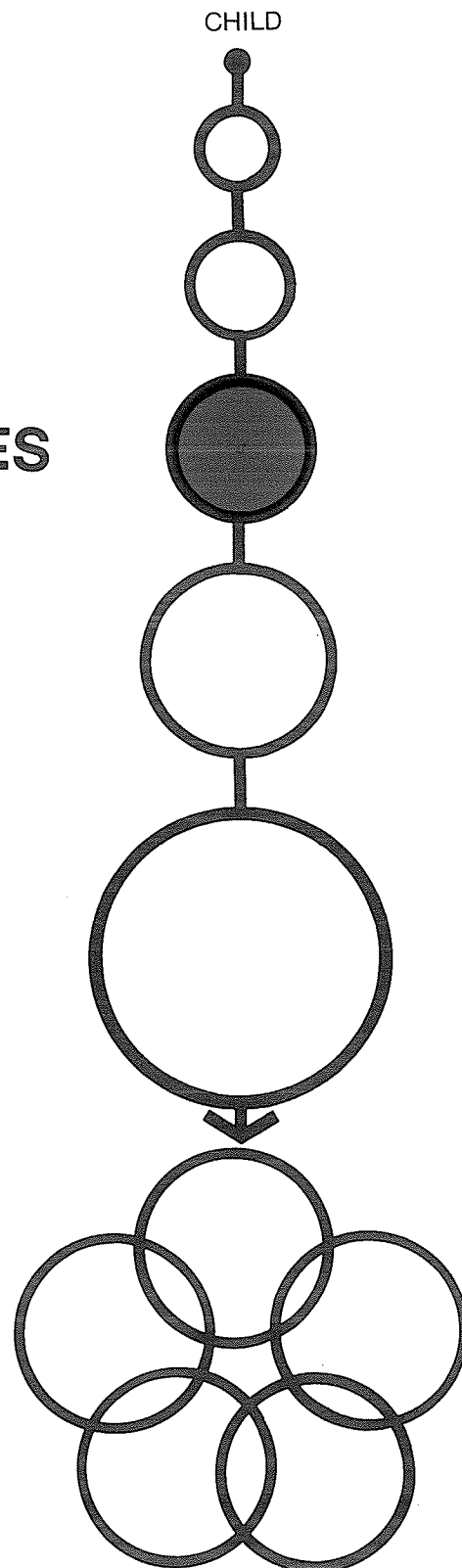
Summary

Although housing is a definite urban problem it appears at present to be out of the designer's control and into the developer's unsympathetic hands. As discussed, sociological observations concerning the effects of housing on inhabitants are available, but the need for further exact evidence is obvious in order to determine the reasons behind the problems. Although the living accommodation is the most immediate environment for the child, the first shell, the psychological effects of the child's relationship with those living in the same household has perhaps as much or more consequence than the physical form of the house itself.

However, the full extent to which the physical environment can effect the mental being is still unknown. Consequently, the relationship between persons living in the same household could possibly be altered by a change in physical surroundings. As mentioned, serious social problems do lessen environmental effects. Perhaps physical and human renewal have a more direct relationship to each other, and in many cases must be inter-related before any renewing can be achieved at all.

DEVELOPMENTAL INFLUENCES

DEVELOPMENTAL SPACES



DEVELOPMENTAL SPACES

At approximately two years old, children begin socializing in a minor way. They now play outside for longer periods of time. Sentences are completed without conjugation or declension. Language is something which a child must accept although it is often difficult for him to understand that words stand for things without any apparent justification.

The child's ability to represent something (semiotic function) is now apparent in his forms of play and expression. He uses imitation, games of pretending, (symbolic play), drawing, (graphic images), and mental images or internal imitations. At this stage, children confer in their nascent language, although upon observation they hardly listen to one another. About the third year the child speaks in full sentences although this depends to a great extent on his experiences. He now has a growing realization of himself and reaches what is termed by Piaget as the "Crisis of Opposition", the need for ascertainment and independence evident in his play.¹

The evolution of a child's drawing is the greatest measure of his intellectual development. His first drawings are graphically pure, he can draw circles but not straight lines. One period of drawing progresses into the next, a developmental stage is never left out. His spacial intuitions are always topological until he learns the laws of depth and perspective. A child draws what he knows long before he draws what he sees. The result always has a realistic intention. When a child is older, usually about six or seven, intellectual knowledge begins to over-ride

¹Jean Piaget and Barbel Inhelder, The Psychology of the Child, pp. 51-63.

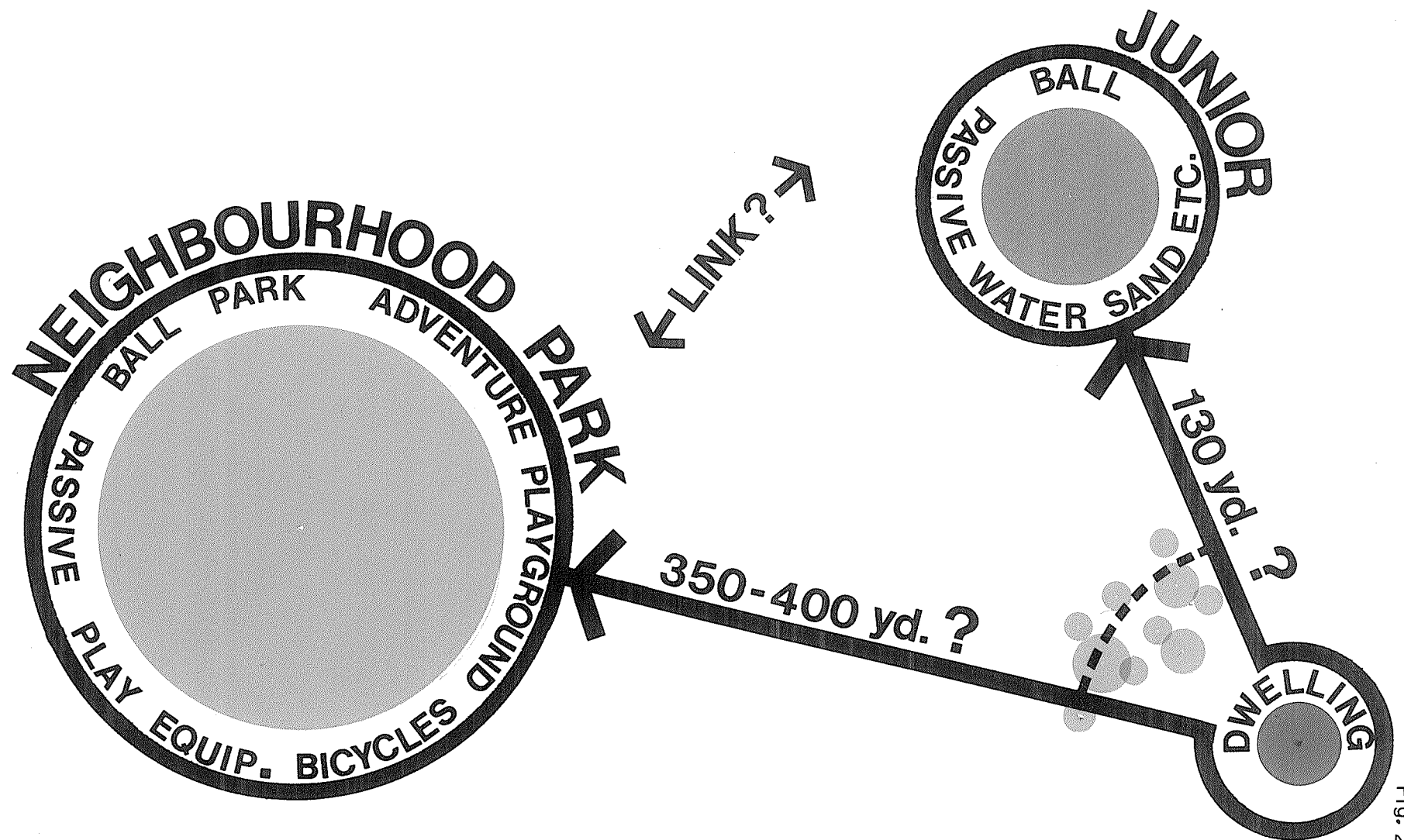
intuitive perception and he calculates his approach to drawing or to any effort.²

The five year old begins to anticipate and to explore more thoroughly, although his global characteristic causes him to perceive only the total impression of anything. This characteristic called 'syncretism' is the tendency of the child to connect a series of separate ideas into one confused whole. The reasoning process slowly develops.³ For children within this developmental stage, planners have decided that there should be a maximum radial distance of 130 yards from a child's home to the immediate play park.⁴ (See figure 23). In a recent dispute among planners and politicians in Toronto, they decided that the placing of parks within a radius of 800 feet could not be done economically. Such distances may be feasible for self-contained housing tracts or estates or for the grounds of the inevitable high-rise, but not for most built-up areas in the city core, commercial or residential. In these latter areas, the introduction of parks would often require confiscation of many properties, even within one city block. Furthermore, no direct relationship between a given data and the child's needs is explained.

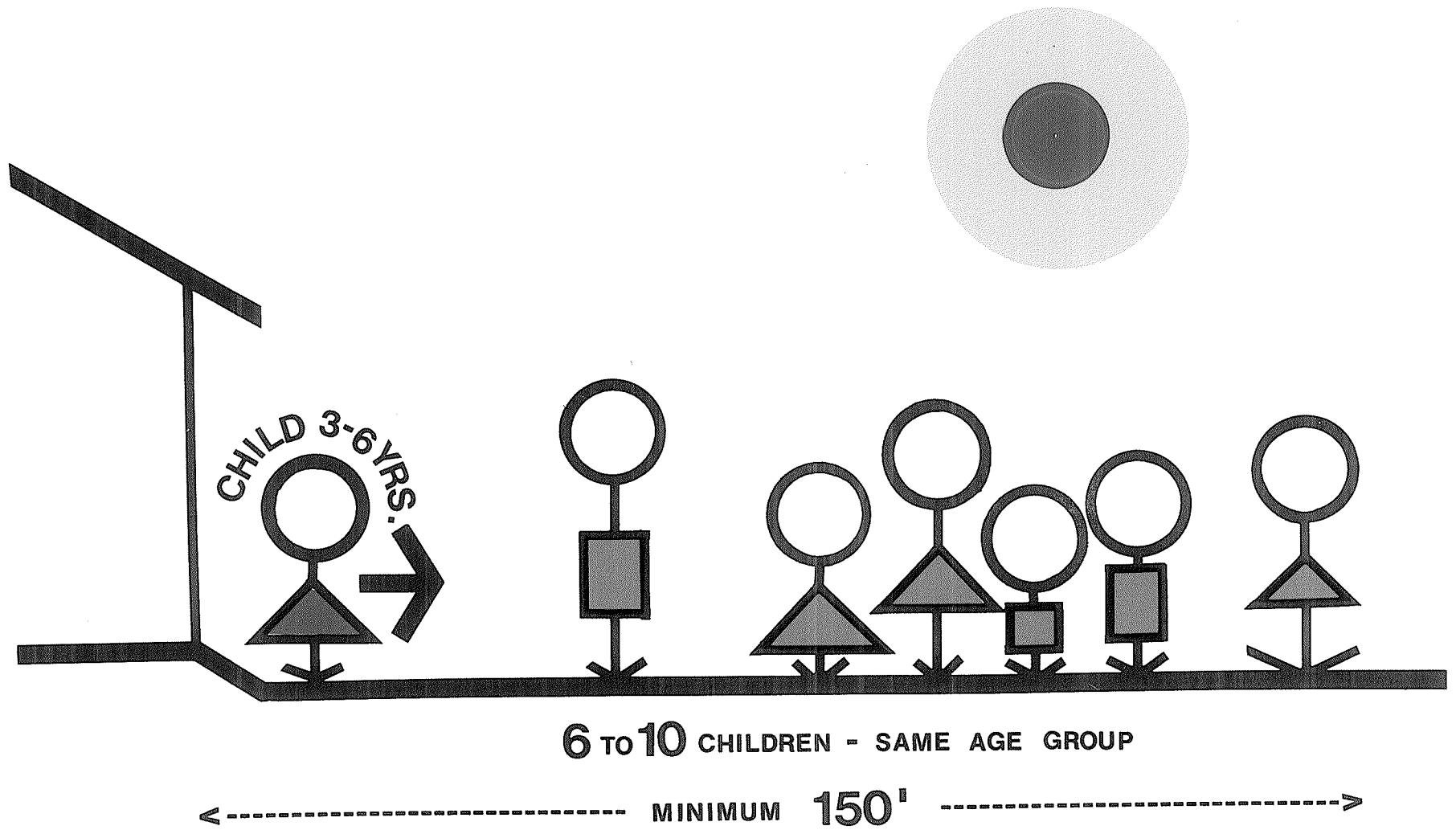
Safdie proposed criteria for distances concerned with child mobility and communication, based on intuition. A child from three to six should be able to leave his dwelling independently and wander to a minimum distance of at least 150 feet, meeting from six to ten children of his own age (see figure 24). Also, children from six to ten years old should be able to find play areas within five acres of their home. This

²Ibid. ³Ibid p.40n.

⁴A. Bengtsson, Environmental planning for children's play, n.p.



DISTANCES TO RECREATION



SOCIAL/PHYSICAL CRITERIA ?

was coupled with a comment that within this inner community a complete separation of vehicles and pedestrians should exist. Children ten to seventeen should have access to a diversity of activities in the immediate vicinity.⁵

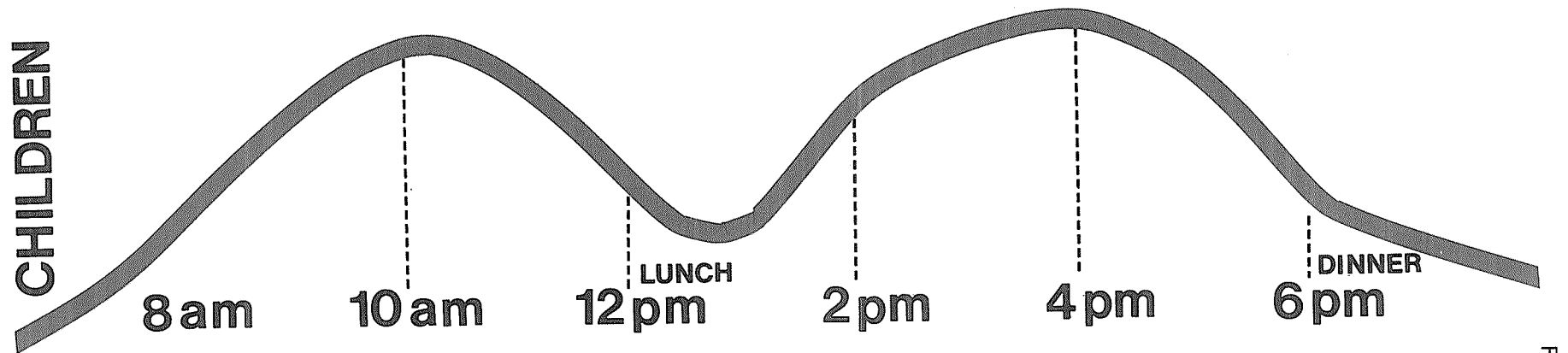
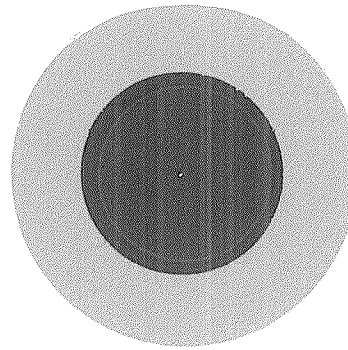
No definite conclusions, as to how far a child, at a particular stage of development, can travel safely within the city fabric have been drawn. General observations seem to indicate that children venture much further from home than they are usually permitted when they are merely introduced to the transit system and traffic lights. However, to further complicate matters, investigators in Sweden and England have arrived at data, placing the larger neighbourhood playground no further than 400 yards radius from a child's home⁶ (see figure 23). Other information indicates that children in primary school, living in a city, have a mobility radius of just less than one half of a mile, or 2,300 - 2,500 feet from home.⁷ Not only does the information conflict but it seems unrealistic and perhaps unfortunate when considering the diversified opportunities which the city environment has to offer. Figures 25 and 26 illustrate other child observations based upon existing facilities.

Furthermore, the 'comprehensive' or community play park could, or perhaps should, be combined with the intermediate or junior play area. A direct and natural link between the play areas of children of different stages would initiate interaction. All children thrive on relationships with children both younger and older than they are. In this way, they

⁵M. Safdie, Beyond Habitat, pp.160-61.

⁶Bengtsson, Environmental planning, p.110.

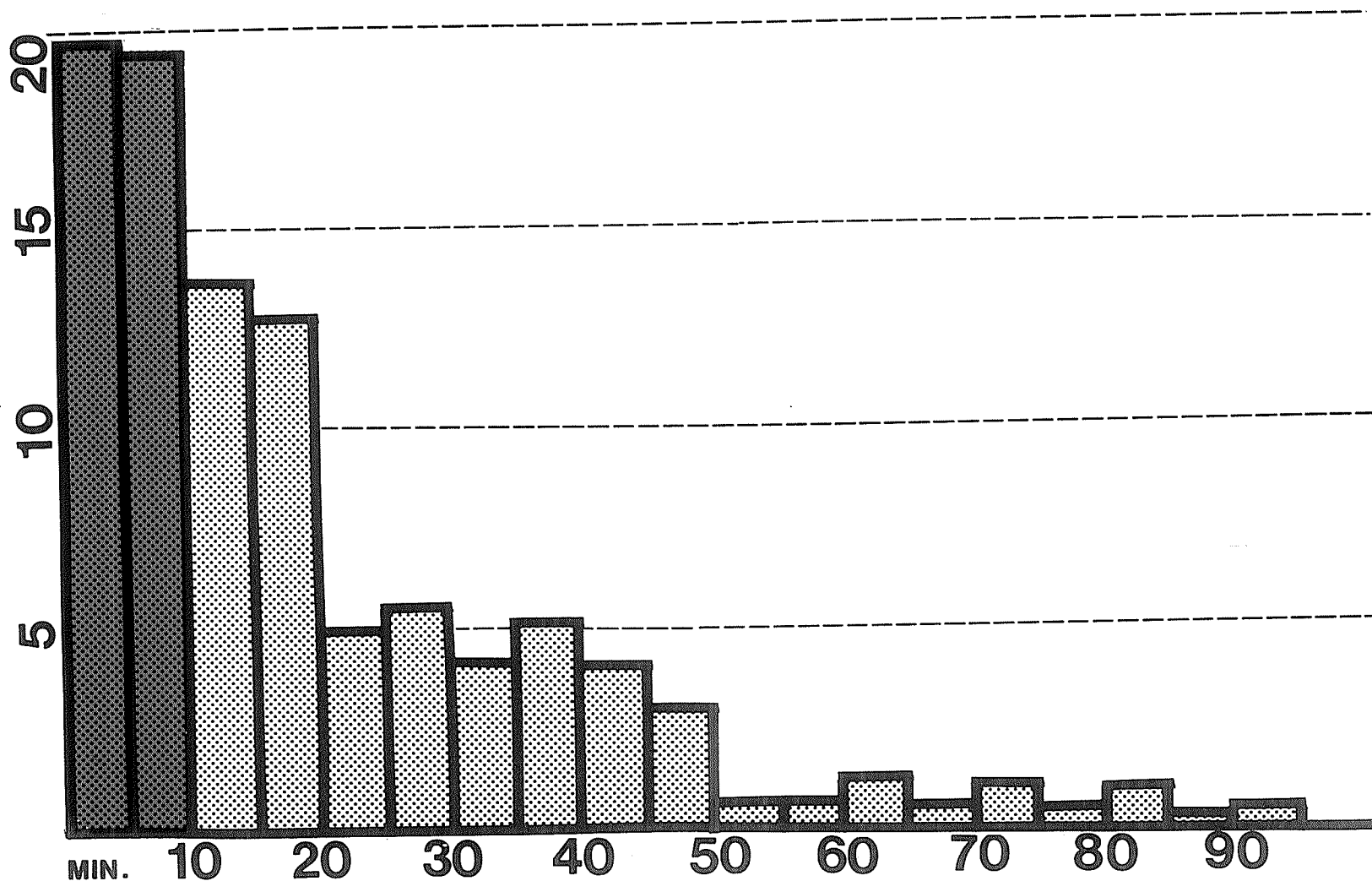
⁷M.L. McMahon, "The Relationship Between Environmental Setting and Curiosity in Children," pp.49-53.



PEAK PLAYTIMES - OUTDOORS

Fig. 25

PERCENTAGE OF CHILDREN



LENGTH OF PLAYGROUND VISITS

Fig. 26

learn to be both leader and follower. Since children develop at various speeds, they should have the opportunity of graduating from one experience to another without having to accommodate obvious boundary changes. This concept is now considered in many open-plan primary schools.

A look at playgrounds designed specifically for children and the subsequent use of such playgrounds, gives designers an insight into what environmental qualities stimulate children.

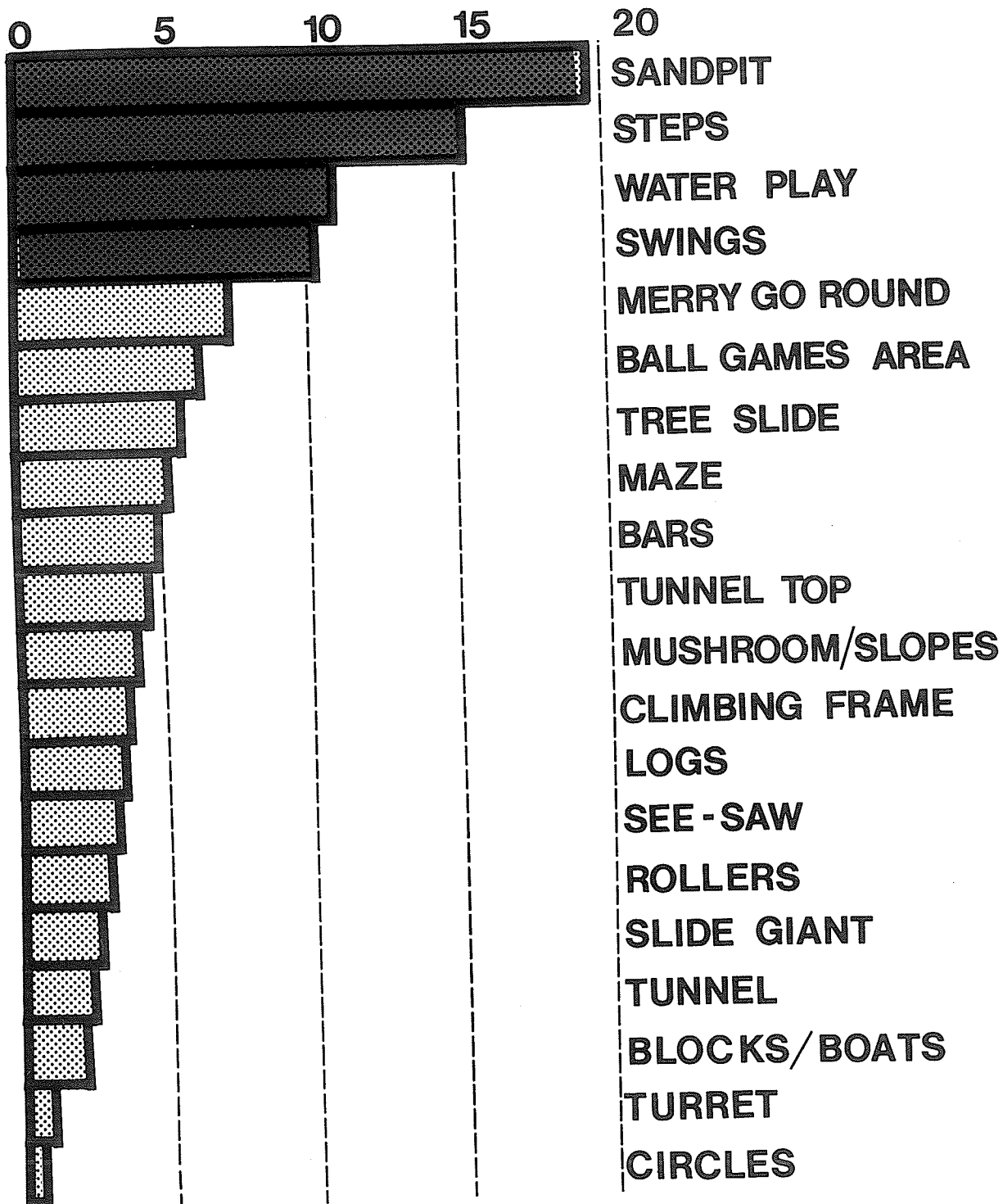
Successful playgrounds do not have to be complicated, but usually include at least six pieces of play apparatus⁸ (see figure 27). Generally all small children like the sand pit, and as can be seen in the accompanying graph, the result of the study on the comparison and use of items of equipment on the playground, it rates highest with children. Whenever swings are provided they are in use for ninety per cent of the play time.⁹ Why? Traditional equipment is always in much more use than the irrelevant boats and giants simulated in the play area. The child has his own imagination.

For small children, ready for the fun of the play park, the high-rise development often offers more available facilities than many of the detached dwelling areas, including both upper and middle class areas. Here, the most convenient play space is the home yard which the child must be content with until he is old enough to venture forth to the nearest playground.

⁸W.V. Hole and A. Miller, "Children's Play on Housing Estates: A Summary of Two B.R.S. Studies", Architects' Journal, Vol.143, (June 22, 1966), p.1533.

⁹Ibid.

CHILD MINUTES



365 CHILDREN

USE OF EQUIPMENT

Designers have achieved many ingenious places for children, which provide a common meeting place, a reason for children to meet and participate in play. Playgrounds include a variety of materials, textures, objects. Some playgrounds have movable modular units for temporary use in renewal areas.¹⁰ However, playgrounds are often more popular during the untidy construction stage. After completion, the child population often diminishes if the possibilities for creation and variation do not exist for the child.

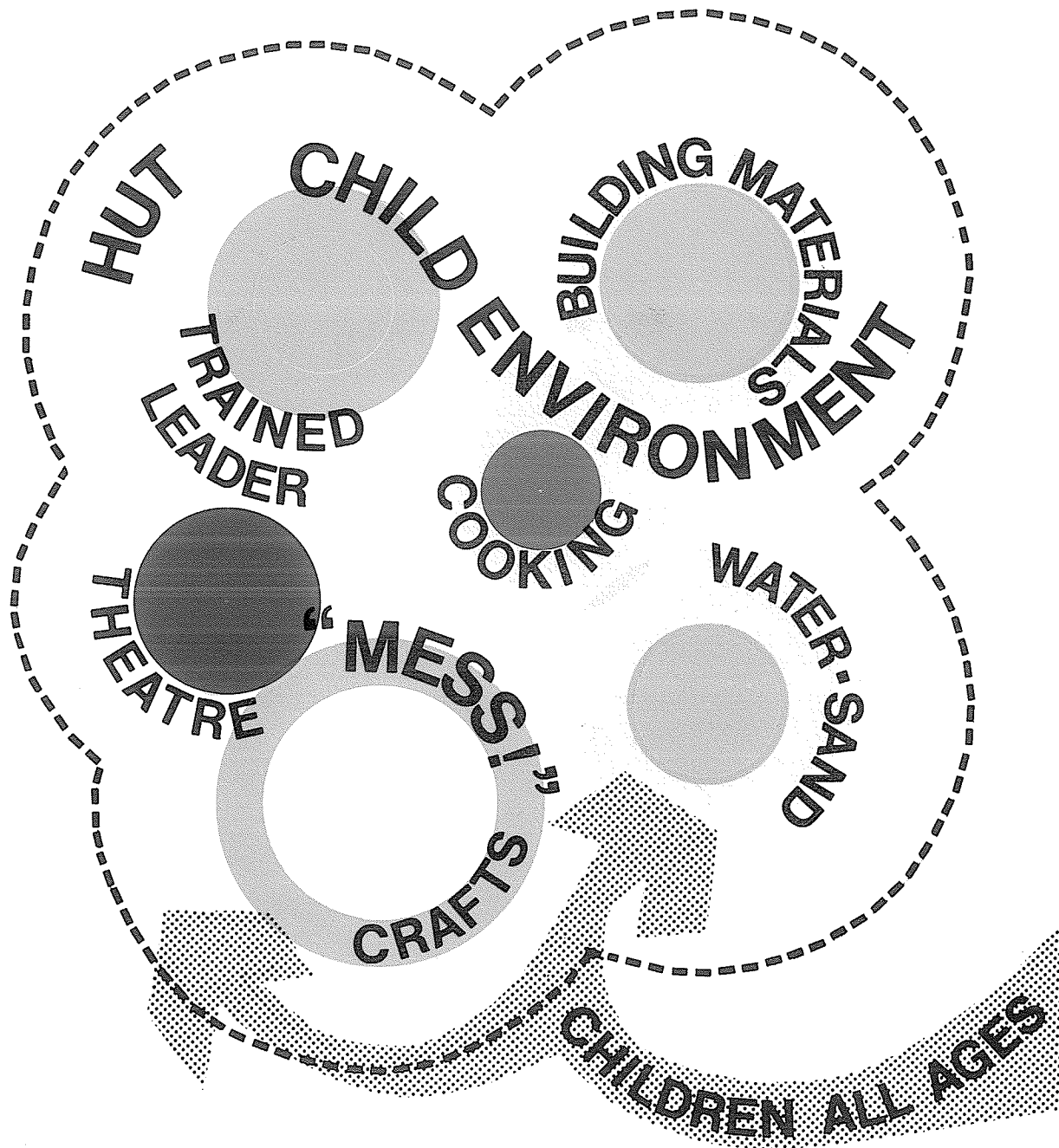
Everything is normally so finished, so well arranged that nothing is left to the child's initiative. This is a mistake, children want a part in creating their own world. It is not surprising that play often becomes destructive instead of constructive.¹¹

The adventure playground is a total-child environment (see figure 28) advocated by many planners but instigated primarily by Lady Allen of Hurtwood, in England. It is an area usually enclosed with a solid fence (at least thirteen feet) which not only serves to contain bouncing balls but to concentrate the happy but inevitably untidy child's world inside, hiding it momentarily from an adult world, which in low-cost areas is often particularly depressing. Children are guided by a trained supervisor in such activities as building fires, cooking, keeping animals and acting out plays. They use proper tools for construction of a constantly changing play area which consists of a wide variety of materials, such as boards, sand, water and cans.¹²

Evergreens, remaining green all winter, are often a preference for children who live in bleak settings. However, most children love the

¹⁰Bengtsson, Environmental planning, pp.72-73.

¹¹Ibid p.156. ¹²Ibid pp.64-66.



ADVENTURE PLAY

change in colour of the deciduous trees and the falling leaves add to their fun.¹³ A tree like the horse chestnut, exceptionally beautiful when in bloom offers chestnuts for play, for making things. Both this tree and the willow easily withstand heavy pruning. The willow actually thrives with pruning, such that children, easily tempted to snap off the low draping branches will not damage the tree.¹⁴

Along with natural areas which include trees, plantings, grass with hills, children require hard surfaces. They love to ride bicycles, tricycles, scooters. Investigations on two playgrounds in London indicate that ten per cent of the children in the observed areas were playing with such vehicles or skates.¹⁵ Paved areas or banked surfaces, shaped like velodromes, facilitate this sport. Children on roller skates complain about their environment when there are no smooth surfaces for them to practice their sport. Deeply creviced sidewalks and cracked pavements plague them. Even the smallest child enjoys smooth surfaces for his wheeled toys.

Summary

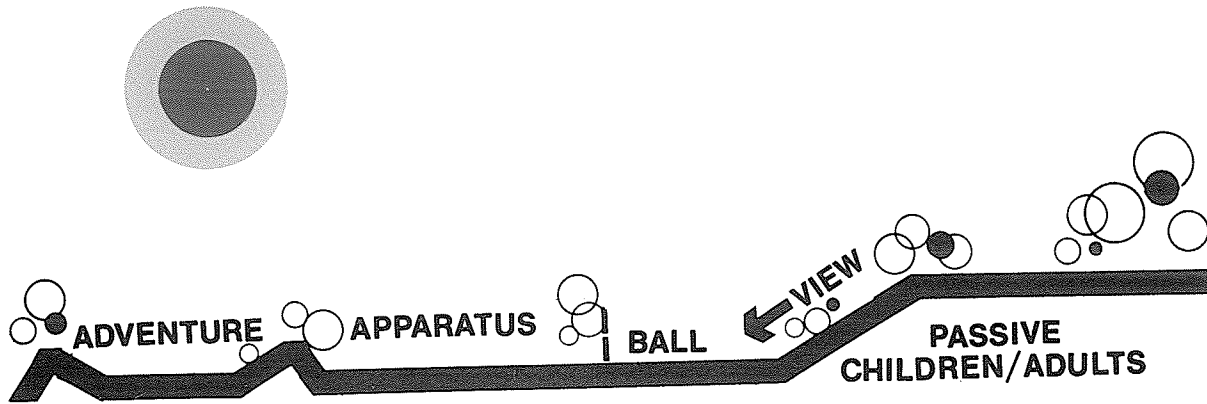
This section has dealt primarily with data presented as a direct result of recorded observations of existing child activities (see figure 29) or of existing facilities for child activities. The specifications given from such observations are based on intuition or conjecture. No actual needs for the child are elaborated in an effort to provide a valid

¹³E.D. Cyzek, "Children's Perception and Values in the Urban Environment", pp.149-52.

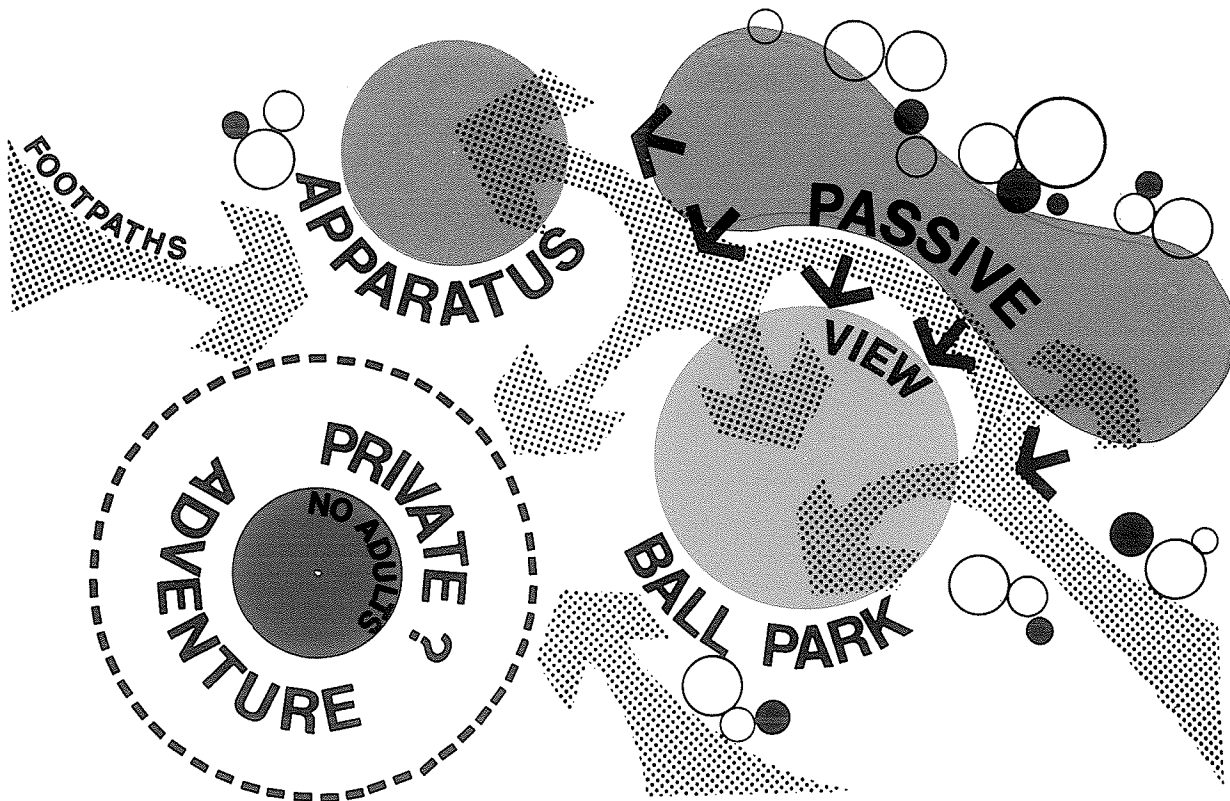
¹⁴Bengtsson, Environmental planning, n.p.

¹⁵Hole and Miller, "Children's Play on Housing Estates," p.1531.

basis for initiating priorities for child design. A perpetuation of existing possibilities is all that seems possible considering the available data.



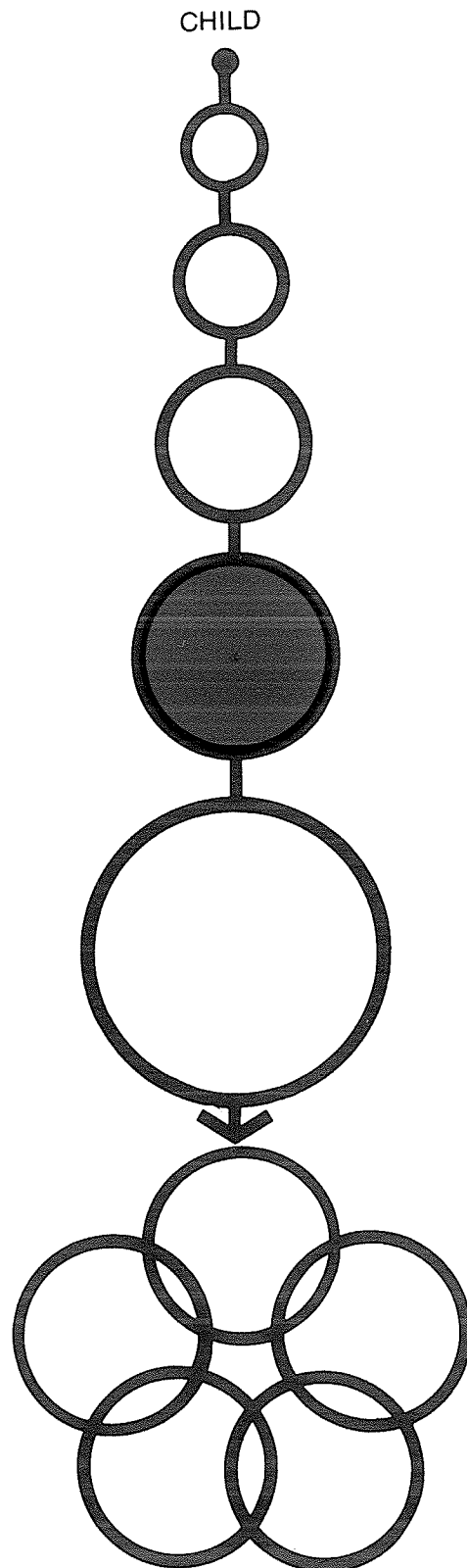
SECTION
PLAN 



ACTIVE/PASSIVE

DEVELOPMENTAL INFLUENCES

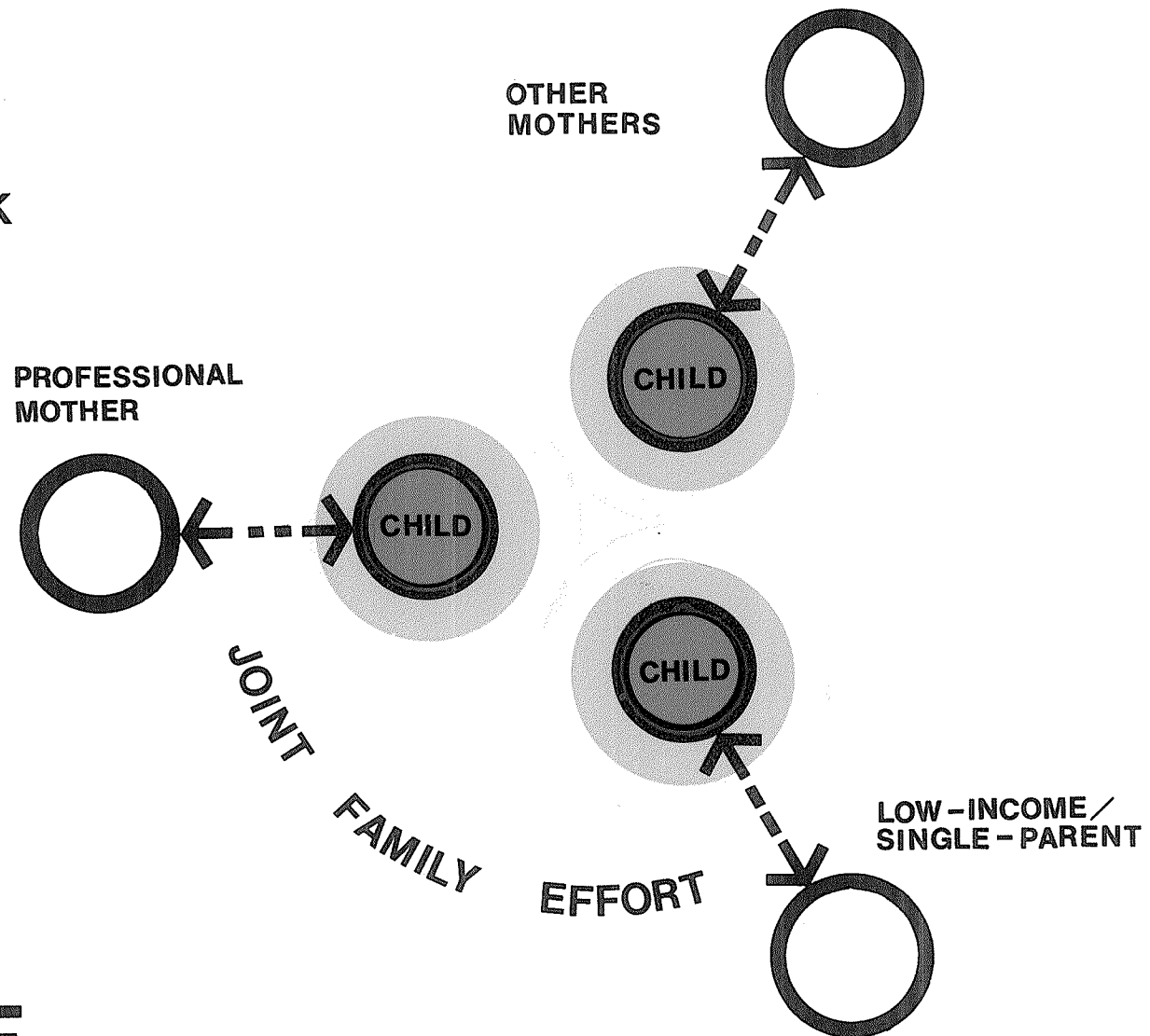
EDUCATION



EDUCATIONPre-School

Although adequate facilities for child care are not available in every community, there is a definite trend for such, which will hopefully satisfy the needs of children and their families in every economic bracket. These types of facilities expose low-income children to new acquaintances and new experiences apart from the home where they often didn't have a babysitter outside the family circle (see figure 31). The results in a thesis study, 'The Use of Neighbourhoods by Mothers and Young Children', indicate that the kinship orientation of low-income groups will probably persist, although better conditions of life (ie. guaranteed annual wage) will possibly lessen the interdependencies of relatives except for social reasons. This suggests that mothers may not have to work and the close relationship with the children would persist. However, the influence of industrialism may curb the restrictions of the extended family situations until the modern outlooks of the conjugal system overrides. Day care facilities could benefit families in higher income groups as well, since within these families the role conflict of professional women is often heightened when children are in the home (see figure 31). Paradoxically, middle-class mothers, although less justified in leaving the home for economic reasons, usually have more education and thus more inclination to pursue a career than working-class mothers, who prefer to stay at home but must often attend what is an unstimulating job. The part-time separation between mothers and children in upper income groups is possibly necessary because of the usual intensity of the home relationships. Similar separation between mothers and children in lower income groups gives the

PROJECTED - 1980 -
35% CANADIAN WORK
FORCE = WOMEN !



DAY CARE

children the opportunity for experiences outside the home.¹ Neglect, not absence is the consequence of many unsuccessful family situations. As discussed in the previous section concerning social units, Dr. White, in his Harvard Pre-School Project discovered that mothers who did not offer constant attention, but frequent stimulating interjections, initiated more positive development in their children. Many of these mothers were working part-time.

The employment of mothers is known to increase the chances of marital conflict, but not to change the general level of happiness in marriage. No conclusions have been made as to whether the working of a mother has a destructive effect on the development of the child. There are many variables which interact. However, discoveries have been made that children of some working mothers who enjoy their employment, have normal achievement in school. Children whose mothers work due to economic family pressures, in what is often an unpleasant job, have a lower performance level, particularly in the third to the sixth grade. The reasons suggested for such performance is that the mothers in these families tend to feel that the resulting burden of the household tasks should be shared by all the family, and thus they become frustrated and do not attempt to make up for their absence from the children. The emotional ties within the family are strained, resulting in non-adaptive behaviour of the children in school.²

Long term supplementary services, part-time, temporary or emergency child care services, are required by the various family formations

¹D.S. Stern, pp.8-20.

²W.J. Goode, The Family, pp.76-77

in society today. One survey in Toronto determined that almost one-half of the children of working parents were cared for privately by either neighbours or strangers in their respective homes. This was due not only to the fact that private arrangements cost much less but was due to the shortage of community day care centres. A cross-Canada survey indicates that ninety-seven per cent of working mothers have no access to day care facilities for their children. The services are either absolutely unavailable, inconveniently located or too costly. Also, a study prepared by the Canadian Council on Social Development revealed the need for an increase of day care facilities on campuses. Administration seems to regard this as a low priority item.³

Existing day care centres serve children from about two and one-half years old to five years. Centres which are open all day, often supervise elementary school children at lunch and after school.⁴ Babies and children up to two years are usually cared for in private families although some nursery centres are available.⁵

The preliminary findings of a survey conducted by the Community Day Care Committee of the Social Planning Council concluded that eighty per cent of private family day care centres work well for both children and parents, the rest are risk positions not offering good care. There has been a recommendation that a 'Day Care Council' be established to function as a central registration for private home day-care arrangements.

³"Study says day care available to only 3% of working mothers," Toronto Daily Star, Family Section, June 21, 1971, p.54.

⁴Vanier Institute of the Family, Day Care, Establishing Community Services, p.3.

⁵"Survey proves most family day care is good," Toronto Daily Star, Family Section, May 29, 1971, p.97.

This would include provisions for inspection and supervision of the homes.⁶ Public Health nurses throughout the city of Toronto are attempting to help mothers find facilities until adequate registration services can be instituted.

In July, 1971, the Ontario Government announced amendments to the Day Nursery Act. They will now provide grants of fifty per cent for actual construction for new day care centres and continue to contribute eighty per cent to the cost of rehabilitating old buildings for the purpose. There is now a total of 225 centres in Metro caring for at least 10,000 children. Ninety per cent of the families who use private day care need subsidization, eighty per cent of these families are single parent.⁷

One of the greatest concerns aside from lack of child-facilities is the lack of research concerning the effects of day care on North American children. Frederick Elkin, sociologist at York University in Toronto, determined that day care was not only an important service to the society but to the development of child training. He believes however, that such facilities should be a joint family effort since there is evidence that children lacking close family ties may not develop fully emotionally.⁸

Other psychological opinions, feel that day care centres are damaging, that they become places for parents to leave burdensome children.⁹

⁶Ibid.

⁷"Ontario plans to help build day care centres," Toronto Daily Star, July 9, 1971, p.13.

⁸"Too few trained staff," Toronto Daily Star, June 22, 1971, n.p.

⁹"Day care centre can damage child," Toronto Daily Star, June 22, 1971, p.62.

A child-care training course at George Brown College is sending out students each week to experience the situation in the various centres, in preparation for their work after graduation.

Children from unhappy or drab living environments would possibly be greatly stimulated in a cheerful, creative environment provided in good day-care centres. Health problems which may be neglected until public school are often noted in under-privileged children who come to these centres. Headstart is a particular organization designed for children who lack adequate play space, play materials and adult stimulation. This special enrichment program has helped many low-income pre-school children to later cope with the grade school tasks.

As in every level of education, there exists conflicting opinions as to the teaching methods which should or should not be employed. Since a child needs love and careful physical care, along with intellectual stimulation, nurseries and day care centres must provide full developmental needs. The Sussex Centre, a co-operative at the University of Toronto, run by mothers who are not specifically trained, is the subject of much controversy. The mothers believe that children, even under the age of two years, are very independent and knowledgeable. The children play at this centre without much adult interference in direct contrast to the play of children in traditional nurseries who are guided constantly by supervisors with training suited to the ages or the development of the child involved.¹⁰ Bryant, a British researcher who experimented with 160 children in Oxford, England, has arrived at conclusions which

¹⁰"Day care," Toronto Daily Star, Family Section, Sept. 18, 1971, p.89.

although seem sympathetic to both views, finally advocate specific training for children. He concludes that educators have in fact underestimated the ability of children to think for themselves. He has proven that children as young as four years old have logical judgment, disagreeing with the beliefs of Piaget.¹¹ Consequently, the 'play and discovery' method of learning is possibly not the best since the child, if directed expertly could develop much more fully, more quickly. Piaget believes that children should not be extended beyond their obvious capabilities, which is the approach apparently adopted by the Sussex Centre. But what are the 'obvious' capabilities of each child?

Montessori believes that teachers should be observers, only participating when necessary in the development of the child. The intervention of the adult, the educational materials, and the environment, although important, must all be limited. Too little or too much interference is deleterious to their development.¹² These ideas relate directly to the study of the 'optimum arousal theory' concerned with the monotony and complexity of the environment which will be discussed more fully in the next section of this chapter.¹³ Montessorian teaching methods offer many devices which are either available to the child when he wishes them or are introduced to him at the time the teacher feels is most opportune.

A pediatrician from Harvard University seems to disagree with the concept of educational toys. He believes that there is no evidence that

¹¹"Child can use logic at 3," Toronto Daily Star, Aug. 24, 1971, p.51.

¹²M. Montessori, The Child in the Family, pp.116-18.

¹³M.L. McMahon. "The Relationship Between Environmental Setting and Curiosity in Children," p.4.

the systematic application of 'toys that teach' accelerate intellectual development. Rather, he feels that the process may have harmful effects on the child, interfering with the mutual nurturing of mother and child.¹⁴ While he advocates 'pots and pans' another Harvard professor is producing such learning games (although for older children) that teach children about such problems as pollution. A few such games on the market are "Smog", the "Water Pollution Game" and "Population".¹⁵

One of the most thoroughly researched television programs called Sesame Street aims at educating 12,000,000 pre-schoolers in the United States. Such basic needs as nursery school lessons, including the alphabet, and social values including cleanliness, friendliness and racial integration are part of the entertaining production specifically aimed at inner-city ghetto children who are usually defeated by lack of intellectual stimulation before they reach primary school. Many critics feel that the use of the television medium for mind-training and attitude-bending is wrong. The executive-producer of Sesame Street, Jean Ganz Cooney defends the technique which is similar to advertising by indicating that such techniques are already in full use and so might as well be used constructively. The television with its educational value is now becoming a legitimate babysitter.¹⁶

¹⁴"Toys that teach may be harmful," Calgary Herald, Oct.18, 1971, n.p.

¹⁵"New toys fight pollution," Toronto Daily Star, Section 4, July 6, 1971, p.53.

¹⁶Roberta B. Gratz, "The New People," Glamour, January 1971, pp.104-20. A discussion with Joan Ganz Cooney, creator and executive-producer of Sesame Street.

The aspirations of low-income families are middle-class, and so a middle-class setting appears on Sesame Street which reaches the ghetto child. An interim report stated that the children who watched Sesame Street before they started primary school now have a much better attitude to both school and classmates than children from similar backgrounds before them.¹⁷

Formal Education

Children begin primary school at about four or five years old. The following are current philosophies and resulting practices of educationalists concerning these primary schools.

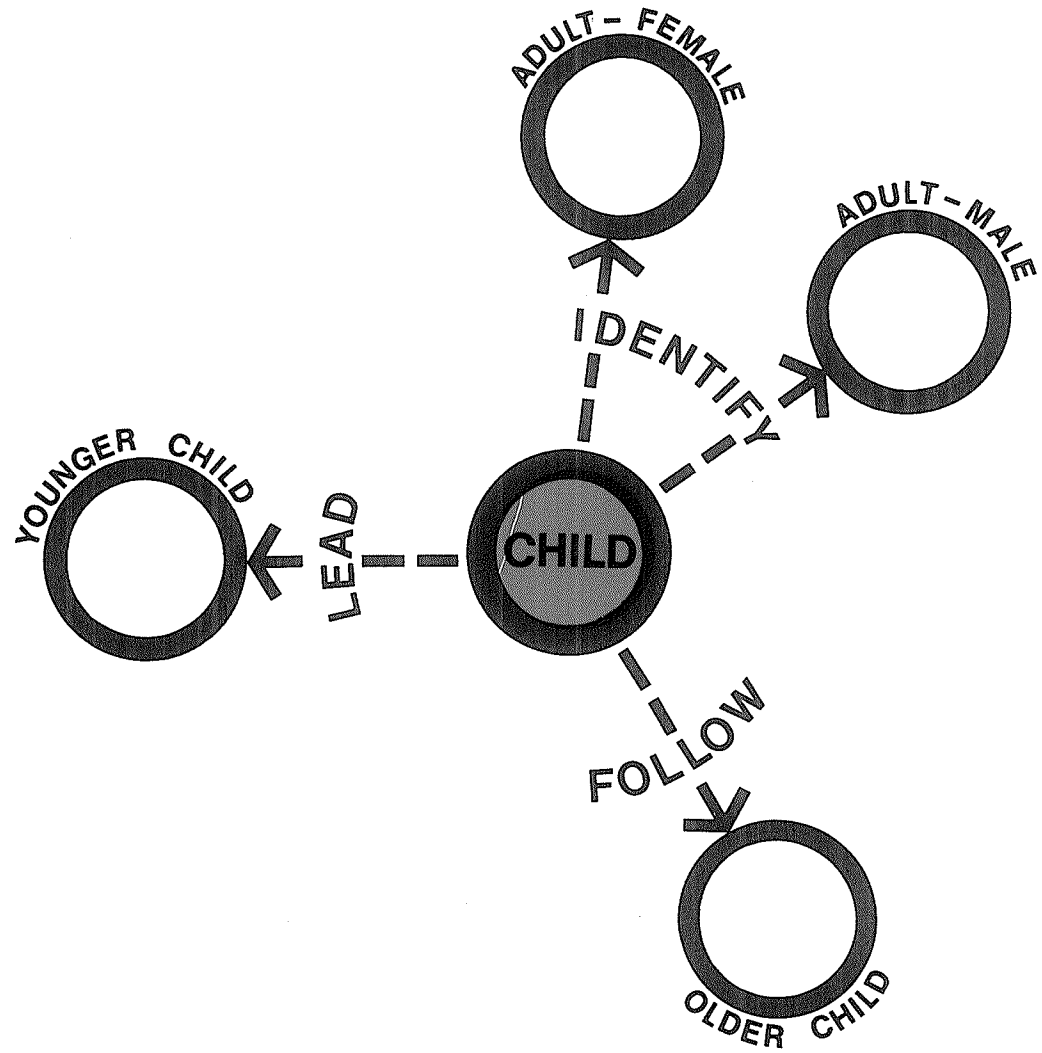
Although the teacher must be held in respect and remain the undisputed leader in the learning process of the children, there must not be an authoritarian attitude or hierarchical system in a classroom.

Every effort should be made to eliminate the rather rigid atmosphere of the rank and file set up of the typical school classroom. In its place should be substituted a more open arrangement of furniture consistent with the ideals of individual freedom...¹⁸

Joint planning has been advised to enable teachers to gain security and competence through co-operation. This eliminates the isolation felt by both teacher and class and the necessity of a typical closed classroom. Children should be able to identify with men as well as women and since there are relatively few male teachers in the primary school system, the team teaching approach allows greater social

¹⁷Andrew H. Malcolm, "Electronic media producing a new breed of youngster", The Calgary Herald, Family Living, Oct.19, 1971, p.35.

¹⁸Commission on Education of the B.C. Teachers Federation, Involvement, the Key to Better Schools, p.126.



CHILD RELATIONSHIPS

contact for children with all the school staff¹⁹ (see figure 32). In time it is hoped that school assistants will take over administrative duties, allowing teachers to devote more time to their individual students.

Many newer schools provide large open areas often becoming activity centres. In each of these centres the teachers work as a team. The activities are based primarily on pupils' interest, and attempt is made to capitalize in the particular talents of the individual teachers. The children learn to participate instead of to merely assimilate facts. Such learning arrangements require efficient and flexible spaces. The furniture must be light and durable, such that children can rearrange it as necessary. No barriers must exist to interrupt the movement of the child during each day and his continuous progression throughout the school years.

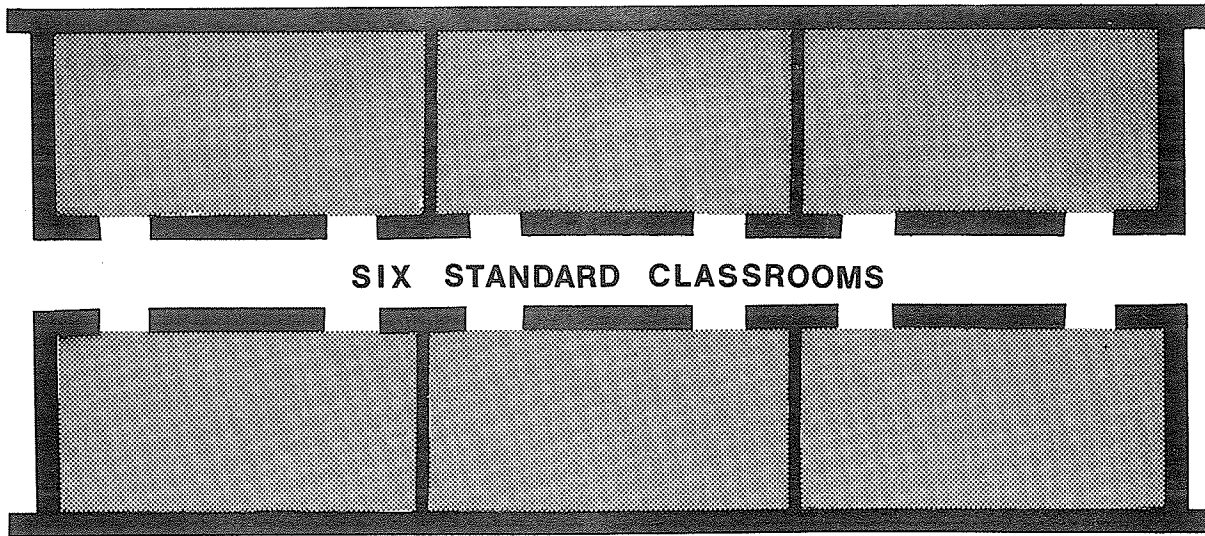
Montessori teachings advocate that children should have their own special environment, where they can function independently without requiring constant adult aid. A child wants the satisfaction of shaping his own life but needs the security of knowing guidance and encouragement is within reach.²⁰

The importance of a child's relationship with older and younger children is stressed (see figure 32), strengthening the argument for open interaction spaces within the school as well as within each activity space (see figure 33), which,

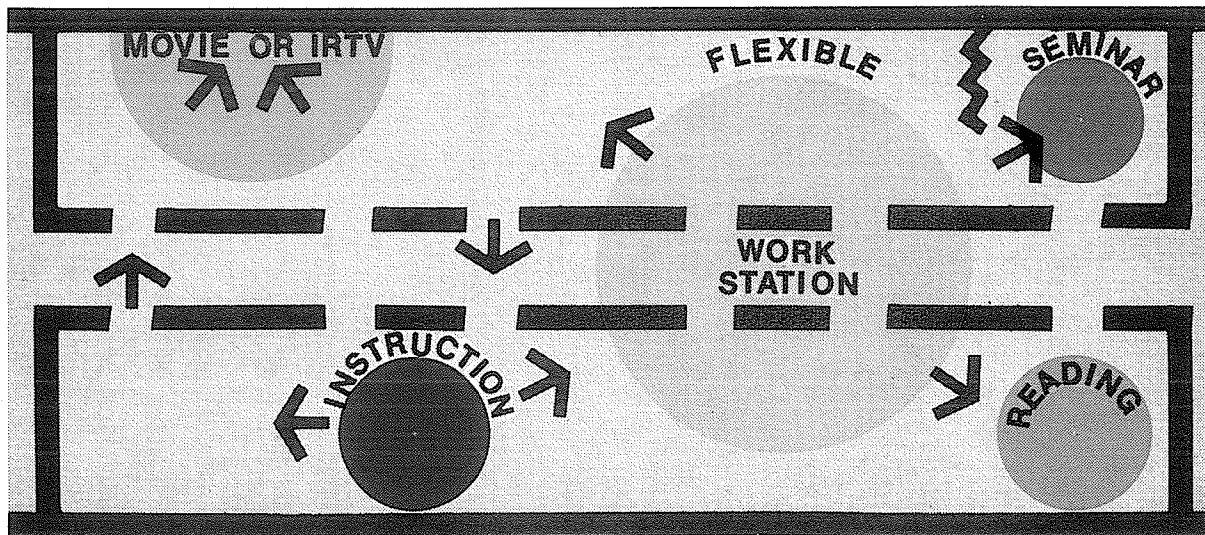
¹⁹Ibid.

²⁰M. Montessori, The Child in the Family, pp.70-72.

'OLD' PROGRAM - CLOSED



'NEW' PROGRAM - OPEN



EDUCATIONAL SPACES

- provides an environment in which young children can identify with someone older; where older children have the opportunity to help others
- provides opportunities for children to move through the roles of both follower and leader
- helps children see themselves at any age as part of the full tapestry of life, not as separate, age-isolated and unimportant.²¹

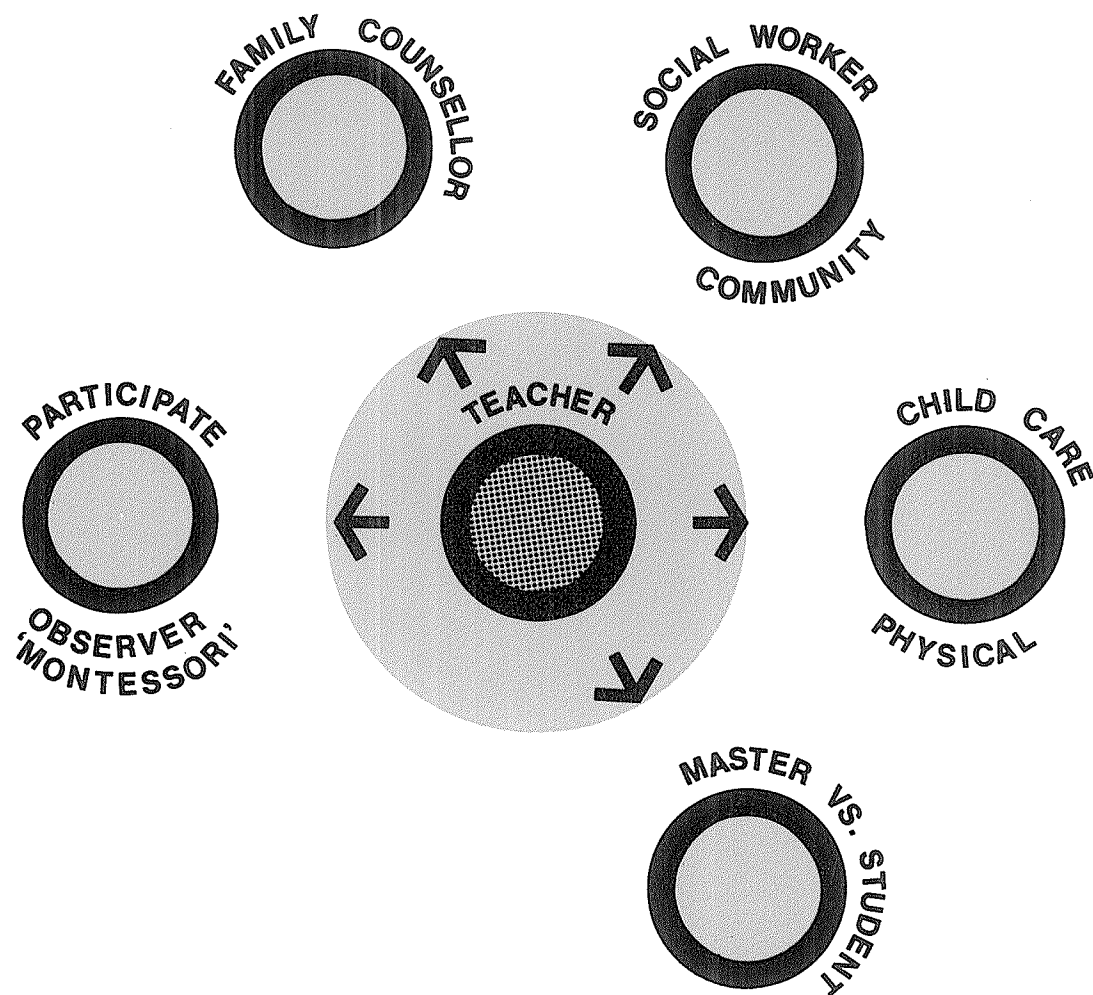
As discussed, there are many examples of new open-planned schools where conflicting problems concerning spacial flexibility and acoustical privacy are being solved. Most educators feel that the radical change from tight closed classrooms to grand open spaces is not the best solution. A compromise with a variety of spaces from very large as initiated for joint scheduling of activities, to medium, for more generalized study, to the availability of a few small instructional rooms for teacher and one or two students is considered ideal.²²

The Study of Educational Facilities (SEF), a research organization, has completed the first major open systems project in Canada for the city of Toronto. It has produced what its designers feel is an innovative building system which not only satisfies the open-plan requirement just discussed, but provides a setting for change, sympathetic to contemporary methods of educating wherein an attempt is still made to contain the learning process.

Innovative plans for renovating older structures, such as old schools, warehouses, or even a theatre into a school as was completed in the

²¹Commission on Education, Involvement, p.28.

²²Report of the Educational Facilities Laboratories, Schools Without Walls, booklet.



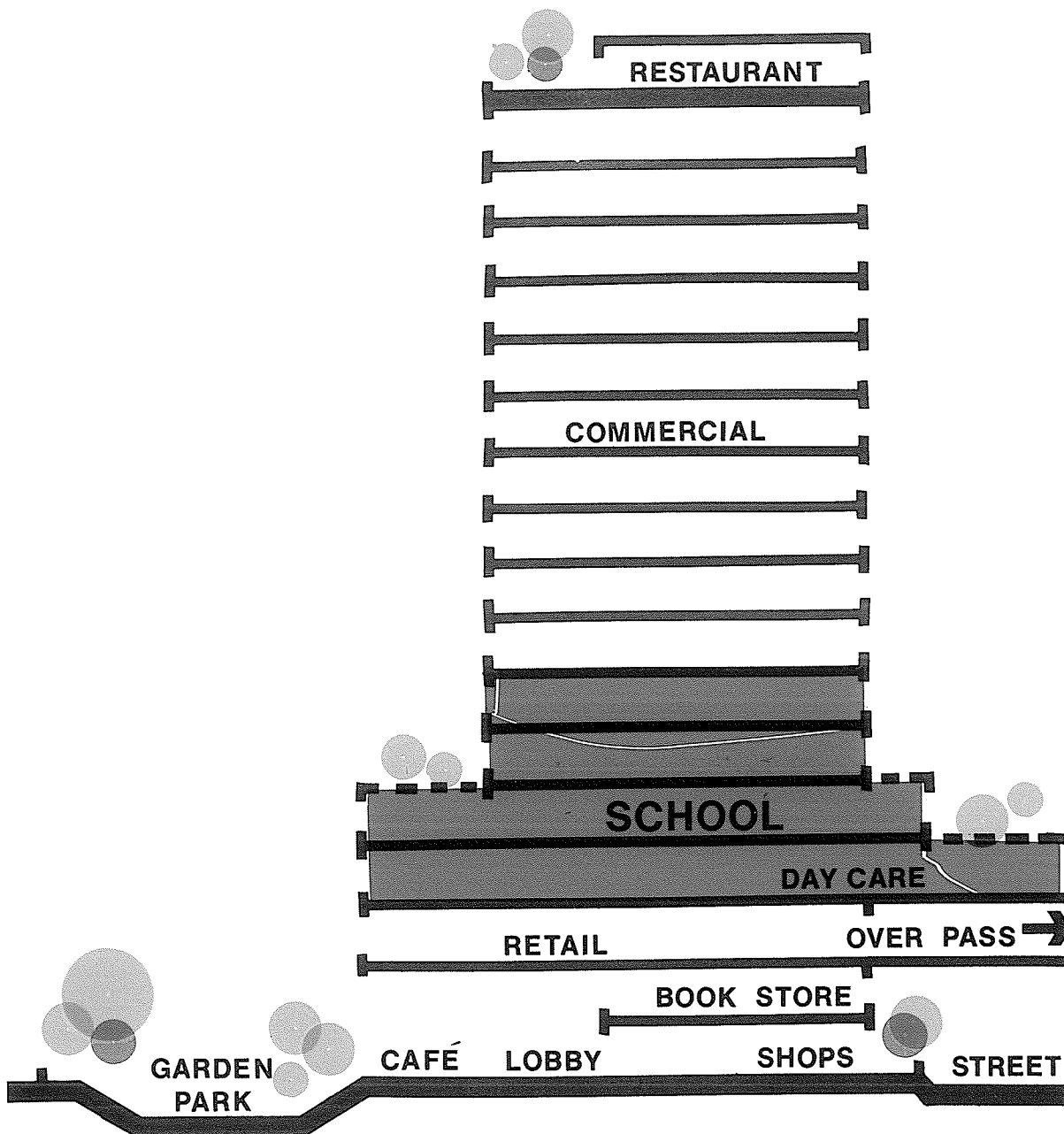
TEACHERS' ROLE ?

Bronx, New York, are making a definite contribution to the urban need for learning spaces. Although most of the 'found' spaces were mainly used for economic expediency, they often seem to answer the classroom requirements better than the typical institutional building. A child appears to like the variety of space in which he may hide, retreat, or mingle with others. In one particular renovation project in Massachusetts, the children were allowed to participate in the actual design and construction of their space. The result was a labyrinth of cubicles which provided a seemingly restricting framework in which the children have been totally satisfied. Children from poverty, may possibly have a particular need for their very own little place.²³

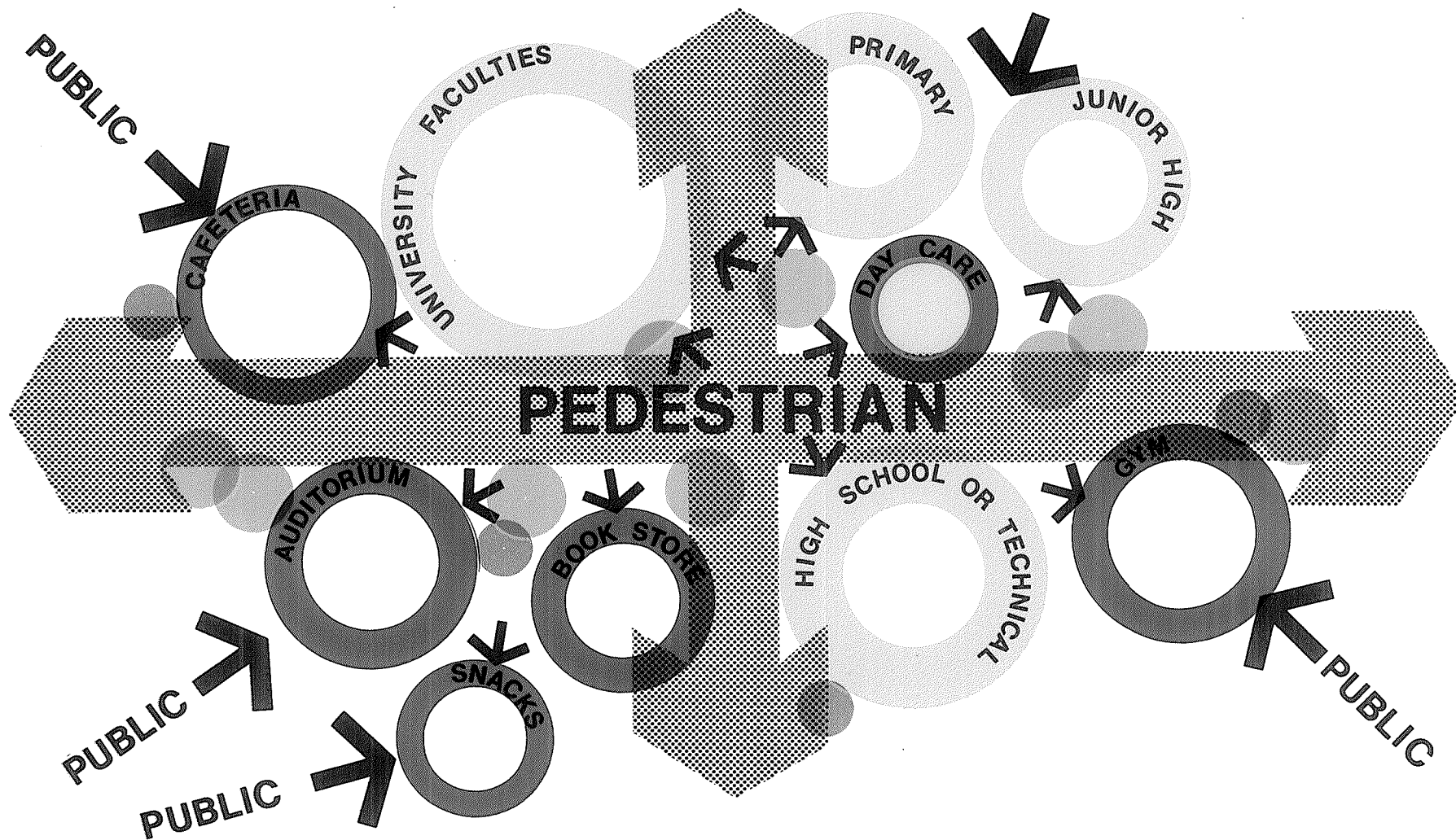
SEF has researched the needs for conventional schools, relocatable facilities, and mixes of schools with other community concerns. One study, involving research in fifty cities around the world, is preparing a study for the feasibility of integrating the school system in the high-rise building.²⁴ Educational Facilities Laboratories based in the United States have also looked into the possibility of 'joint occupancy', or commercial ventures with schools (see figure 35). This concept could very well provide the continuation of community diversity and activity in the school as well as expose the children to the adult world. The 'Educational Park', a cluster of schools of all academic levels furthers this community idea (see figure 36). The complex linked by major greenbelts, would offer such facilities as the cafeterias, auditoriums and

²³Forrest Wilson, ed., Progressive Architecture, Vol.52, No.2, February 1971, The whole issue deals with aspects of education.

²⁴B. Zwicker, "Study of schools in high-rises," Toronto Daily Star, June 17, 1969.



JOINT OCCUPANCY



EDUCATION PARK

so on, to the public.²⁵

Regarding the introduction of television in the curriculum, school leaders are showing concern about the one-way communications which such teaching offers. A "transmittal of common cultural heritage"²⁶ by the media, is enveloping the child outside the school such that teachers feel that educational television must not merely continue to broadcast information but must stimulate inquiry in the child to further his individual development. A study of children's television reveals that seventy-one per cent of the shows are violent and one-half of the program time deals with crime, super-natural or inter-personal rivalry.²⁷ The American Pediatric Association found that a child of fourteen had probably watched about 10,000 murders, at seventeen had seen 350,000 commercials and in his average North American lifetime would watch ten years of television.²⁸ Less than one minute in fifteen can be classified as informational²⁹ (see figure 37).

Teachers who attempt to make use of educational programs in the classroom often find that the programs do not fit in with the class schedule. Information retrieval television (IRTV) shows promise of overcoming

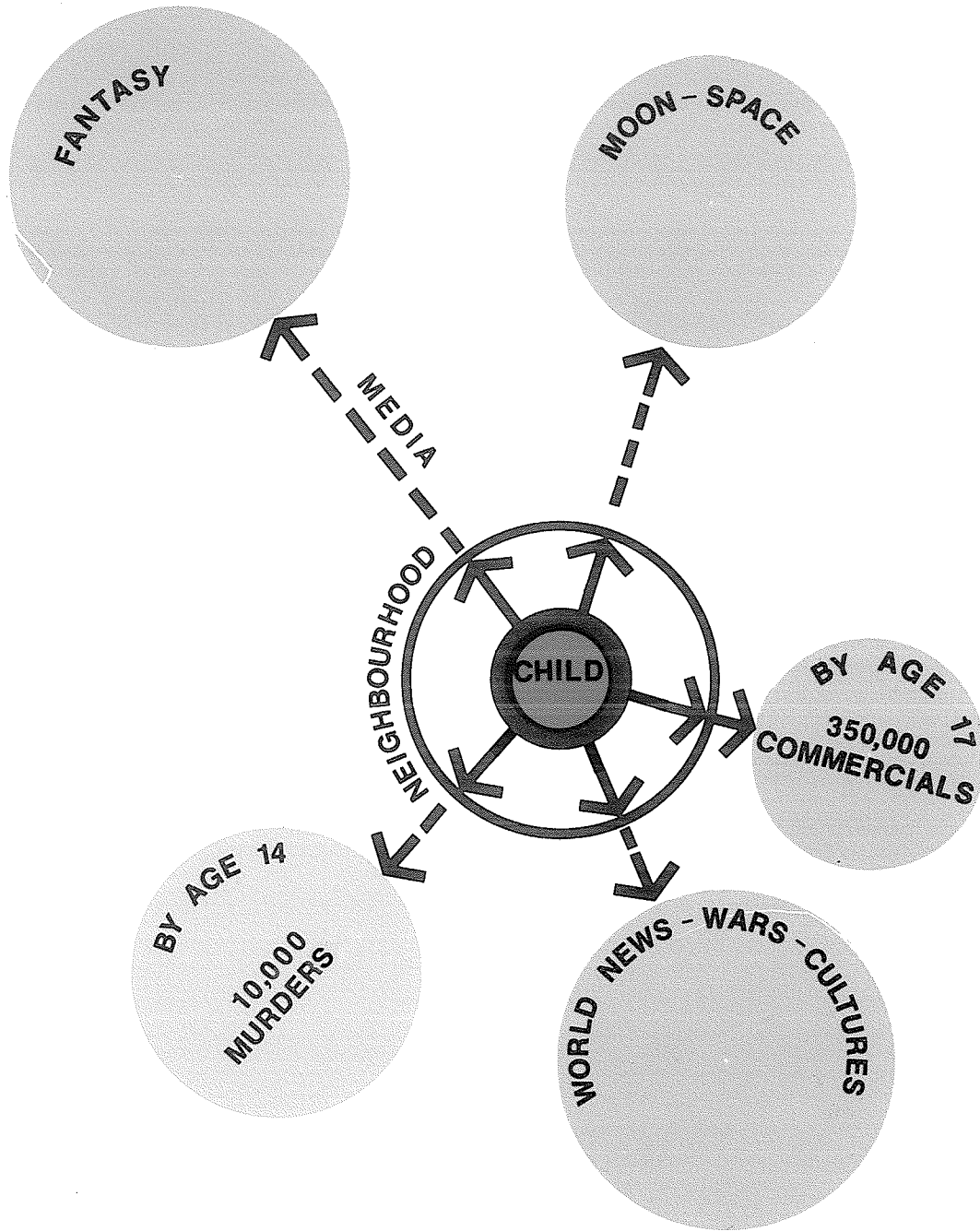
²⁵Report of the Educational Facilities Laboratories, The Schoolhouse in the City, p.14.

²⁶Report of the Ontario Department of Education, Living and learning: Provincial Committee on Aims and Objective of Education in the Schools of Ontario, p.159.

²⁷"71% of children's TV found violent in study," Toronto Daily Star, Sept. 8, 1971, n.p.

²⁸CKEY, Toronto broadcaster's comment concerning a report from the American Pediatric Association, January, 1972.

²⁹"71% of children's TV," Toronto Daily Star, Sept.8, 1971



MEDIA ENVIRONMENT

this problem. The teacher simply telephones the central library and receives the program on the TV in the classroom when desired. Films are not as widely used on account of the inconvenience in transporting all the equipment from the central library and then setting it up in the classroom. However, by means of a cable link from school to film library, teachers can or will be able to merely telephone for the film which they have chosen from a catalogue, and receive it on the class TV set only sixty seconds later. An experiment using such a scheme was tried successfully in five Ottawa schools. Unfortunately, the process is very expensive.³⁰

The library is still the major resource centre in schools, supplemented by both instructional materials and audio-visual equipment. In the future, computers may take over the provision of specific individual teaching material.

Marshall McLuhan believes that television, a 'cool' medium, completely engages the audience, initiating 'high participation'. Consequently, children are involved. Since they experience a homelife dominated by such media they are confused when they encounter the scheduled and fragmented classroom. "The TV child expects involvement and doesn't want a specialist's job in the future. He does want a role and a deep commitment to his society!"³¹

A special federal committee was designated to make a study of the plight of poor children who seemed to be caught in a school system which

³⁰"Phone order TV for classes," Toronto Daily Star, Sept. 8, 1971.

³¹Marshall McLuhan, Understanding Media: The Extensions of Man, p. 292.

was ill-designed for them. Non-adaptive behaviour and general poor progress of the students is the result.³² However, since two separate studies done in the United States involving 124,000 grade school children, representing many racial-ethnic groups proved that little if any difference in intellectual and academic achievement exists between various white and minority groups, when social and environmental factors are taken into account, the problem area seems fairly clear.³³ From these observations, the results of the Federal Study, which discovered disadvantages in poverty children's social and environmental backgrounds, seem obvious. Many children suffered from inadequacies in diet, sleep, clothing and in general, suffered because of an over-crowded home environment. The study indicates that the lack of a father-figure often increases the child's difficulty in adjusting to the school system particularly if the remaining family members suffer from either economic or psychological problems. The 'Big Brother' organizations are an effort to alleviate such conditions, by providing an outlet and companionship for a child.

Public school teachers feel that it is necessary for parents to take an active interest in their children's education, such that they can re-enforce what the school teaches. All parents have rights in the education of their child and in knowing of his development in the school.³⁴

³²"Teachers in our downtown schools in 'unparalleled plight'," Toronto Daily Star, Insight, Aug. 24, 1971, p.8.

³³"Racial groups equal in intelligence: Report," Toronto Daily Star, Sept. 4, 1971.

³⁴"Teachers in our Downtown," Toronto Daily Star, Insight, Aug. 24, 1971, p.8.

However, although teachers are responsible for educating the children enrolled and in informing the parents of the children's progress, they are not in their present role responsible for 'community' education. "The role of the teacher is being confused with that of social worker, family counsellor and child care worker to the detriment of classroom activity".³⁵ Perhaps this is good? The teacher's role may have to be redefined to meet the changing needs of society and in particular to meet the problems of the poverty child (see figure 34).

The Ontario Liberal Party platform recommends that the best teachers, the most research, the smallest classrooms should occur in kindergarten and elementary schools where children get their first exposure to formal education. These conditions, along with home tutoring programs for pre-school children who need assistance may help all children beginning the educational process, and may particularly help the poverty child.³⁶

A.S. Neill, founder of Summerhill school in England, caused great controversy on account of his freedom and non-teaching techniques. His approaches to child rearing do agree with the educational aims that the home and school should have a single purpose and point of view, but this seems to be the only place where his ideas and those of the school system coincide. Neill believes, (his philosophy is not elaborated here), that there is no reason to actually teach children lessons or how to behave. They will learn in time what they want to know and what is right and wrong, if they are not pressured.³⁷

³⁵Ibid.

³⁶"Better teaching urged for junior grades," Globe and Mail, Toronto, Jan. 12, 1971.

³⁷A.S. Neill, Summerhill: A Radical Approach to Child Rearing, p.254.

Another concept of education, diametrically opposed to Summerhillian philosophy is that of 'money-back' schooling, or specifically, performance contracting. Private companies, perhaps a textbook publisher or groups of psychologists and teachers, take over public classrooms. Almost any teaching methods may be employed and when the children excel, the firms or teachers get bonuses. For those children who fail to meet the national (U.S.) standards, the school boards receive refunds. In Gary, Indiana, where the average was low, especially in reading, the technique produced an educational gain. One accusation of the performance contracting was that it focused too much on subjects that showed well on tests. However, the plan failed to boost the achievement in many cities and the whole operation proved too expensive for hard-pressed city schools that perhaps needed it most.³⁸ The likening of the procedure to mechanization and the assembly line makes one wonder whether it is good for any human being, let alone a developing child.

Needless to say educational philosophy is in a constant state of change. No insurance can be given that the physical environment being produced for learning today will be flexible enough to accommodate the educational philosophies of to-morrow. The relevance of school itself as an environment for learning may even be questioned. Perhaps the schools built today are "destined to last longer than the educational ideas that generate them."³⁹

One wonders whether learning is a pre-planned totally defined process dependent upon teaching? The process of learning has become the

³⁸"Money-Back Schools: Unclear Balance Sheet", Time, Education, Oct. 11, 1971, p.59.

³⁹Editorial, Progressive Architecture, February, 1971.

acquisition of a body of facts and rules instead of a process concerned with relating new facts and experiences to those one has already assimilated.

Dr. Dale Alam from Michigan experimented with disadvantaged children outside the classroom. He took fourth graders to the ski slopes. Here the children had to use their own efforts and couldn't blame anyone else if they fell. This 'teaching device' helped the students to gain much more confidence in themselves than they could have in the typical classroom. The work performance of many of these children in a contained school room increased thereafter.⁴⁰ By discovering that the child lacks confidence, a pre-requisite for formal studies, and then finding the best way to achieve the need, Dr. Alam truly 'educated' the children. This method also proved that one can 'open-up' the classroom as much by moving out of it as by changing the environment within. Perhaps the open-plan system should extend into the community, achieving a diversity of developmental experiences far exceeding those possible within an educational institution.

A program for uniting industries and the teaching of crafts has often been suggested, particularly for children in secondary schools. Technical on-the-job training for students by prospective employers would eliminate the need for lavish school shops. The difference in expenditures could be applied to the new 'teachers'.⁴¹

⁴⁰Sue Smith, "Professors, Collegians teach grade schoolers," Christian Science Monitor, April 11, 1971.

⁴¹"Let Industry, Schools unite to teach crafts," Toronto Daily Star, Sept. 8, 1971.

This concept could extend for children of all ages into varying 'spaces' in the city. One example would be a visit into the business offices and such buildings as the Toronto-Dominion complex. Here children would coincide with the orbits of the adult businessman, and be introduced as well to Canada's largest unofficial art gallery. The works of A.Y. Jackson, Harold Town, Picasso, Miro and Calder belong to the offices of many of the business firms therein. Children would love the pop-art in the Alcan offices in the Royal Trust building, while they learn what aluminum is all about. Needless to say the co-operation of many people and the possible need of a curator would have to be considered.⁴² The Science Centre, Museum and art galleries are already well-patronized by children.

Summary

As the four or even the three day work week encroaches, it becomes more important to guide children to make valuable use of their time such that they will be able to make use of the added leisure. Many of the programs sponsored by the 'Opportunities for Youth' grants last summer exposed various arts and crafts to children of all ages. Another idea is evident in an art gallery in Stockholm which provides a children's experimental room within the gallery, allowing them to paint and make things while being an integral part of the public scene. This was a personal observation.

Robert Welch, the Minister of Education in Ontario, prophesied,

"Education"- the extension of knowledge, the continuous development of our talents, the refinement of our tastes- has become, in 2071, the central purpose of our lives. It is difficult to

⁴²Susan Swan, "The T-D Centre: It's this country's biggest art gallery," Toronto Daily Star, Entertainment, Sept. 25, 1971, p.53.

realize that as recently as one century ago, it was still thought of as synonymous with "school"; that there was a sharp dividing line between "work" and "education".⁴³

Both Marshall McLuhan (see supra, p.89) and Buckminster Fuller see the change from job to role, from specialist tasks to generalists roles.⁴⁴

Total involvement in one's role, coupled with an honest interest in human values and a concern for further needs of the individual, is the way of many of the new generation today, that will perhaps become an accepted state of mind by 2000. Welch predicts that the first step in decentralization of education will be small 'open-area' community schools supplemented by community resources, as have been briefly considered.

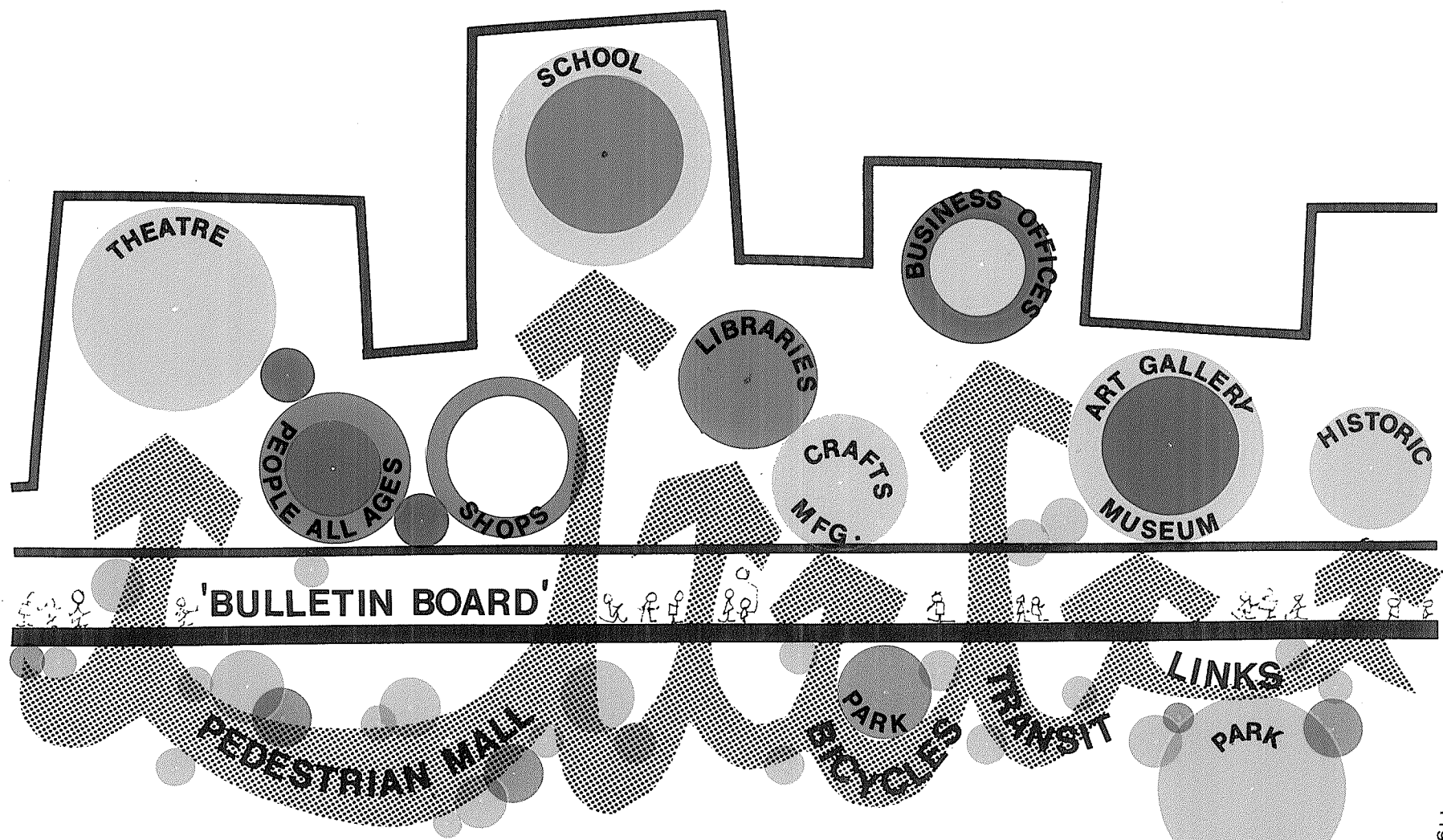
If education is to become synonymous with life, no attempt must be made to contain life in one institutional building (see figure 38).

Everything we do is education. The city is education but the architecture of education rarely has much to do with the building of schools. The city should be a school house and its ground floor can be both bulletin board and library.⁴⁵

⁴³"2071", Toronto Daily Star, June 11, 1971, p.12.

⁴⁴R. Buckminster Fuller, Education Automation, pp.80-82.

⁴⁵Richard Saul Wurman, "Making the City Observable," Design Quarterly, Vol.80.

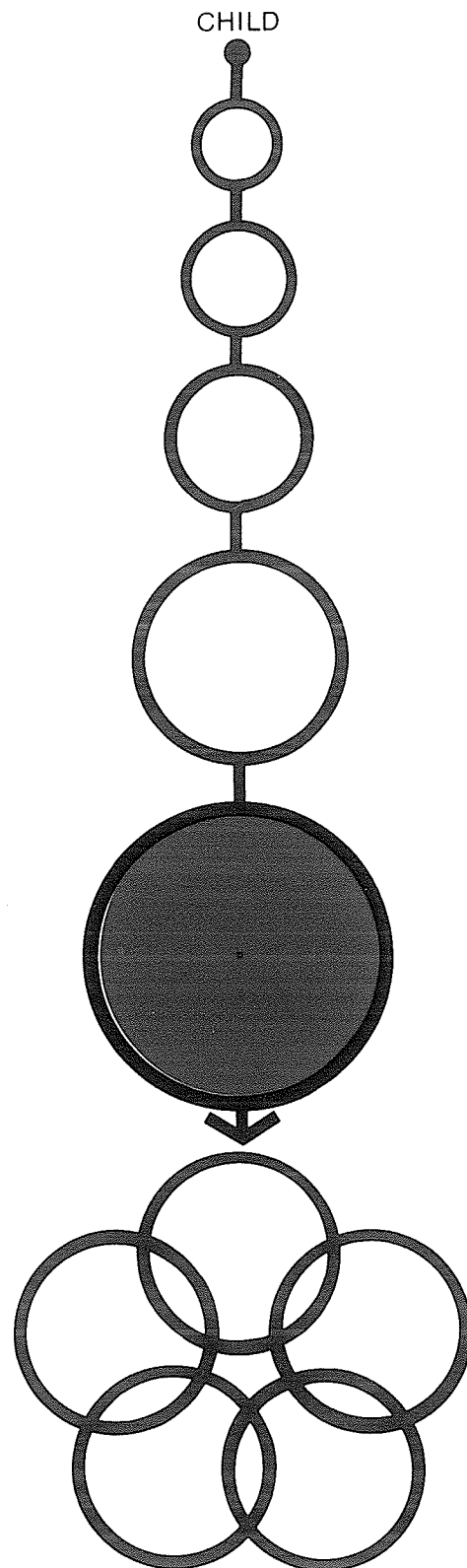


CITY - SCHOOLHOUSE

Fig. 38

DEVELOPMENTAL INFLUENCES

COMMUNITY - CITY



COMMUNITY-CITY

As early as the 1940's and 1950's, the exodus from city to suburb began in most North American cities. The density of the city cores produced such inconveniences as spastic transportation facilities, poor communications and high taxation. Families were forced due to general malaise, the housing shortage and the desire for the one family home to the sprawling suburb which they hoped would offer a better environment for rearing children.¹

But, since 1963, the large cities have no longer been net losers of jobs. The growth of business, personal and government activities has offset the decline which occurred primarily in manufacturing. By 1970, large cities contained as large a share of rapidly growing activities as the suburbs.²

Simple boredom, along with other problems, caused many families to re-migrate to the city. The result has been a perpetual flow of people back and forth. The constant movement of people, along with the various pressures of urbanization which will seemingly cause the suburb to become part of a larger expanding city core, has affected the pattern of community living in both city and suburban neighbourhoods.

Professor Sermat, a psychologist at York University, in Toronto indicates that our modern cities are stricken by an epidemic of loneliness. He feels that "the closer people are herded together, the further they

¹"Why companies are fleeing the cities," Time, Business, Apr.26, 1971, pp.62-63; "When companies go suburban," Business Week, Management, Dec.12, 1970, pp.58-59.

²A. Ganz, "The future of the central city," The American City, August, 1970, pp.57-59.

seem to grow apart psychologically".³ Dr. Michelson, of the University of Toronto, speaks of a possibility of a direct relationship between pathology and housing type. He refers specifically to a study done by Rosenberg who also feels that high density housing promotes loneliness rather than crowding.⁴ In 1970, the Toronto Distress Centre, received over 16,000 pleas for help. Most of the callers complained about extreme loneliness.⁵

One of the foundations of acute loneliness in human beings is the original lack of trusting relationships in childhood. The period of adolescence could also be one of loneliness if the child experiences alienation either from parents or contemporaries.⁶ The problem appears to be psychological, sociological and physiological. Is there a need for increasing the ease of contact between people of all ages in an effort to liberate the modern city?

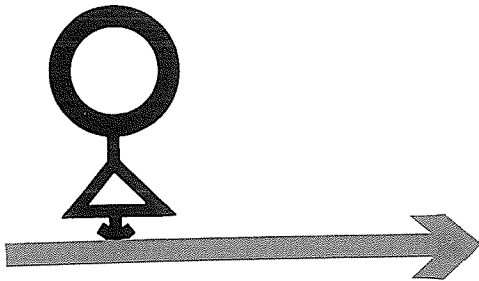
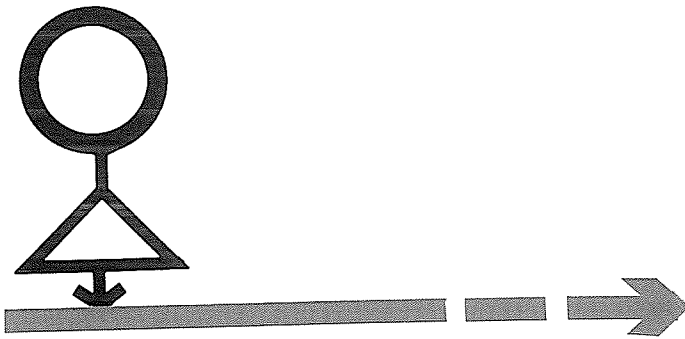
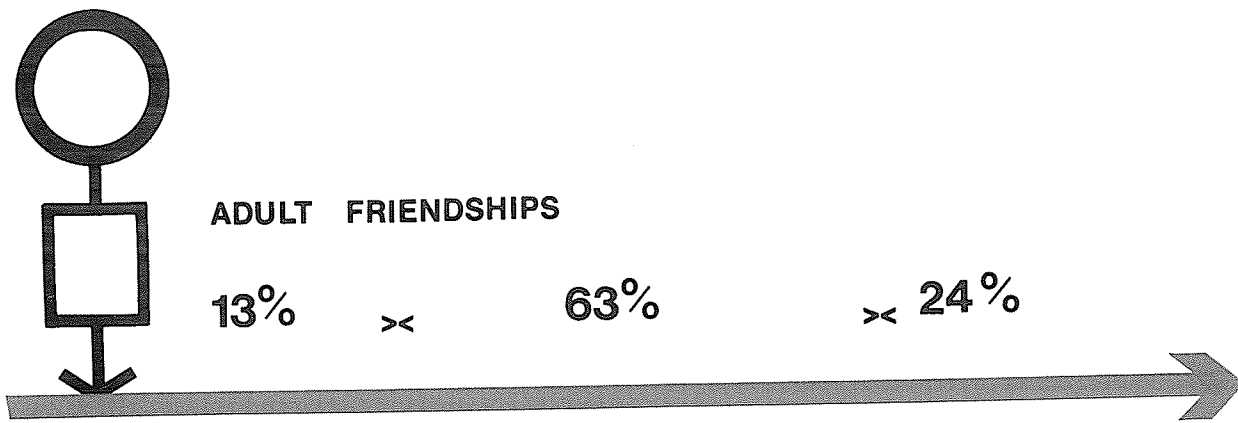
The city, in outgrowing the coherence of the village has become "despatialized". Urban residents have closest friends spread far and wide. Few actually live near their companions. A study of social relationships of East Yorkers showed that thirteen per cent of the respondent's friends lived in the same neighbourhood, sixty-three per cent in other parts of the city and twenty-four per cent outside the city (see figures 40 and 41). Transportation and communications systems naturally

³S. Katz, "All alone," Toronto Daily Star, Insight, Sept. 18, 1971, p.17.

⁴G. Rosenberg, "High Population Densities in Relation to Social Behaviour," Ekistics, Vol.25 (1960), pp.425-27; cited by W. Michelson, Man and His Urban Environment, p.162.

⁵Katz, op. cit.

⁶Ibid.

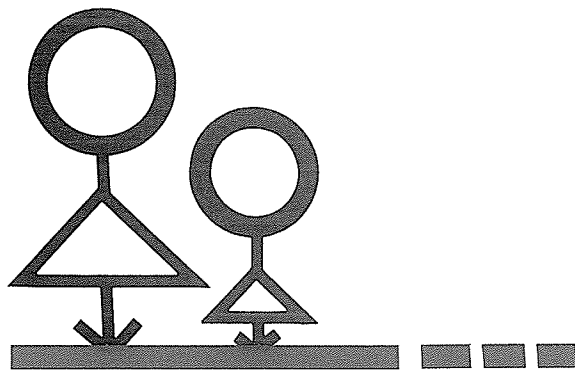
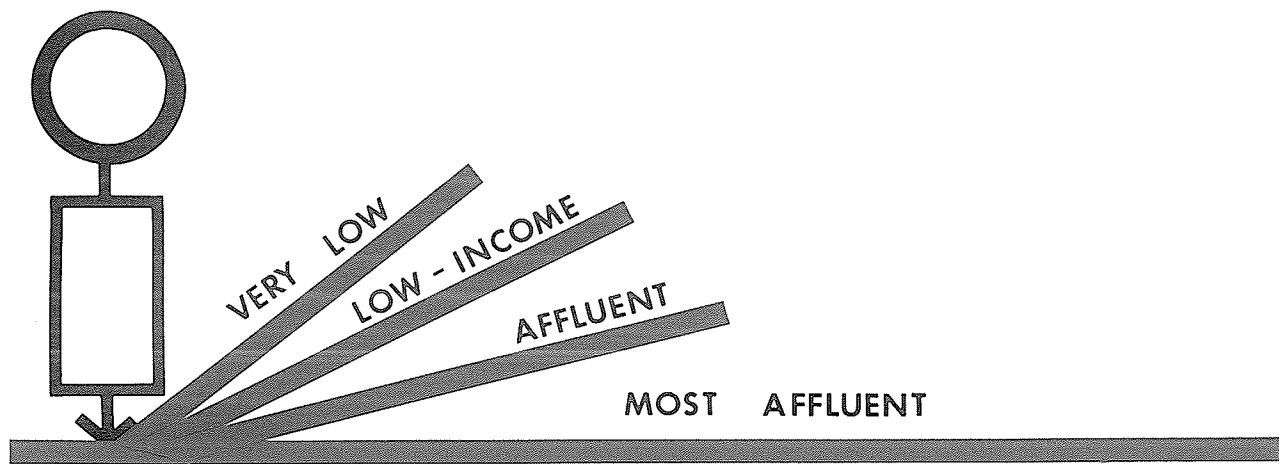


NEIGHBOURHOOD **CITY-BEYOND**

A horizontal arrow pointing right, with the text "NEIGHBOURHOOD" above the start and "CITY-BEYOND" above the end.

CITY MOBILITY

A thick horizontal bar with the text "CITY MOBILITY" above it.



SUBURB MOBILITY

play a vital part in friendships. This indicates that better transportation routes linking residential areas, lower long-distance telephone rates and extensions of local telephone boundaries should be considered. Neighbourhoods have become a device for physical planning rather than a basis for social relationships. Only due to the sorting function of some districts do they provide friends, but still not always a significant portion of them. The neighbourhood with its traditional values is anachronistic.⁷

Urbanites, as indicated, are forming 'selective communities' not defined by physical boundaries. Selective communities consist of people with shared interests. The size of the city with the variety of activities available, increases the likelihood that other people with similar interests exist if contact among them occurs. The desire for specific companions is more acute for those with particular intellectual or specialty interests.⁸ Although people are transcending traditional neighbourhood based ties, there remains a major problem for many who are unable to find the opportunity for formation of communities of interest.⁹

This selectiveness does not eliminate neighbourhood functions entirely. Neighbourhoods are still useful as a social control, particularly for child protection, when considering the value of familiar faces or the number of people on the street. The focus for community spirit remains in a neighbourhood when the residents must band together to fight for a community cause (i.e. when an area of detached dwellings fights the encroachment of apartment developers or highway planners). The

⁷B. Wellman, "Is the day of the neighbourhood over?" Toronto Daily Star. A discussion of the neighbourhood as a focus of a community of interest rather than as a basis for social relationships.

⁸Ibid.

⁹Katz, loc. cit.

neighbourhood is a defined unit which its members can feel is an identifiable home place. A feeling of permanence is needed by most adults as well as children.¹⁰

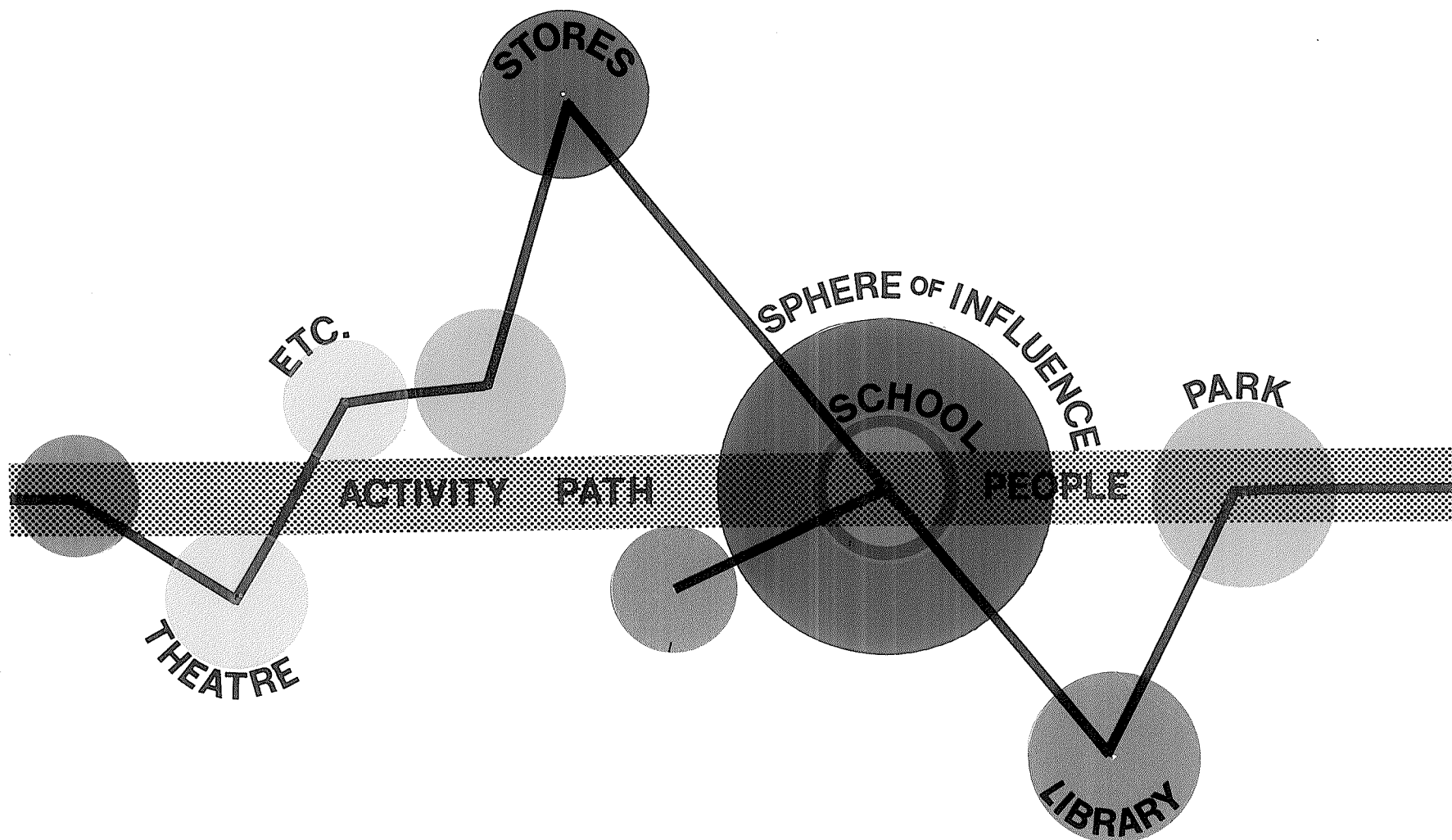
The willingness for people to neighbour is re-enforced by social similarities such as age, family cycle, occupational interests. Immigrants usually seek their own 'kind' of community for social and cultural ties. The variety of housing types in a city is more conducive to these neighbourhoods than suburban tracts. People, immobilized by old age, family responsibilities or ill health often migrate to each other. The isolation and boredom of the suburb often results from the lack of a first or second family car, causing mothers to seek companionship in the immediate vicinity. Children are often the information link between houses instigating either adult friendliness or dissension. The homogeneity of these areas does tend to attract a high percentage of congenial neighbouring people. However, the conveniences, the choices for stimulation and activity in the suburb do not compare with those in the city. Mothers, particularly professional women and children beyond the stage where they are contented with the back-yard sandpit, are most affected by what becomes a 'psychological slum' in the suburb.

The pace of society is such that children are often uprooted to a new neighbourhood. No evidence is available to indicate whether children have the independence, the adult mobility or the specific needs to seek 'selective communities' which would endure the many moves of the friends involved. They spend most of their childhood with friends from

¹⁰Wellman, loc. cit.

'home' territory which is usually their immediate neighbourhood. These events suggest that the child should perhaps be compensated with something specific in his environment in order to alleviate the possible stress of moving. Or perhaps children have inherent powers of adaptation, the ability to readjust to new territory? Before conclusions can be drawn, the designer whether concerned with the physical aspects of the environment or not must understand how and how much the child identifies with his neighbourhood. Perhaps a child can adjust to the greater city network and inner-city relocation will be absolutely no problem at all. Information collected concerning certain features and components of the city network provide a basis for such an investigation, as follows.

Most thriving city regions are typified by certain factors of diversity. Each area is served by one or two primary functions ensuring the presence of people who venture out on different schedules and for different purposes. The normal presence of adults on busy sidewalks produces 'eyes of the street', a natural safety factor for children who are also interested in the life of the street. Isn't this a worthwhile form of diversion, of recreation? Jacobs indicates that the situation on the street is much safer, let alone more exciting, than many isolated parks which are often natural areas for delinquency. As a result, the designer must be particularly careful to give attention not only to the street as a place where children will be, but to the relationship of the playground to the neighbourhood activities. If children are to be attracted to designated play areas they should not be isolated (see figure 42) from the commercial activities of the vicinity. Unused dead-end spaces should not be merely converted into parks before the surrounding area is



RELATIONSHIP OF ACTIVITIES ?

revitalized with diversified healthy activities.¹¹

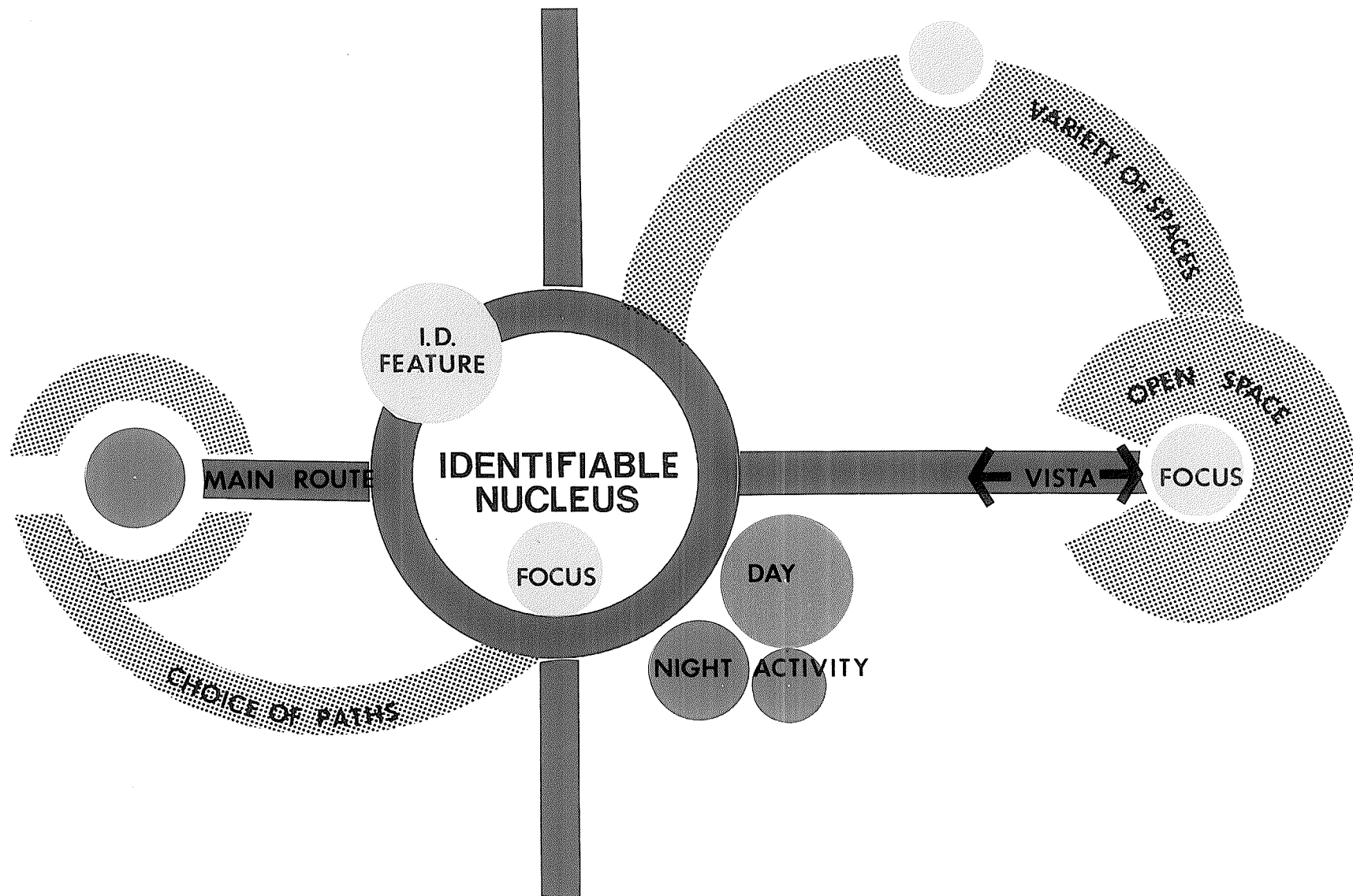
The blocks must be short, eliminating monotony by providing frequent alternatives of direction. Physical fatigue can be delayed if one experiences a sense of orientation, a visual variation, complexity and scale in the environment. The district should include or mingle buildings which vary in age and condition. If there is a good number of old buildings which may consequently vary in economic yield, the district can support various activities.¹²

The peripheral area of an activity is important, since the child (and adult) identifies with the streets which are the routes to his destination. The designer should recognize where in the course of their journey (ie. to school) children feel that they are actually beginning the approach to the site. In short, the geographical sphere of influence generated by the school or activity is important in terms of the images which the child experiences within it. Kevin Lynch writes of the "need for a certain plasticity in the perceptual environment",¹³ considering the necessity of a diversity in paths and approaches to a subject sympathetic to the fact that people differ and their moods vary. Children must be accompanied along a variety of routes by both visual diversion and a feeling of orientation toward their destination. When the paths are merely familiar streets which are visually uneventful, the child continues toward his goal with no sense of progression or anticipation, (see figure 43).

¹¹J. Jacobs, Death and Life in Great American Cities, pp.89-110

¹²Ibid. pp.150-51.

¹³K. Lynch, The Image of the City, p.111.



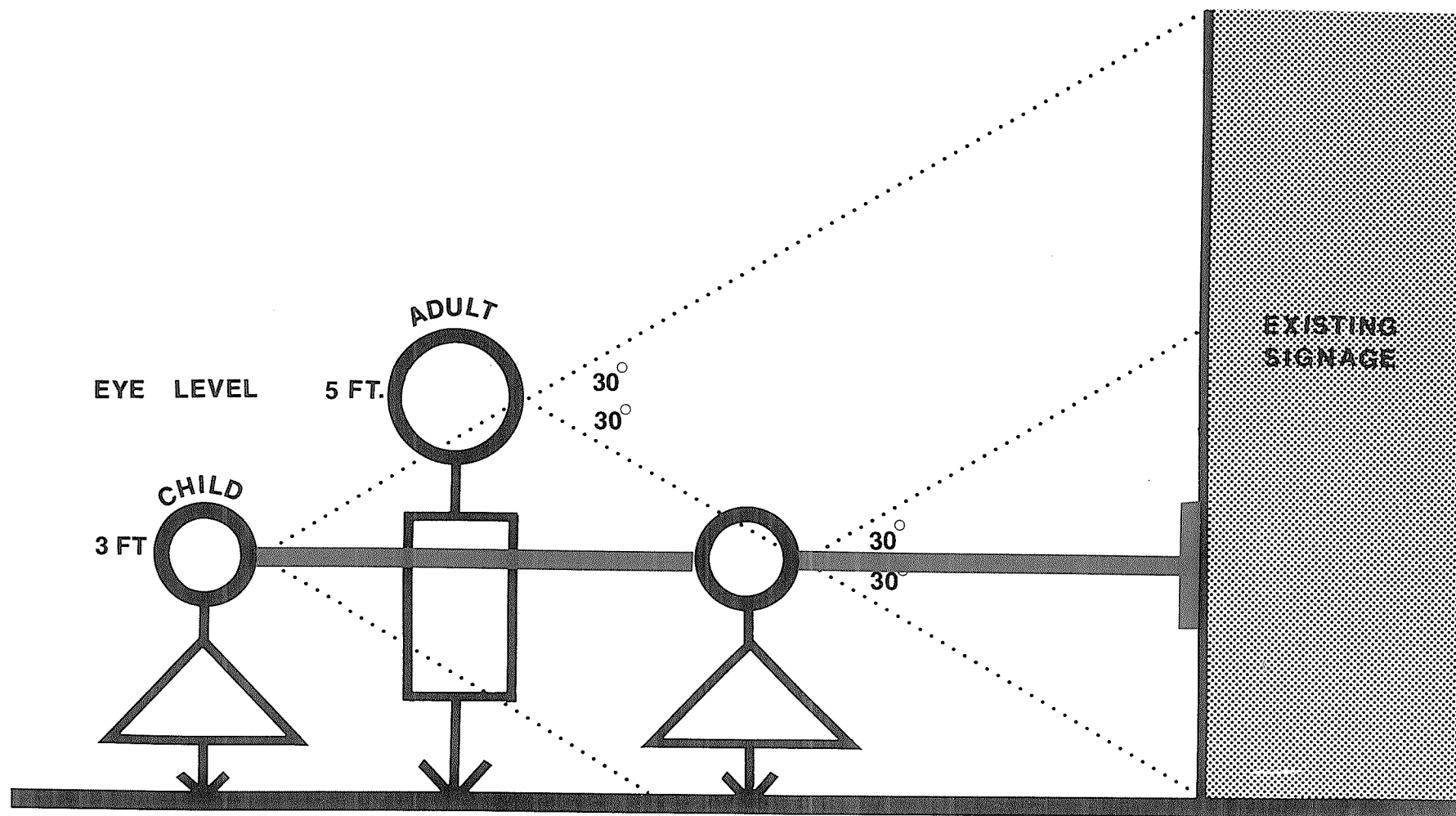
ORIENTATION/DIVERSITY

There are not many orientation points in the city of human, particularly of child scale, to soften the great images which the built-up environment has produced. The man-made dominates. To a child with an eye level of four feet for example, the buildings are almost devoid of perspective. The graphic illustrating the human radius of vision indicates that a person moves instinctively to a distance where his viewing angle is approximately thirty degrees vertically. This allows him a view of the surrounding buildings. In our cities a child or an adult cannot usually stand back far enough or find himself in a position to get this view (see figure 44).

The quality of enclosure (see figure 45) is the condition dealt with by A.E. Parr in his article entitled 'Psychological Aspects of Urbanology and the Child in the City'. He discusses the fact that no natural canyon or valley which is inhabited confines its horizontal dimensions between such close vertical borders as our urban avenues¹⁴ (see figure 45). In an effort to alleviate this enclosed feeling and resulting visual monotony, it would help if there were a juxtaposition of high and low buildings. Structures could be sited in perceivable groups thus providing open spaces and a chance for a clear if not a memorable image for the spectator.¹⁵ Where the built-up environment is already over-built in these terms, the designer should concentrate on the area of vision where the eye level of the child and the adult rests. One begins to feel that many of the conditions necessary to enhance the environment for the child in the city will also be of great benefit to the adult.

¹⁴A.E. Parr, "Psychological Aspects of Urbanology and the Child in the City," cited by Ekistics, Vol.25, No.151, June 1968, p.399.

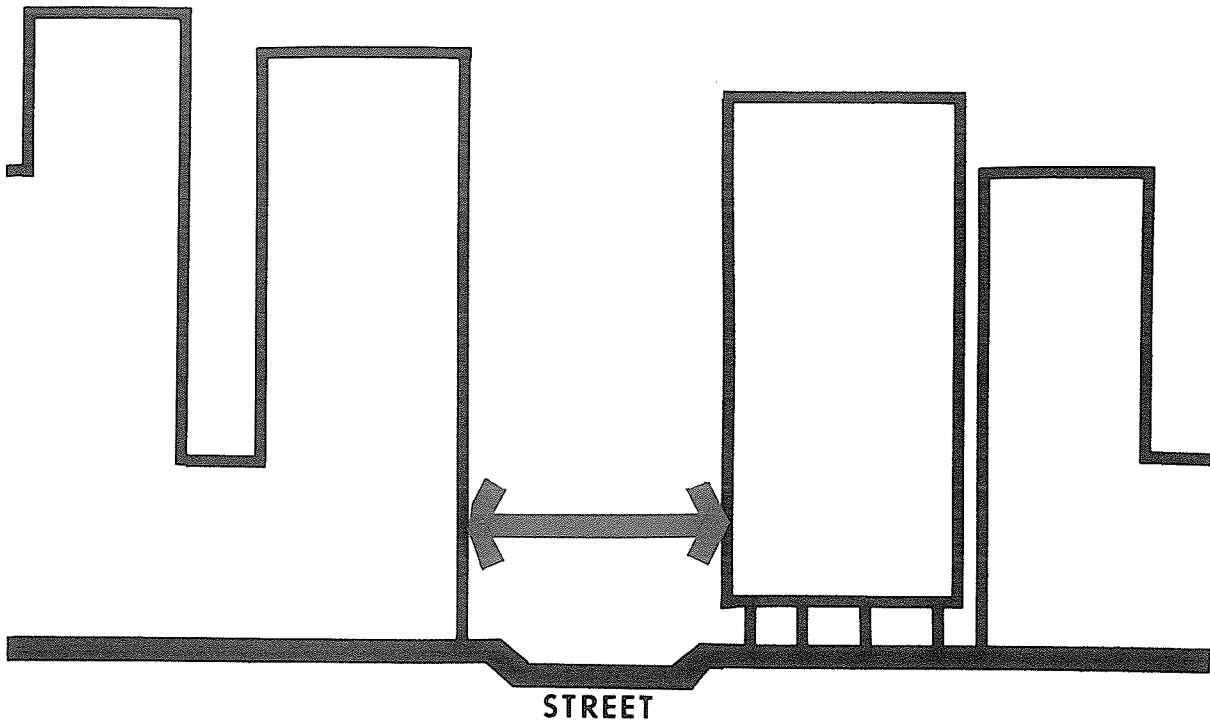
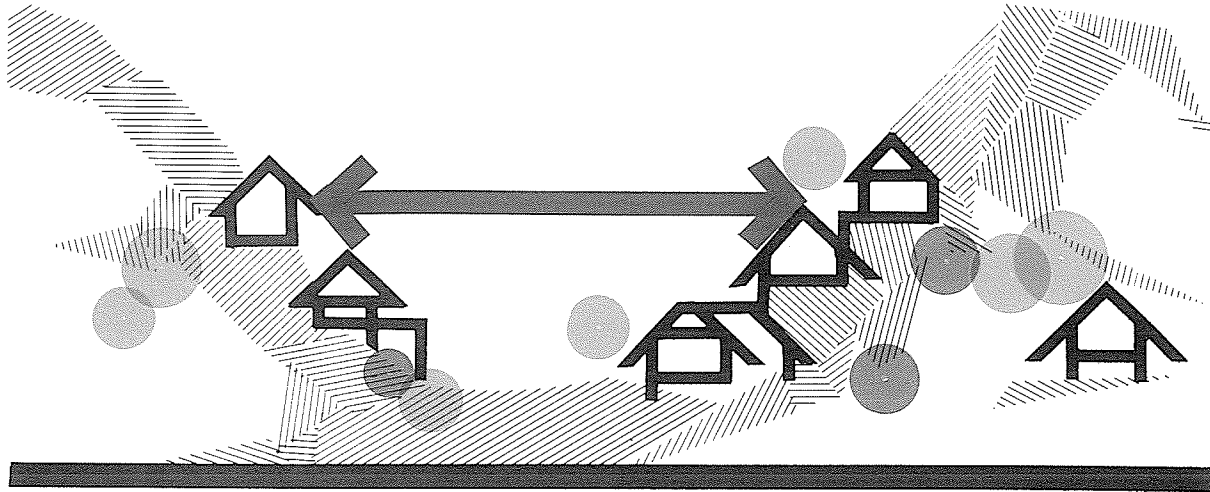
¹⁵Regional Plan Association, Urban Design Manhattan, prep. by Rai Y. Okomoto and Frank E. Williams, p.9.



VIEWING ANGLE

NO NATURAL INHABITED VALLEY IS AS
CONFINED AS OUR URBAN AVENUES

Fig. 45 110



QUALITY OF SPACE

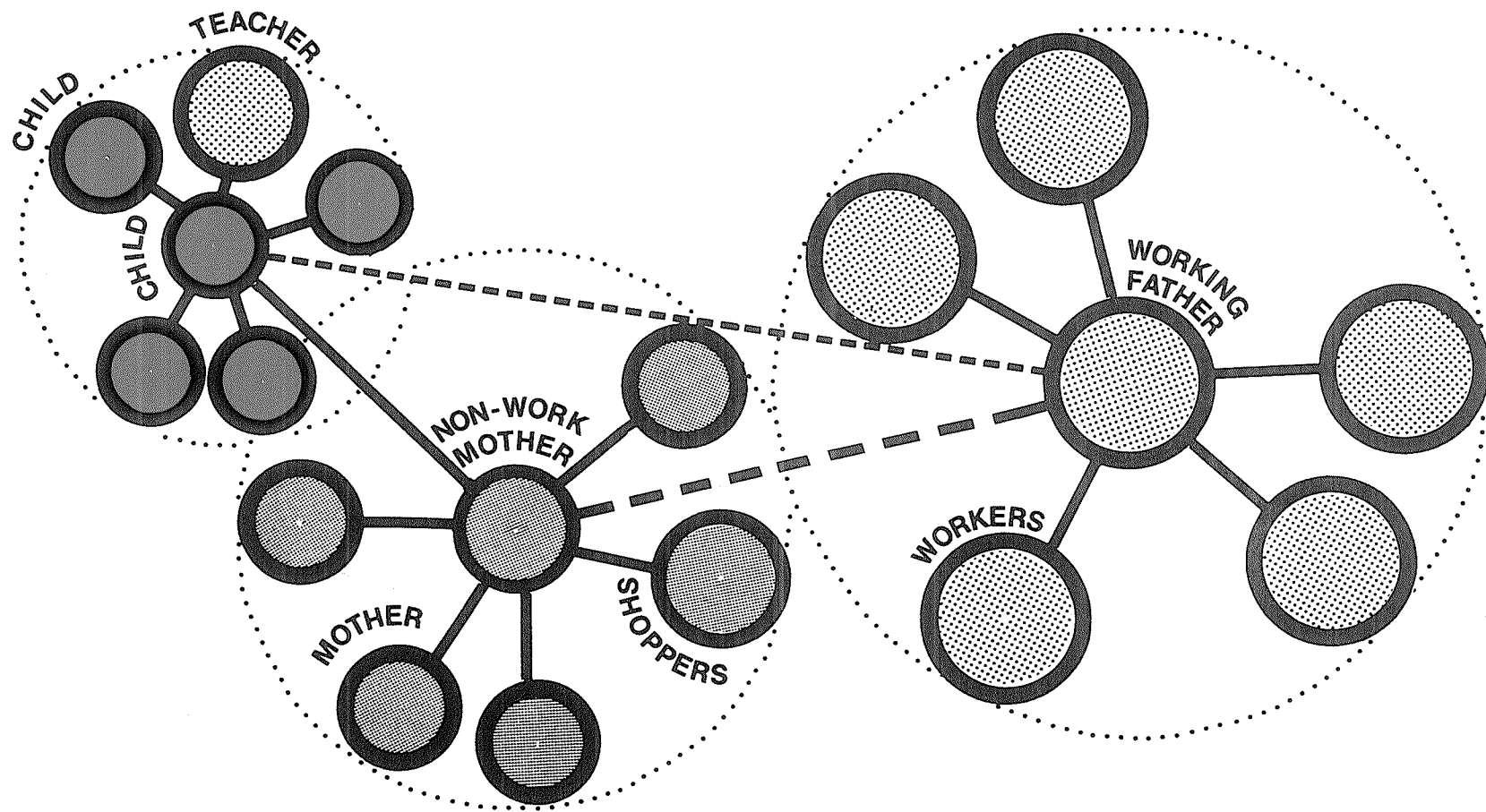
Parr compares the mobility of his childhood, sixty years ago, with that of today's urban child. The mobility of the adult is now greatly increased while that of the child is greatly reduced. The child is confined partly due the hazards of traffic but more because urban planners place schools and recreational areas as near the child's home as possible with the simplest routes between.¹⁶ Public schools are usually situated within an area serving a residential population of approximately five to seven thousand people. Accordingly, children attend the schools from the immediate vicinity. This area or activity orbit is entirely different from that of his parents. The actual radius depends upon his age, his ability to cope independently from adults and upon whether a prescribed territory is enforced by his peers.

Parr's child orbit was similar to that of his parents since the family orbits crossed often during the day. Our transportation facilities have resulted in giving both parents the possibility of more mobility but have created separate orbits for housewives and children from those of business workers (see figure 46). Parr feels that this reduction of urban experiences shared in common by men, women and children reduces their ability to communicate with each other. "In the close quarters of a city, there is no factor of greater consequence for enjoyment of life than the manner in which our successors relate to us, and we to them."¹⁷

Bicycle riding is becoming an avid method of exercise and transportation for children of all ages. Bicycling is not only a healthful activity for every member of the family, an aid to the city pollution

¹⁶Parr, op. cit., pp.401-03.

¹⁷Parr, "Making the City a Child's Milieu," New York Times, Sunday, 1971, (Mimeo).



DAILY SOCIAL ORBITS

problem, but also a method whereby a child can increase his radius of activity.

In Ottawa, planning has enforced special bicycle trails which can be followed along the river, but in most cities, children bicycling have difficulty competing with vehicular traffic. Crossing guards and longer traffic lights for both pedestrians and bicyclers do help the problem at intersections but ideally bicycles require special pathways as well as storage facilities throughout the city.

Many of our vehicular roads may eventually be confiscated for bicycles. This would relieve the city of much traffic congestion and provide the mainly flat terrain (which exists in Toronto) for bicycle riding. Automobiles require 350-450 square feet each for parking while a bicycle needs approximately twenty square feet and much more simple and less costly facilities.¹⁸ Many ingenious designs for bicycle parking have already been conceived.¹⁹ The swing to 'Pedal Power', instigated a group in Saskatoon under an 'Opportunities for Youth' program, to promote a scheme which involves supplying and keeping repaired nine yellow community bicycles for the free use of the residents.²⁰

An opportunity for inter-action of people of all ages occurred in the summer of 1971 which was the 'era of the mall' in Toronto. At different times, for a period of one week, sections of the downtown core were closed to vehicular traffic. The merchants opened their doors

¹⁸Lawrence Halprin, Cities, p.77.

¹⁹Ibid p.78.

²⁰"Pedal Power", Time, June 21, 1971, p.8.

to the newly-created festive mall space. Outdoor cafés, lined with potted trees, extended across the street; people filtered throughout and children especially were everywhere. They ate ice-cream, tapped to the music, sat on benches and watched people.²¹ Play or 'child activity' was apparently not always constant movement. Children, as adults, spent much of their time in inactive play, sitting or standing, while watching or talking with others. Similar conditions as the summer mall in Toronto exist permanently in Ottawa and Calgary.

Unfortunately, there are many examples where children have not been considered in city design, such as the token machines and ticket booths in the subway stations, which are difficult for small children to reach. Mail boxes are usually too high for children to even mail their own letter. These are small examples of actual child neglect.

The downtown pedestrian plan for the city core of Toronto, most of which is to be underground or climate-controlled, is slowly being implemented.²² Hopefully, the sterile monotonous walkways that exist will not be extended, but that the functional and perceptual needs of both children and adults will become a major concern in the project. This suggests a strong team effort involving many areas of knowledge, not an attempt by planners and architects based primarily on assumptions or economics.

²¹"40,000 love the mall; 'It's just like Paris' ", Toronto Daily Star, June 1, 1971, p.3; see also Trent Frayne, "The mall: seven-day miracle", Toronto Daily Star, Insight, June 5, 1971; see also "Young mall opening," Toronto Daily Star, Aug. 13, 1971, p.3.

²²A joint report by the Commissioner of Public Works, et al, On Foot Downtown, pp.2-6.

Summary

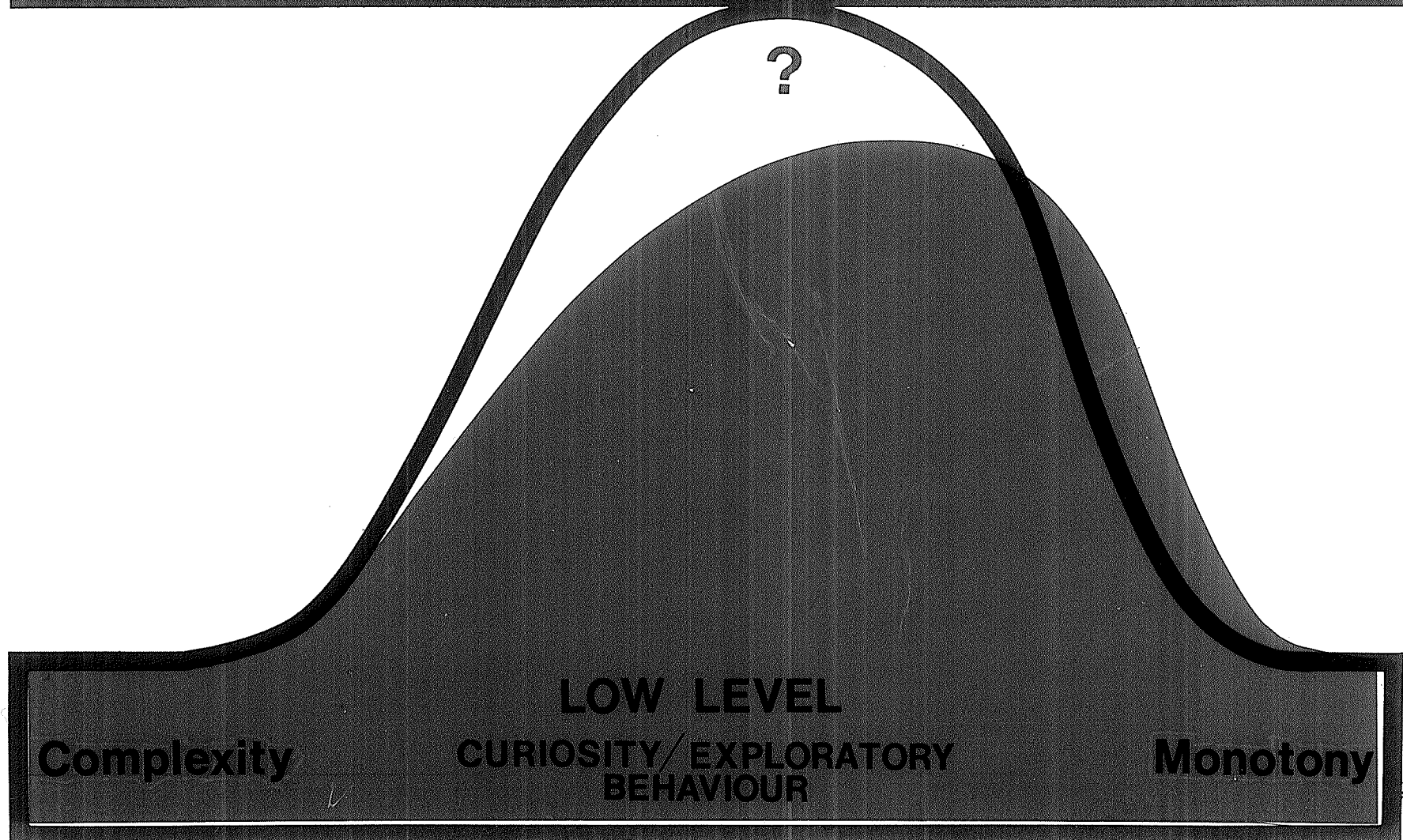
In her thesis concerning the 'Relationship Between the Environmental Setting and Curiosity in Children', McMahon confirms her hypothesis, derived from psychological theory that "the complex environment facilitates exploration (in children) and sustains a higher level of curiosity than inhabitants in more simple settings". These characteristics are related directly with intellectual development unless the environment becomes overwhelmingly complex, causing an avoidance behaviour.²³ "Complete psychological development depends on a multiplicity of an environmental stimuli. In their absence or if they are inadequate, intelligence does not develop normally and the personality becomes grossly atypical."²⁴ The illustration included (figure 47) indicates the need for sufficient knowledge of variables which influence the child's environment before the theoretical design line between complexity and monotony can become reality.

Consequently, a child must experience diversities and complexities of the physical environment, which relate directly to his need to experience the diversities and complexities of the human environment which is necessary for social education.

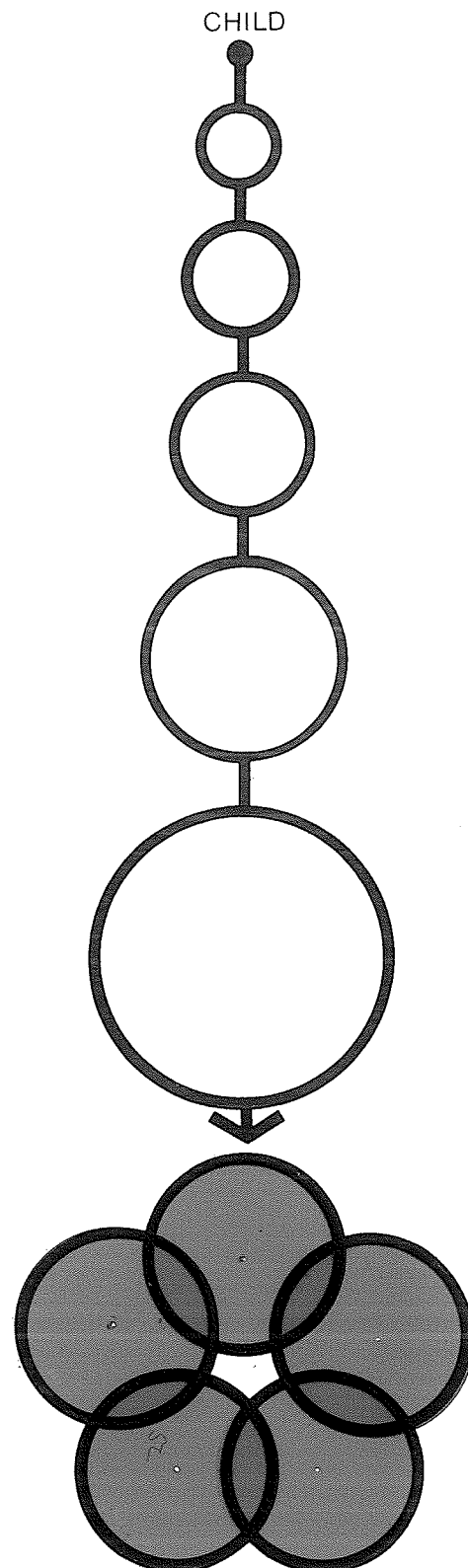
²³D. Fiske, and S.R. Maddi, "The Functions of Varied Experiences," cited by M.L. McMahon, "The Relationship Between Environmental Setting and Curiosity in Children," abstract.

²⁴M.L. McMahon, "The Relationship Between", p.65.

OPTIMAL LEVEL OF STIMULATION



DEVELOPMENTAL INFLUENCES



SUMMARY

SUMMARY

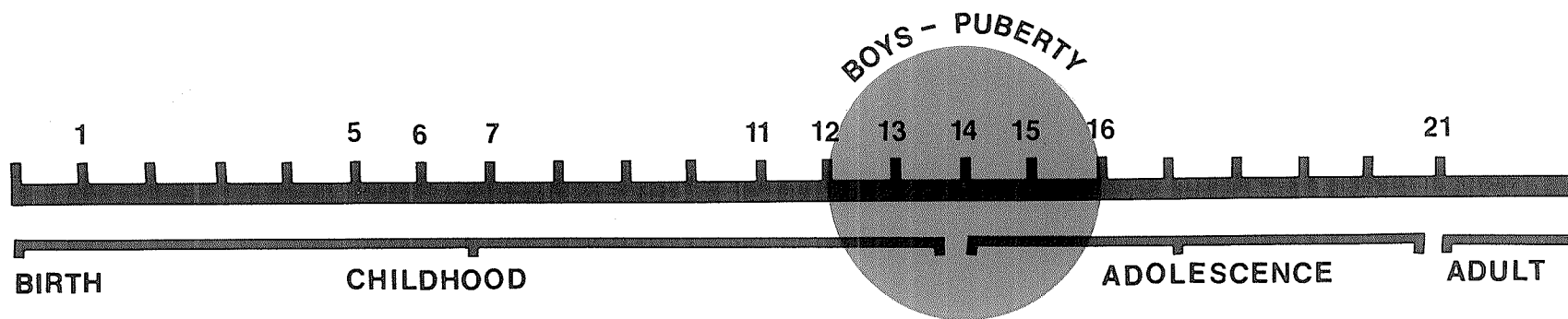
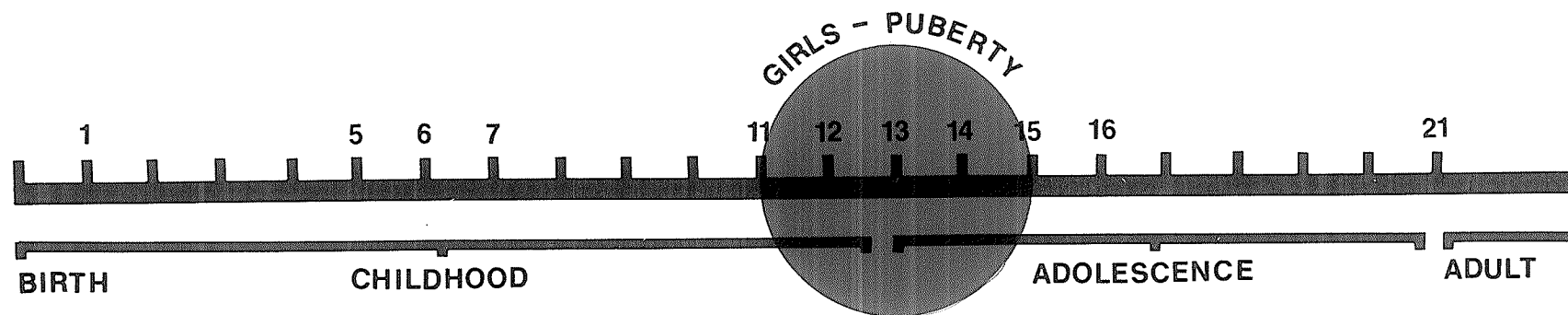
The works of Piaget decide that cultural factors and social experiences do affect the child's development. Mandatory requirements are not stated, but one is aware of the basic areas of development through which every normal child must progress.

The first area is physical maturation. If full maturation is not reached the intellectual development is usually abnormal in the child. Experiences, affected by cultural factors or by contact with particular objects have definite effects on basic development and outlook of the child. Social transmissions are incurred by infants through imitation, as in language. For a child to continue these transmissions, he must possess cognitive substructures which can assimilate what he hears from people, reads from books, etc. The final stage is equilibrium, which integrates the effects of the other three factors, by a self-regulating process. By adolescence, the child has reached a high degree of equilibrium. He is usually about twelve years old.¹ (Refer to figure 49 which depicts the overlap of childhood, puberty and adolescence.)

Reality varies for children of different ages or developmental groups. A child of three will not see the same things as a child of ten. All the realities conceived are legitimate.² One is also aware that the actual social environment can retard or hasten the development of children. However, there is no existing means of interpreting psychological evidence concerning the development of the child, into actual child needs,

¹Herbert Ginsberg and Sylvia Oppen, Piaget's Theory of Intellectual Development, pp.168-75.

²Ibid. p.217.



PHYSICAL DEVELOPMENT

such that the designer can re-interpret these needs into beneficial, stimulating environments for children in various formative stages.

The observations in the previous sections indicate that there not only exists a variability of the many inter-relating influences upon the child in the city but that there exists a variability in theories and statements presented by authorities concerned with specific areas of the examination.

But, if we wish the cities to survive our century, and believe that they might do so, with intelligent care, then it becomes far more logical to consider the child as the most important member of the urban community at all times.³

³A.E. Parr, "To Make the City a Child's Milieu," New York Times, Sunday, July 4, 1971.

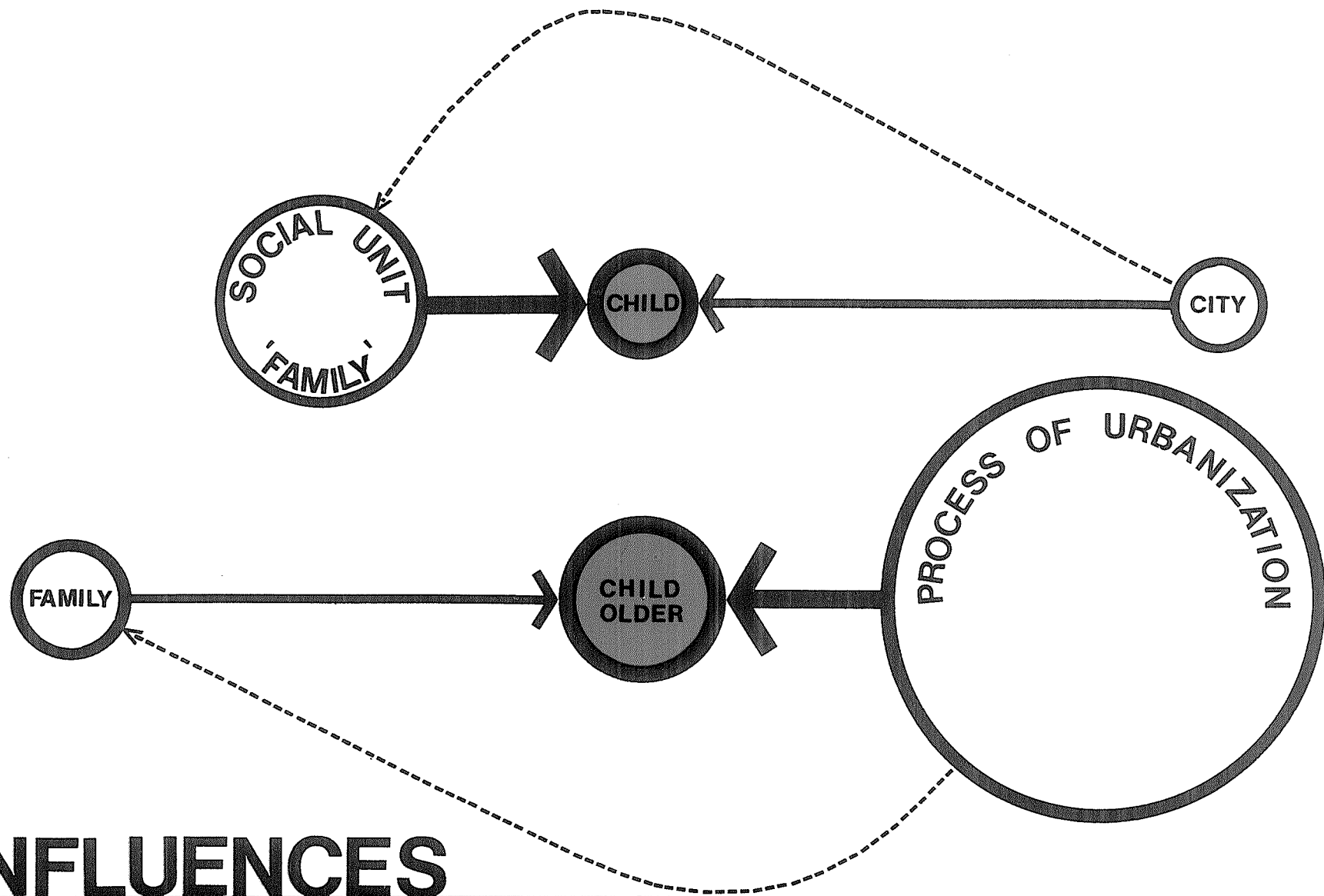
CHAPTER TWO

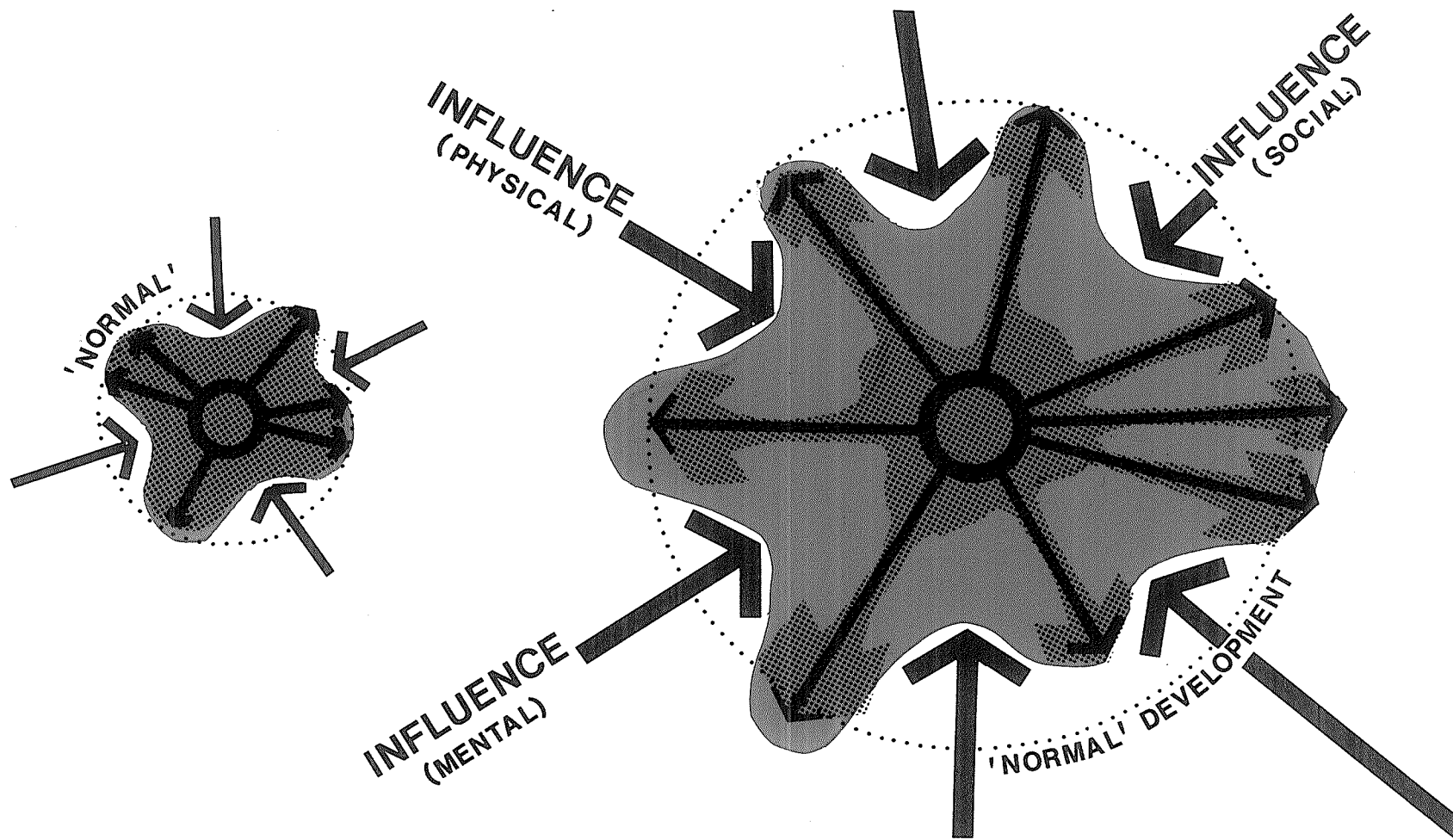
C O N C L U S I O N S

(1) There are many interacting variables which have an influence on the development of the child in the city. One of the major influences into which the child is born is the social unit. This first social unit may take a variety of forms, affecting each child in the first, perhaps most critical years of his life. As the child develops, becoming more independent and mobile, the influences upon him remain, as illustrated in figure 50, but generally differ in intensity. The influence of the life style, diet and habits of the mother during gestation and perhaps the sub-conscious effects of the process of urbanization transferred by the family unit to the child in an early stage, are difficult to ascertain. Figures 51 and 52 give a hypothetical example of the development of the child as a consequence of the various influences upon him.

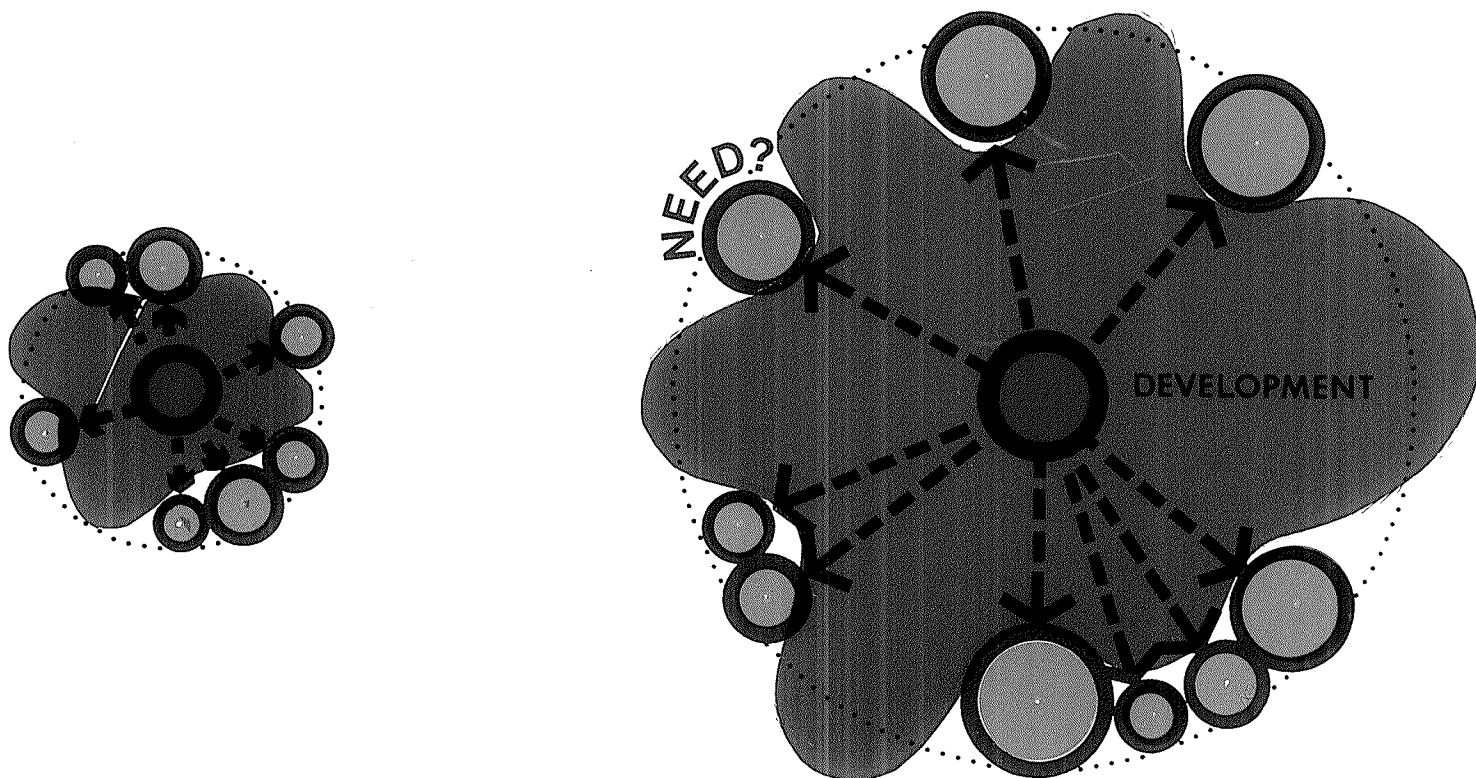
Although all children are influenced greatly by their experiences in both the social and physical environment, they are each affected in different ways and in different degrees. For example, a child living on the twenty-first floor of a low-rental apartment building, with several brothers and sisters, no mother and a father who works night shifts, definitely experiences different influences than a child who is reared almost entirely by the family maid and lives in an environment wherein he is seldom exposed to children of his own age.

INFLUENCES





INFLUENCES ON DEVELOPMENT



RESULTS (NEEDS ?)

(2) Many observations of existing environmental phenomena have been recorded, resulting in an overwhelming collection of data. The preceding chapter presents selected collections of data concerned with specific areas of the child's development, particularly within the urban context. This data is not conclusive in its existing form since it is difficult or more often impossible to interpret into the kinds of factual information required for designing for the development of the child in the city. (In this thesis the terms 'data' and 'information' are interchangeable).

A researcher, such as psychologist or sociologist, collects data and compiles it in such a way that it is generally useful for his specific purposes only. This data is incomplete and unqualified in terms of what the designer requires for good design, and as a result, the influences on the life of each child in the city remain difficult to understand.

Following is a brief analysis of three samples of data, randomly extracted from the preceding chapter, in order to point out the difficulties and inconclusiveness of data in its present form.

DATA EXAMPLE - 1

For children up to the age of five years old, there should be a maximum radial distance of 130 yards from their dwelling to an intermediate or junior playpark. (See supra, p.56)

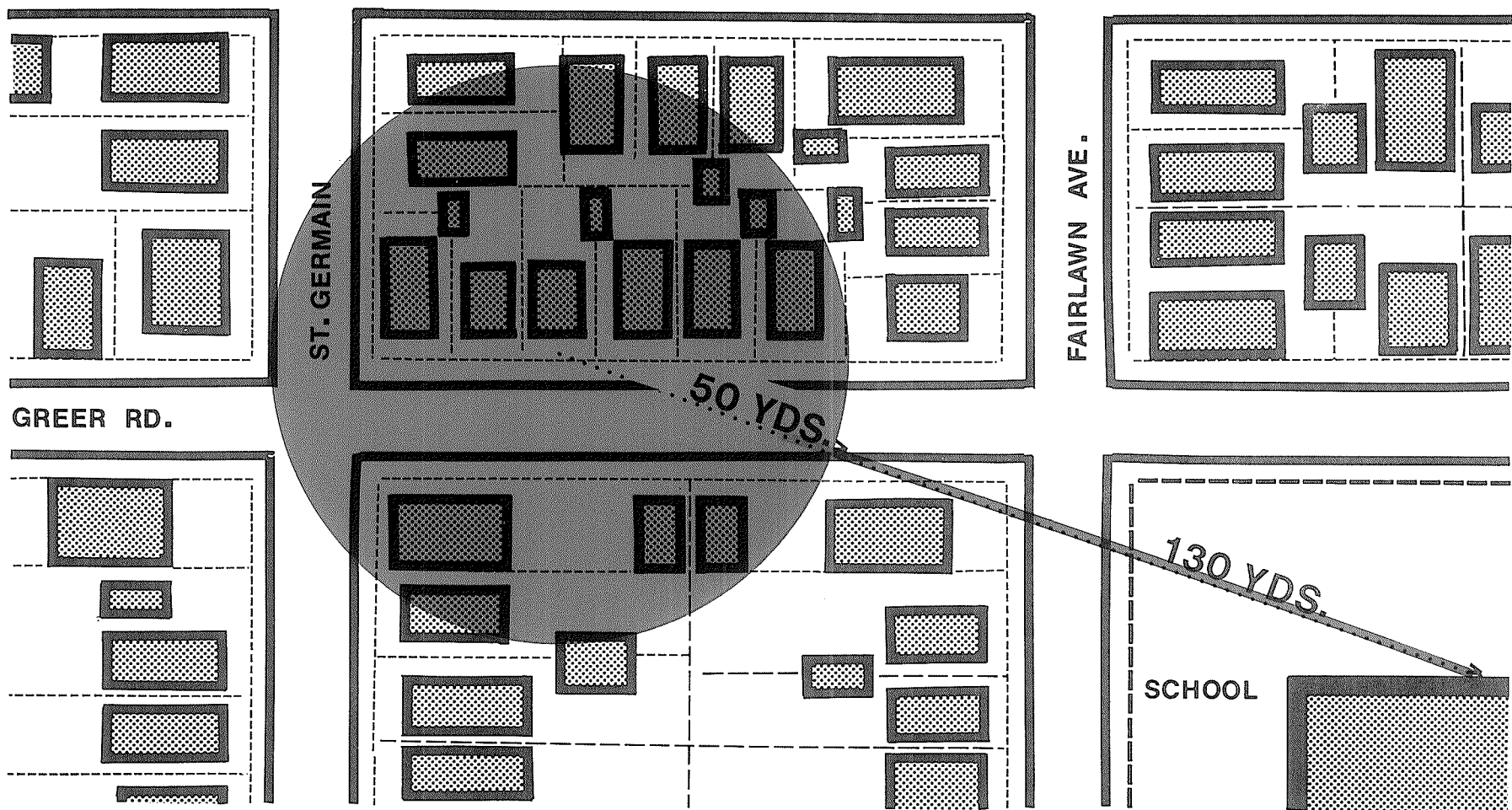
A preliminary comment upon this data may be that since children develop at different rates, the imposition of age specifications on play spaces is unrealistic and could perhaps be detrimental when considering

the slow learner who may wish to remain in a junior park until a later age. The definite separation of such spaces could put undue pressure upon a child to immediately join his own age group. This idea could have widespread implications on the present segregation of spaces for various age groups.

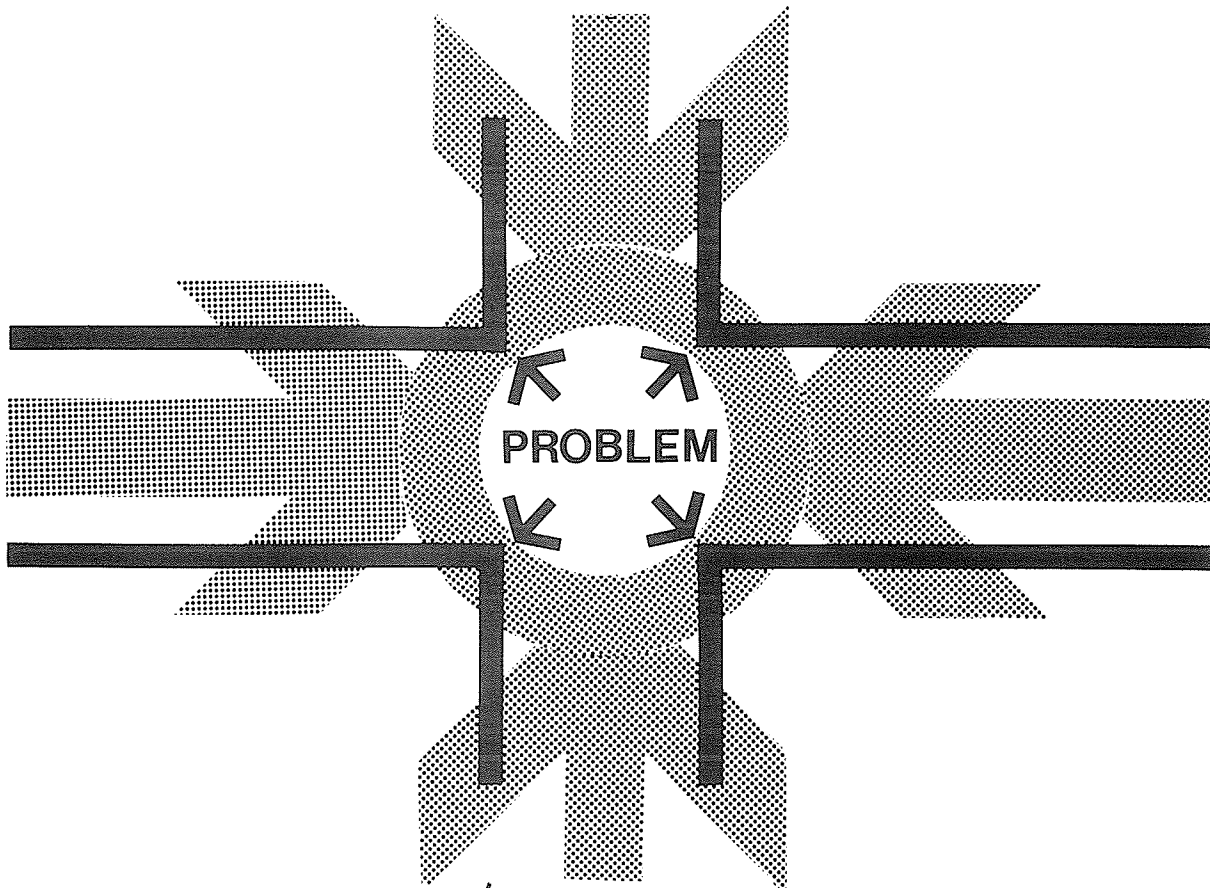
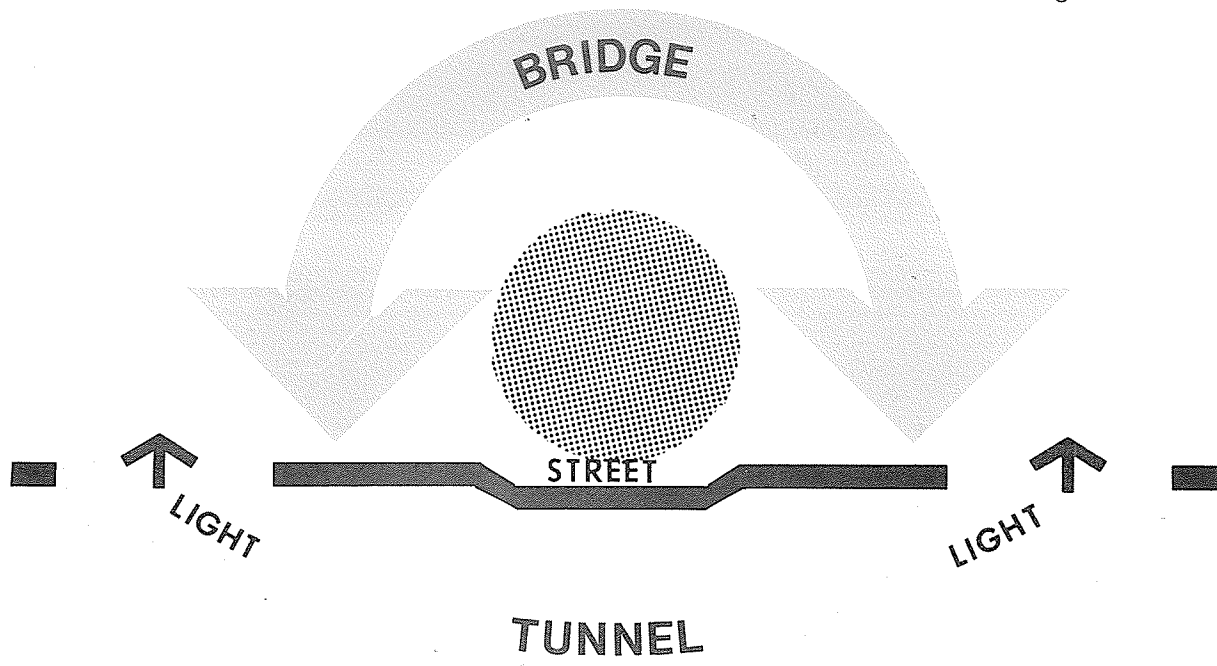
Regarding a few primarily residential city blocks, (see figure 53) indicates how many properties would be confiscated as a result of the use of such data. Many sections of the city would be punctuated with small playparks, occurring after every few buildings or houses. Such planning measures seem unreasonable, not only from an economic point of view but from a recreational need. The reason why small children need such a park within 130 yards is not yet given. If the data was applied to a housing estate it might be feasible, although the actual reasons for such planning are still necessary.

If one considers 130 yards as a vertical measure, then the current prejudices against the high-rise as an environment for raising children would have to be revised. Corbusier's solution for Marseilles would provide an immediate answer for this apparent need, (refer to figure 16).

Does the data result from an analysis of the child's physical ability, mental capabilities, from a safety factor or perhaps a psychological need of the child or his mother? For example, if the problem concerns the difficulty the child experiences in crossing heavy traffic, (see figure 54), the solution to the problem may be quite different than if the problem concerns a psychological or visual distance which may be necessary for the well-being of the child. Also, is the situation of



DATA APPLIED ?



TRAFFIC/CONFUSION !

the play area in relation to the rest of the community important or is it merely the radial distance from home that planners should consider?

Safdie establishes similar criteria, that children from three to six should be able to wander safely up to a distance of 150 feet and furthermore be able to meet six to ten children of their own age in this area (see figure 24). Neither the social nor the physical implications of this data are qualified. Should the colour of a playmate's eyes, his pigment, his ethnic background be specified also?

This data is obviously incomplete and unqualified in its present form. When applied to a specific instance the figure could possibly be quite meaningful, but applied generally, it is misleading.

DATA EXAMPLE - 2

The sand box is one of the most popular pieces of play equipment with children (refer to figure 27). (The assumption is made that the sand supplied within a box, or on a beach for that matter is what children prefer. The box itself is irrelevant to the observation.) From personal observations both indoors at Roden Public School and outdoors in play grounds in many Canadian as well as European cities, this ascertainment seems very valid.

However, as a designer of the physical environment, interested in the developmental requirements of the child, this data is still not complete. Designers need to understand not only that sand play or perhaps play with other 'soft manipulable material' rates highly with children, but why it rates highly. The reason why sand play agrees with

children could then be considered in many facets of design for children, whether it be in a physical solution or not. Similar questions may be asked concerning water play, (refer to figure 27).

DATA EXAMPLE - 3

In London, England, seventy-two per cent of the children who live above the fourth floor of many apartment buildings which were selected for specific observations, seldom play with children of their own age. In Stockholm, Sweden, children who live on the lower four floors of an apartment building, play outside one hour longer each day than the children who live above them. Children living above the eighth floor are almost always accompanied by adults when they leave the building, (refer to figure 15). An obvious solution, still without realizing the actual problem, would be to design eight floor apartment buildings, with all the outdoor amenities, minus the automobile, on the fourth floor. The illustration, figure 16, furthers this idea.

Similarly, the apartment suites on the upper floors of the John Hancock building, situated in the central core of Chicago, have been rationalized for families with children by the fact that those who could afford such accommodations would naturally have maids who could take the children in and out. For such a city environment as Chicago it may well be safer for children to live as high up as possible and to only leave the building with a maid or a body-guard.

However, the preceding solutions are only intermediary measures applied to symptomatic observations. The actual reasons behind the behaviour or actions are not available. Designers cannot accept the

fact that children on the tenth floor do not go outside as much as children on the third floor just because they live higher up. In either situation the child must go down to grade, usually taking an elevator. As indicated in the chapter referring to this data there is no evidence that it is safer for a child living on a lower floor to venture outside. The opposite situation may actually prevail since the child is closer to the automobile. There is also no evidence that children are psychologically affected by the longer elevator ride when they live on the upper floors. They may even enjoy using the elevator as much as they enjoy using a swing.

The reasons for the differences in child performance should be examined fully. The reason may be a psychological one for mothers rather than for children and perhaps should be dealt with in a different way. The more explicitly the situation is presented, the easier it is to understand, to analyze, to solve. Observations of existing phenomena only tell us what occurs, not why it occurs.

The preceding examples of data verify that the quality of information available to the architect is unsuitable for his purposes. The following chapter deals with recommendations for the amelioration of this situation, particularly with reference to the development of the child in the city.

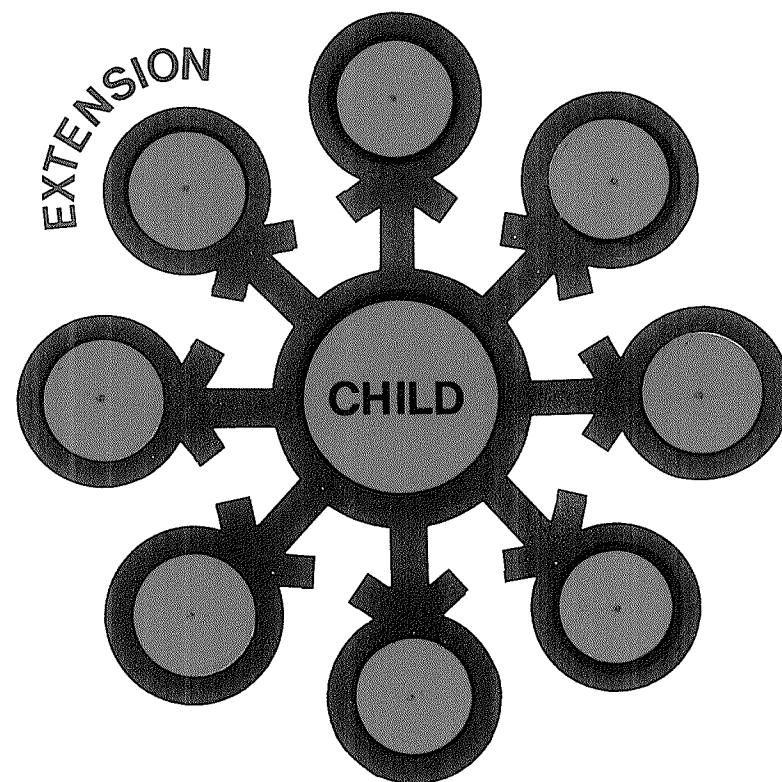
CHAPTER THREE

R E C O M M E N D A T I O N S

The recommendations propose a system (see figure 58) for dealing with the kind of information which is required in designing for the development of the child in the city. Theoretically, one can think of a child, as diagrammed in figure 55, in terms of his extensions. These extensions represent mental and physical behaviour and behavioural supports or modifiers. Each extension relates to a particular facet of the child's being which is usually the subject of a specific faculty or faculties of knowledge. For example, the mental state of a child at any given time consists of various extensions. They may be studied by a psychologist, psychiatrist, sociologist. Each discipline collects its own information, by its own methods, for its own purposes; although such studies as bio-medicine, bio-statistics, bio-medical-electronics, indicate that attempts are being made in some fields to cross these arbitrary borders.

As discussed in the conclusions, each child is susceptible to a variety of environmental influences. All children may have the same extensions but have different social and cultural components, which modify the common characteristics. Thus it is extremely difficult for a member of one discipline who works only within a single area of knowledge

PHYSICAL & MENTAL BEHAVIOUR AND BEHAVIOURAL SUPPORTS



CHILD EXTENSIONS

to arrive at conclusions which are meaningful for the full development of the child in the city. As illustrated in figures 56 and 57, designers are currently producing physical solutions for the child from data collected from observable phenomena, general observations or by intuition. As concluded in this thesis, these observations do not reveal the required facts concerning the reasons for child behaviour or the needs of the various child extensions. Hence, the designer is unable to evolve new and creative solutions to problems. He can only project from existing data.

A method to ascertain from child extensions, the reasons or 'whys' children behave as they do in various situations is required. The method of extracting this usable information from the child is a vital operation within the system (see figure 59). Techniques will have to be devised by the researchers or teams of researchers, depending upon the extension of the child being analyzed. The researchers (or searchers) may be the same people who collect data for other purposes not specified in this thesis. If such a program does not succeed within the existing fields of research, architects will have to produce specialists from within, to accumulate the required knowledge for design. The availability of these 'facts' (which would now become published material, translated into terms comprehensible to many areas of knowledge) would make it possible for the architect to include other disciplines in a team analysis of the problem at hand. The conclusions could then be a direct result of team analysis which may advise a particular physical or non-physical solution (see figure 60). Theoretically, the results, whether they be physical solutions or whether they be translated in another media altogether, will be the most meaningful set of solutions for the development of the child in the city.

**EXISTING
SITUATION**

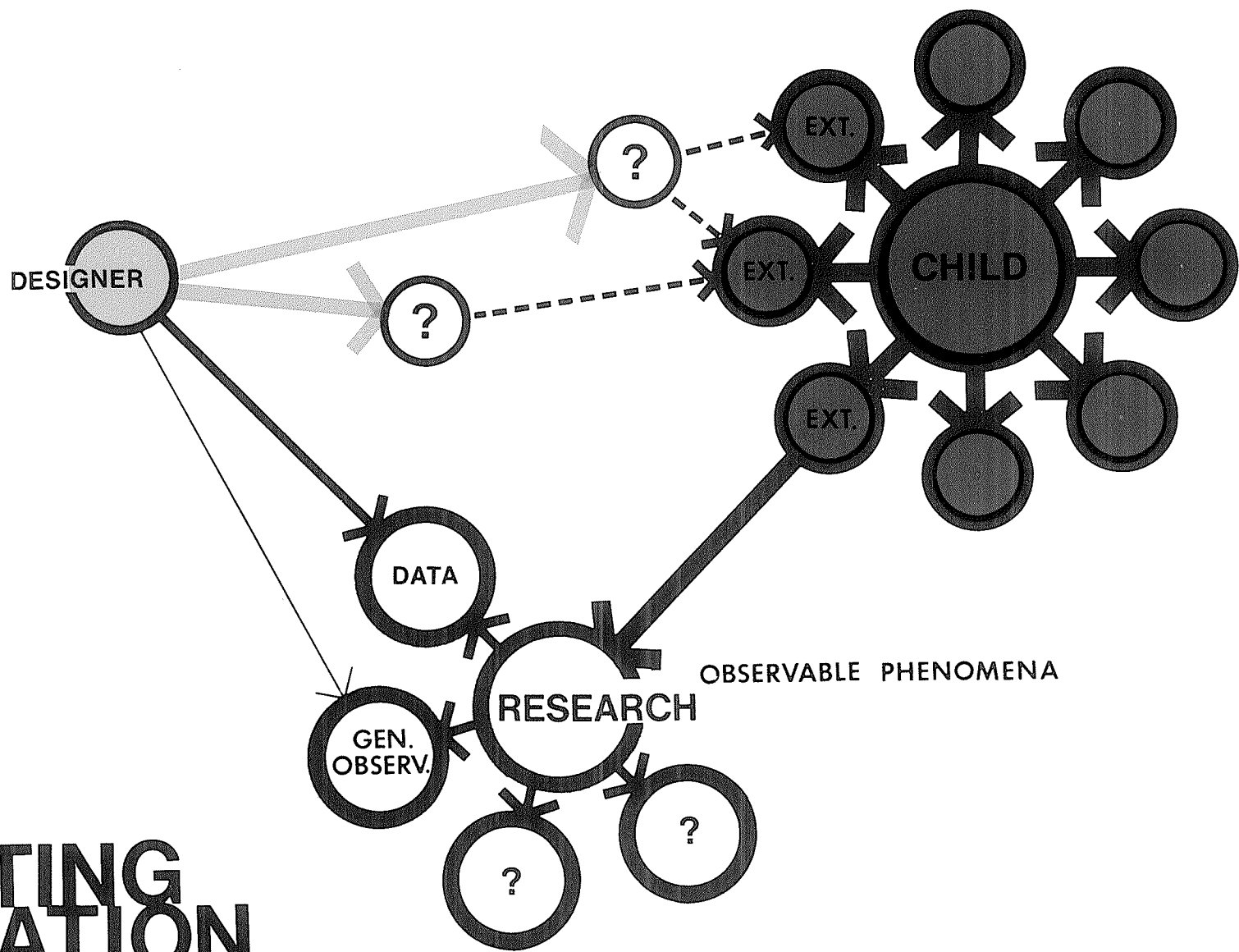
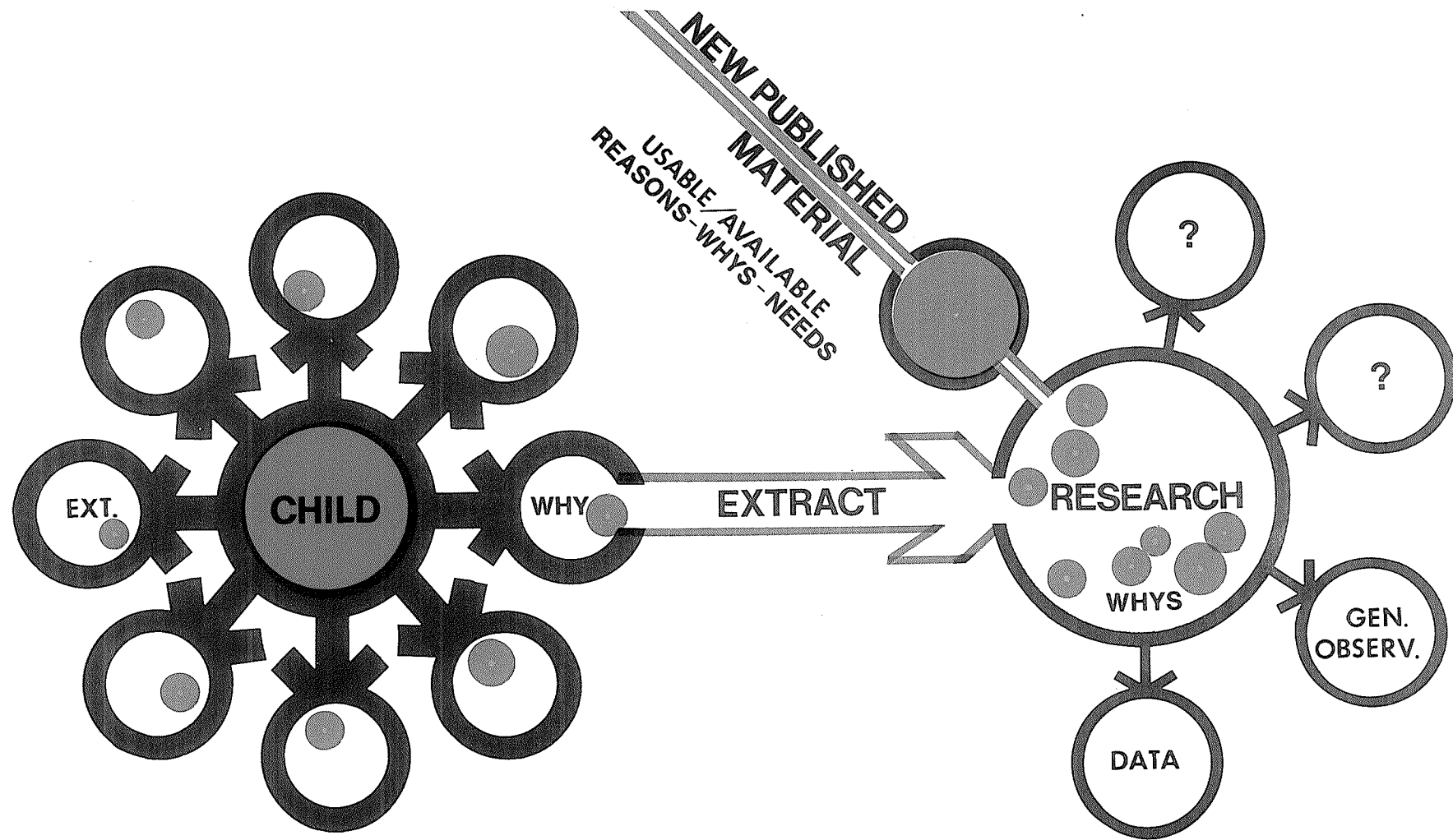
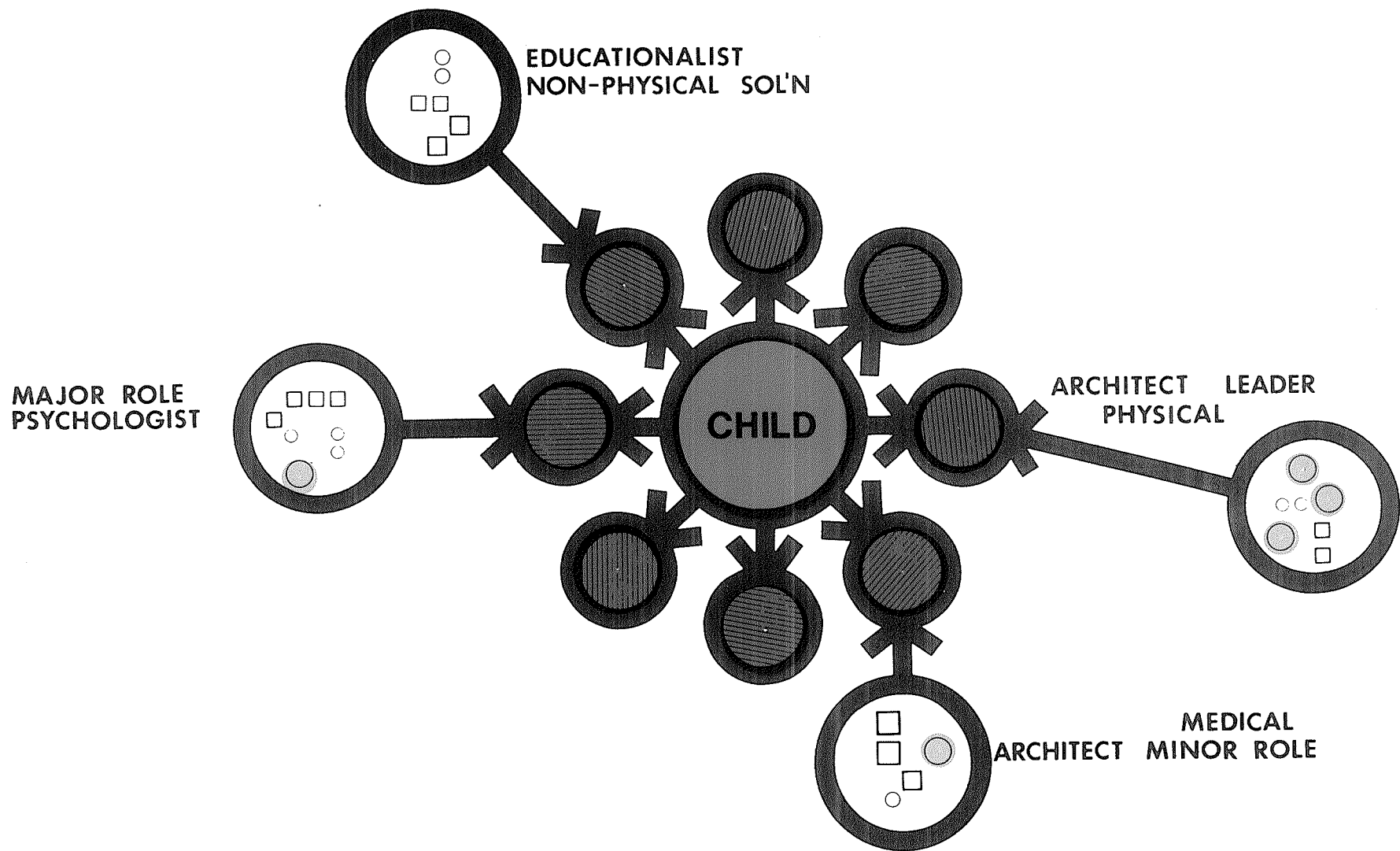


Fig. 56



NEW INFORMATION



POSSIBLE TEAMS

Whether a graduate from any field of knowledge chooses to become a researcher, teacher or practitioner in his field, he must gain not only specialized abilities from his educational process, but a general understanding of the interdependencies of the varying disciplines. The importance of team co-operation in translating the new kinds of information into good solutions should be stressed. "The difference between the disciplines is an artificial one, caused by differences in scale, materials, and techniques not in basic conceptions."¹ The real concern is with an interaction between human functions and the actual physical or non-physical solutions which are required. Suppositional examples of child needs or reasons for behaviour in specific instances are introduced into the proposed system. These theoretical postulates not only illustrate what kind of information is necessary but how such information can be developed and interpreted into meaningful design.

THEORETICAL POSTULATE - 1

Instead of specifying that a child up to five years old should be provided with a playpark within a maximum radial distance of 130 yards from his dwelling, a postulative example of usable information concerned with the situation of spaces for children of this developmental group may read as follows:

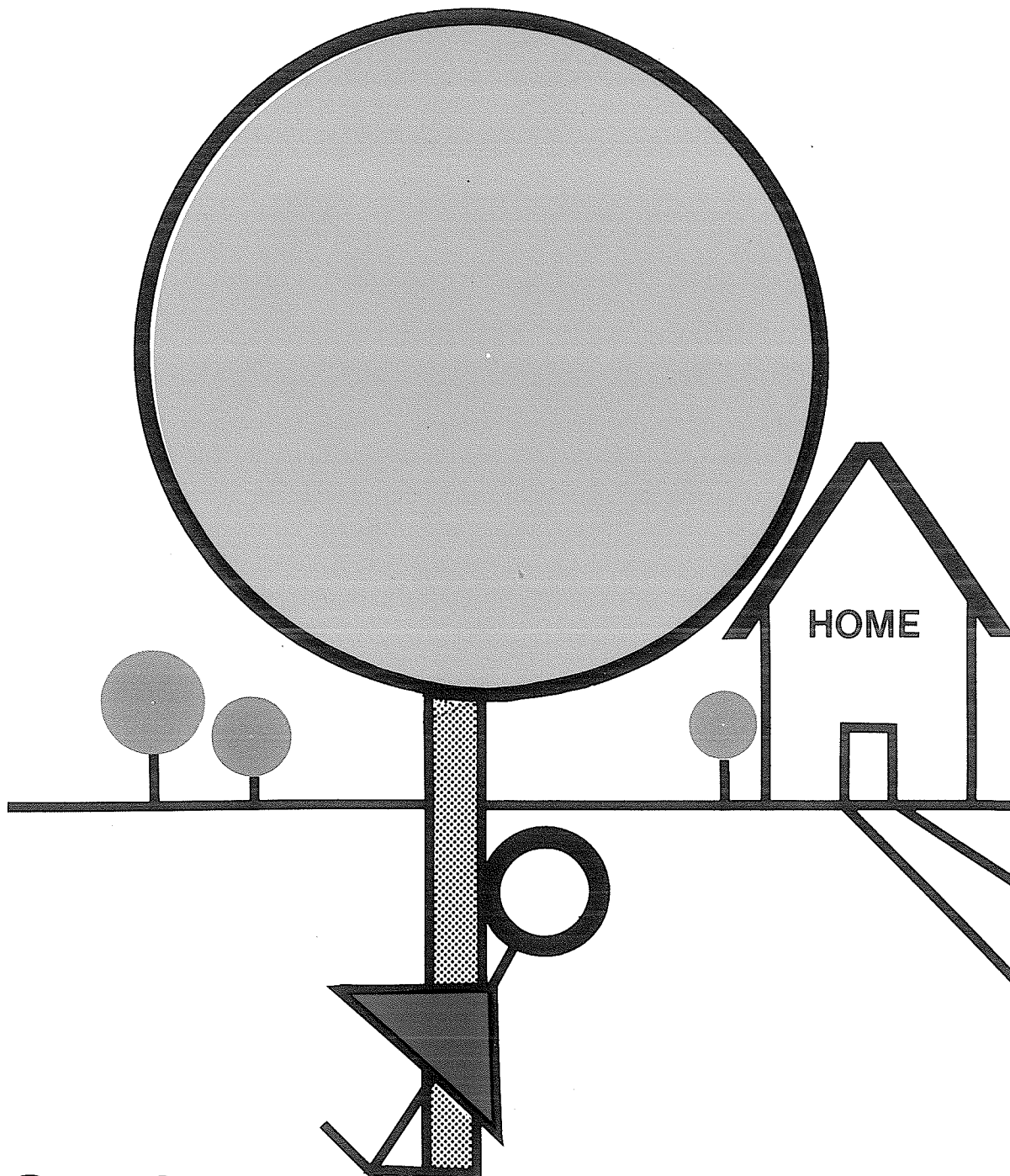
Most children will become independent enough to play alone or with playmates away from adult supervision. The opportunity for such independence and socialization is necessary for their development. However, children in such a formative stage exhibit a definite psychological

¹Michael Kuhn, "Researches in Human Space", paper presented at the First World Congress of Engineers and Architects in Israel, 1967, Ekistics, Vol.32, No.191, October, 1971, p.395.

need to clearly see or easily recognize their 'home' (see figure 61) when playing in an environment which lacks the presence of an adult or some person symbolizing security. (The reasons why children have such a need would be a vital part of this information if it were not postulative.) For example, children at this stage in a development become involved in imaginative play of imitating and pretending. As their process has not fully developed, the child tends to link separate ideas into a confusing whole. As a result, when the child returns to reality from this involvement or actually completes his play experience, it is particularly difficult for him to adjust if no human or identifiable physical symbol is available to give him an immediate sense of security. The resulting panic or fear of being lost can cause an actual dislike or fear of play, resulting in a retardation in full development. Just as children who suffer from bad dreams fear going to sleep at night or rely on a night light for security, so children when playing during the day need some symbol of security or a reference point with which they can readily identify. (In all probability, such kinds of information would be developed to include kinds and choices of play spaces, and the relationship of such spaces to other activities.)

This theoretical supposition could be absolutely wrong. Children may have less need for security than the example implies. Actually, they may have a natural ability to learn the intricate city transit system, if only they could reach the ticket booth or understand the signage.

Although the preceding is only a theoretical postulate, it represents the kind of information which designers could use and translate into a variety of solutions. Theoretical solutions to this postulate wherein the child must be able to easily identify his home place could



SPECULATION :

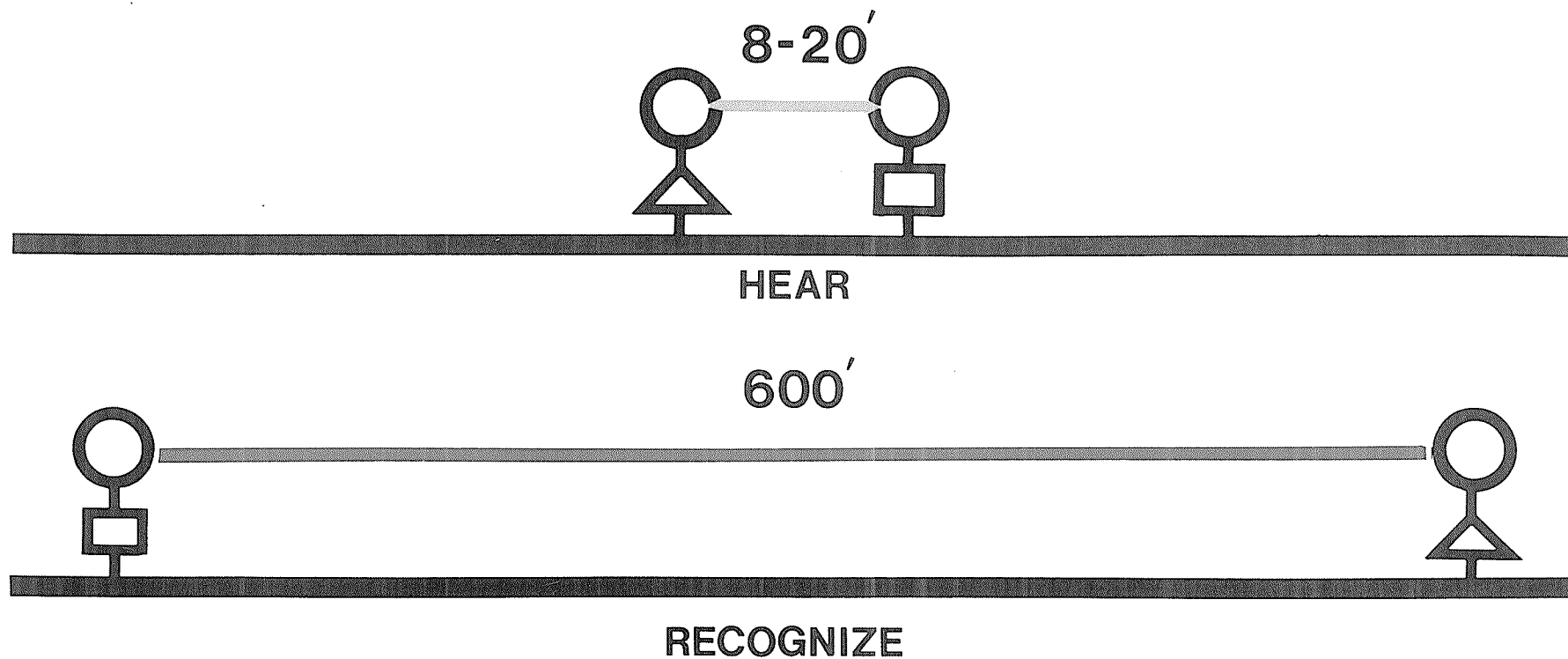
EASILY IDENTIFY HOME

be as follows.

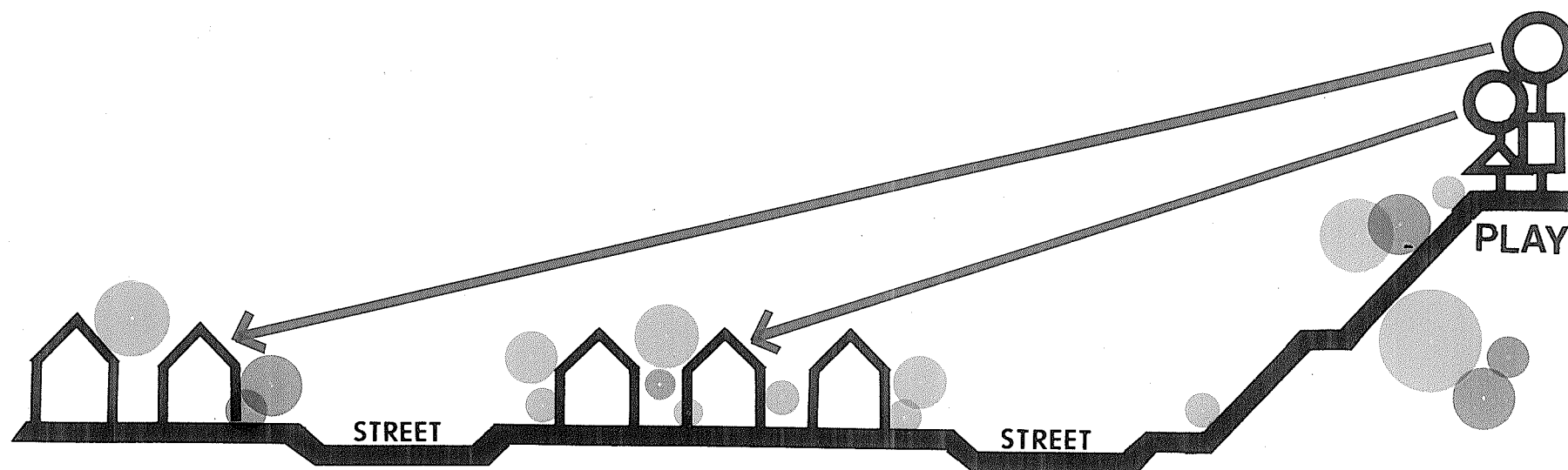
Doxiadis indicates that one can recognize another person up to a distance of 600 feet (see figure 62). Perhaps, because of the size of the child's house or depending upon its characteristic appearance, a child can venture much further from his home and still recognize it. If automobile traffic is an intervening problem, a new route to the play area or provision of a bridge over an intersection may allow the area to still be further away from the child's home than the existing data has specified. A playground on a hill may have a good view of the child's home and yet be very far away (see figure 63). The orientation points along the route between house and park might be very important, particularly if the park was a great distance away from the child's home and the home was only identifiable from the park, as in the example of the park on a hill.

The problem for the child in distinguishing his particular dwelling unit when living in a high-rise tower is much different (see figure 64). The apartment tower itself could be identified much more easily and from a greater distance than a single family dwelling, except that the repetition of the apartment cells obscures each identifiable unit. (A coloured flag or graphic in a window perhaps even on the balcony may help a child recognize his home place.)

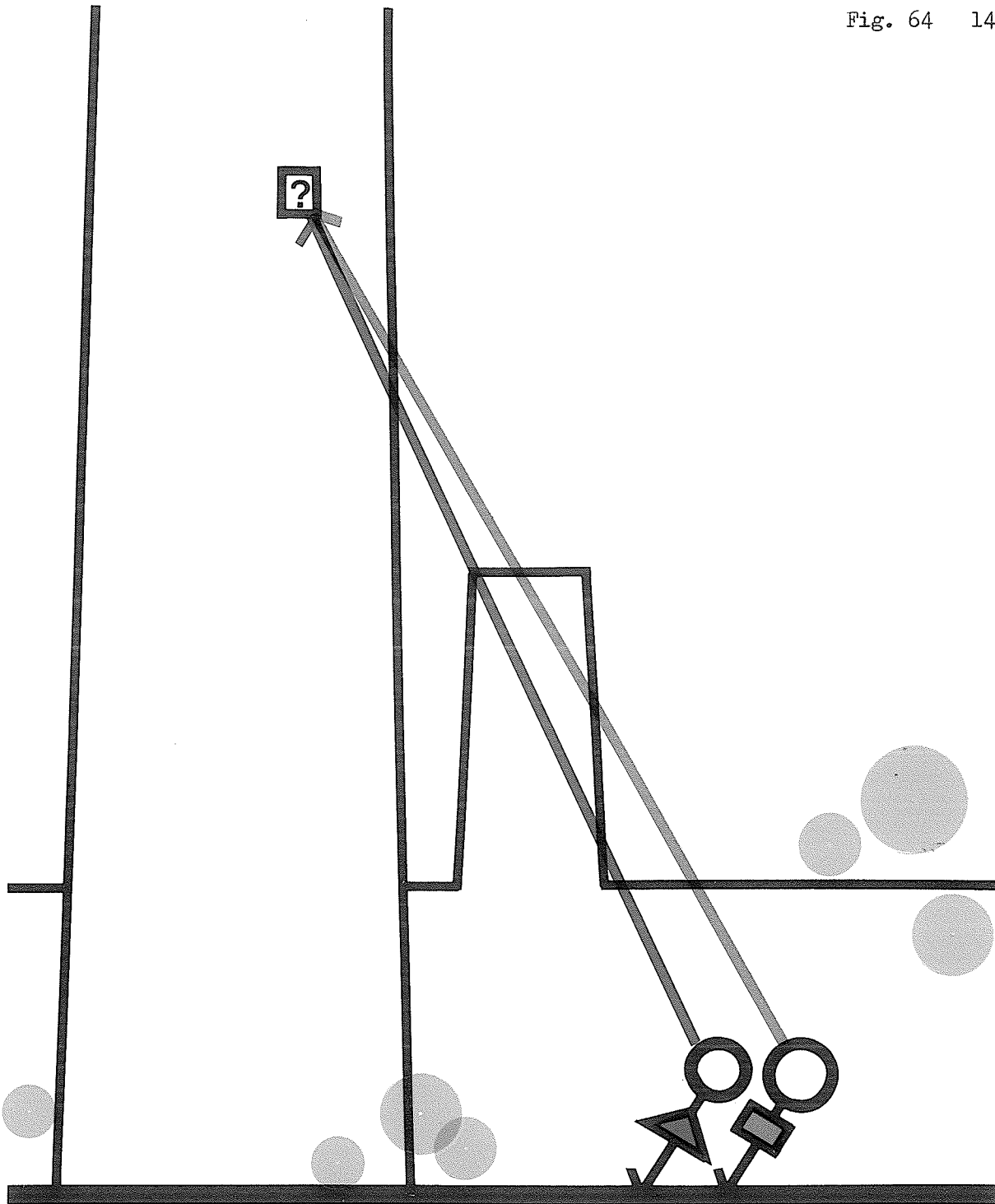
Team members on such a problem could vary. Perhaps only a few members would begin the project, calling in consultants as the design progresses (see figure 60). The resulting 'solutions' geared to the child's needs would in turn provide more feedback for the researchers to diagnose and reapply to the body of knowledge used by the design teams or individuals, whatever the case may be.



VISUAL & AUDIO DISTANCES



HOW FAR & STILL IDENTIFY ?



WHICH ONE ?

THEORETICAL POSTULATE - 2

This example concerns observations of the activities of children who live in high-rise towers. As mentioned earlier, the designer needs to know why children who live higher up in a building do not play outside as much or as often as those living lower. A speculative answer to this question that is an experimental example for the proposed system would be similar to that of example number one concerning apartment dwellings. A postulate would be that the physical distance from the child's dwelling unit to grade directly affects his desire to leave the building. The higher up he lives the more difficult it is for him to identify his 'cell' from wherever he may be outside (see figure 64). The problem decreases as the child becomes more independent and mobile relying more on his intellect and perception. (Since no studies are apparent wherein people on the lower floors of apartment buildings have been interchanged with people on the upper floors to see if the resulting activities of outside play was function of the children, or of the floor levels, this ascertainment, although merely postulative, may be questioned strongly.)

Again a possible solution may include easily perceivable symbols which may successfully identify the exterior of the apartment unit for the child. New buildings may introduce more activity levels or pedestrian streets within the building, actually eliminating the need for the child to travel to grade level. The perceptual distance could be shortened by visual variations within the buildings as well. The monotony of the horizontal corridors and the elevator ride may increase the feeling of physical distance. The elevator should perhaps become an exciting experience rather than an isolated ride. (As previously mentioned however,

children seem intrigued with elevators, treating them almost like experimental toys.)

THEORETICAL POSTULATE - 3

Moshe Safdie developed criteria, as yet unsubstantiated, but in a form that the new or repackaged information might possibly take. Although he realized that it would be impossible to document all the requirements for an Environmental Bill of Rights, and that the requirements would differ from culture to culture and that many aspects of the requirements would require continual change, Safdie drafted his assumptions, many of which indicate the inadequacy of the apartment block. Several of these criteria with his comments are quoted below. They are not proven with specific data, but are merely assumptions from an analysis of human requirements. This type of criteria, if established on the basis of specific evidence would enable the architect to produce sound physical conclusions.

Consequently, postulative evidence has been interjected into his criteria to indicate a possible format for 'usable' information. The conditions, criteria, and comments are quoted from "Beyond Habitat". With or without the theoretical and postulative evidence which has been added these conditions are not necessarily accepted as qualified information.

Outdoor
Space

A direct route from the child to his mother or other security figure greatly facilitates the necessary development of the child's ability to play unsupervised. Children naturally become independent outside the home if their first play area is an easily accessible extension of the interior unit in which they live.

The extension of the home should provide both the opportunity for varying active and passive experiences on the outside and continuous visual experiences from the inside for the release of tensions and emotions which inevitably build up within all members of a social unit, living in one household. If such conditions are not provided, neuroses in both children and adults may occur. (Further evidence concerning why children require a security route and why tensions and emotions build up, would be necessary to complete this evidence if it were not speculative.)

Every family or individual must be provided with an outdoor space equal to or greater than its' interior living space. This is essential to proper functioning of the family. The nature of the spaces themselves would vary from climate to climate.

The outdoor space must be continuous with the indoor spaces for family functions.

This criterion makes unacceptable 99% of all apartments constructed for family living, and most of what would be classified as garden apartments or maisonnettes. If satisfied within a high density environment, it would invariably result in new housing forms.

Houses or row houses where courtyards are independent of the living space are not satisfactory.

³M.Safdie, Beyond Habitat, p.158.

Children

The poor progress of underprivileged children in a school was greatly upgraded when mirrors, which the children had never seen before, were introduced in the classroom. The opportunity of realizing their own image increased their sense of identity and gave them a feeling of importance.

Children not only need a mirror to help them learn about themselves but a definite place of their own however small, where they can go to be alone, to think about old or new experiences or to formulate their own ideas.

Children require the security of knowing that a particular adult is readily available and yet need the security of having their own private place, complete with their own toys or other belongings. This provision allows the child to develop within himself a definite feeling of personal worth and identification.

Every child should have a private sleeping space (a North American criterion; other cultures may be different). Children should have work and play space of sufficient size for these functions.

Separate bedrooms for children are by necessity too small for play and work. Convertible space must give privacy for sleeping but open up for activities requiring more space during the day.

THEORETICAL POSTULATE - 4General Observations at Roden Junior Public School

The following postulate is based upon actual observations at Roden Junior Public School and from examples of data extracted from the preceding chapter one, which have been assumed useful for the purpose of this postulate.

The neighbourhood primary school, serving an area with a population of five to seven thousand people, generates a sphere of influence for most children in the city (or suburb). Within this geographical area, convenient routes from home to school and recreational spaces are usually provided. The results of observations of these areas indicates that young children have a mobility radius of less than one-half mile, within which most of their childhood activities occur. (see supra, p.59). However, the planning measures seemingly bias what social and physical experiences the child will have, other than those within his immediate social unit, (home environment).

There are many traditional schools with typical closed classrooms in Toronto, but currently, open-planned schools are being constructed throughout the city. Such an environment has been introduced into Roden School, for junior grades. Since Roden is the test school for the Studies of Educational Facilities, it has become a major influence on the educational system in Toronto, setting an example which many schools are following closely. The facilities at Roden are considered to be the most progressive by the Metropolitan Toronto School Board.

Although only a few storeys high, the concrete facade of the school dominates the neighbourhood characterized by low-rise single

family dwellings. In the playground area of the school, sunken landscape areas provide settings for games or classes when the weather is warmer. The paved portion of the schoolyard, used extensively during the morning recess, is the only area on the site surrounded by a high wire fence.

Unlike many public schools, the entrance doors to Roden are opened well before classes commence, allowing children to enter early if they wish. (Perhaps they know how the monkeys feel!) Students are often seen wandering through the carpeted activity areas or to the library on the main floor, unaccompanied by teachers. A definite feeling of freedom and relaxation pervades the interior of the building. Observers are generally permitted not only to watch and photograph the children but to take part in the actual learning sessions of many groups.

The school provides enough space for over one thousand children from Junior and Senior kindergarten, up to grade six. The kindergarten complex is situated on ground level with entrances separate from the main school, linking to outdoor play spaces. These young children only spend half a day in school, either morning or afternoon. They have little to do with the children in the rest of the school. The second and third floors are each divided into two open activity areas, separated by enclosed seminar and staff rooms and surrounded by small class stations. The larger activity areas accommodate children from the small teaching stations when they are excused from a specific lesson with their teacher.

Most of the children seemed eager to discuss what they were doing and readily asked questions if they needed help. Conversation flowed freely among classmates when the teacher wasn't conducting a lesson,

although interaction between neighbouring classes rarely occurred unless the children met in the activity space. Traditional teaching situations exist in the specific class stations, although not in the common areas (see figures 66 and 67).

A movie, called "A Place to ... ?"¹, presenting the installation of the interior components of a SEF system indicated the apparent flexibility of the space, the fact that the design does have the ability to accommodate change easily and economically. The interior equipment includes operable and demountable partitions, portable furniture, children's tote drawers, and modular, movable storage equipment. The plans of the present arrangement of spaces are shown in figures 65, 66, 67.

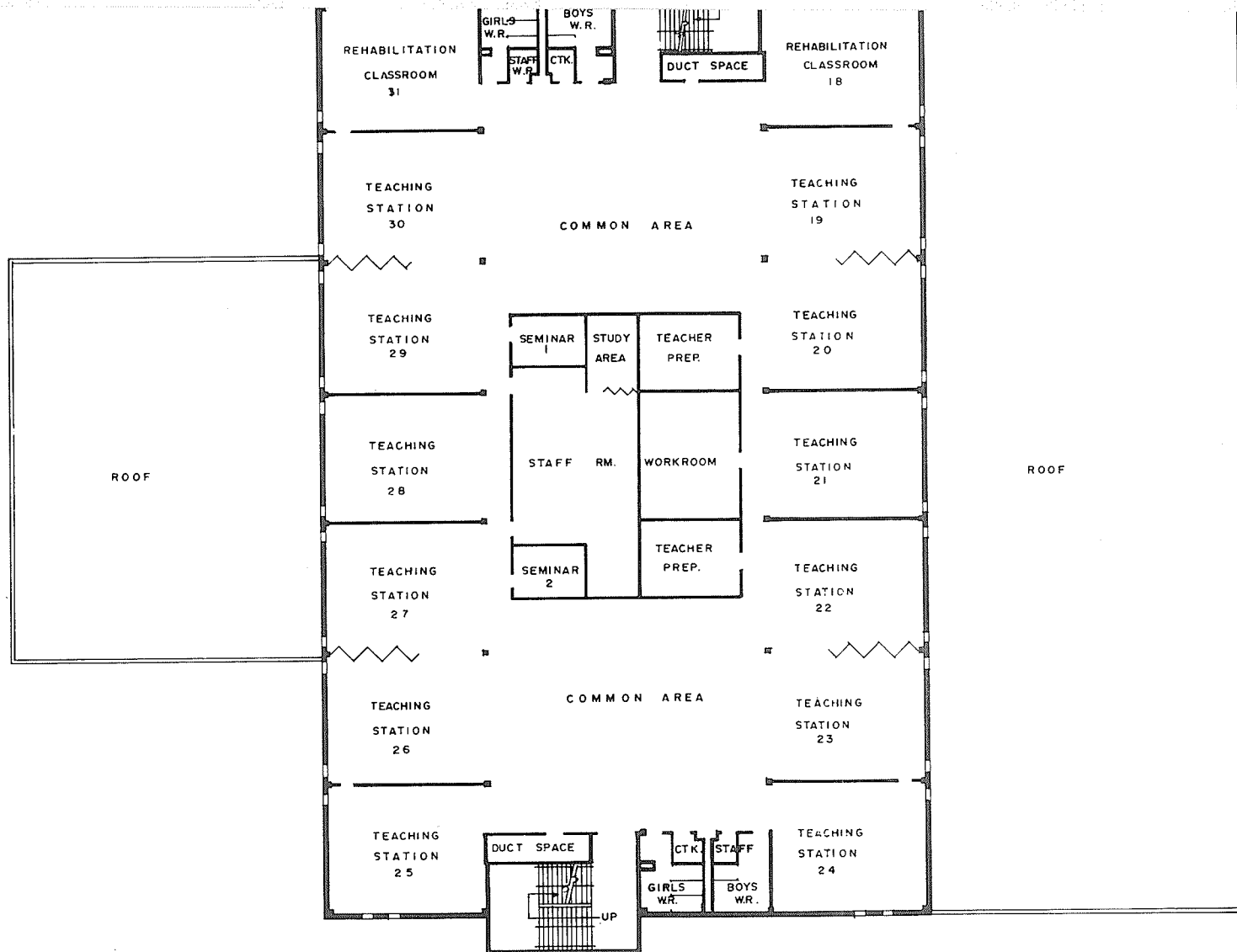
Children up to grade four are provided with sandboxes in the common areas. The enjoyment exhibited by the children during such play confirmed the observations previously acknowledged concerning play equipment, although the reason for such behaviour is still not determined.

The centre spaces for grades four to six are equipped with many activity stations, some with record players and head sets, others with art materials for making puppets or drawings and such. The children occupied themselves without constant adult supervision in a variety of interests. Physical activity or movement is usually considered 'constructive'. Since the children were almost always involved in some project or were receiving instruction, the observations did not reveal whether a child would be allowed to, for example, sit motionless, stare

¹Studies of Educational Facilities, movie produced by Westminster Films, Toronto.

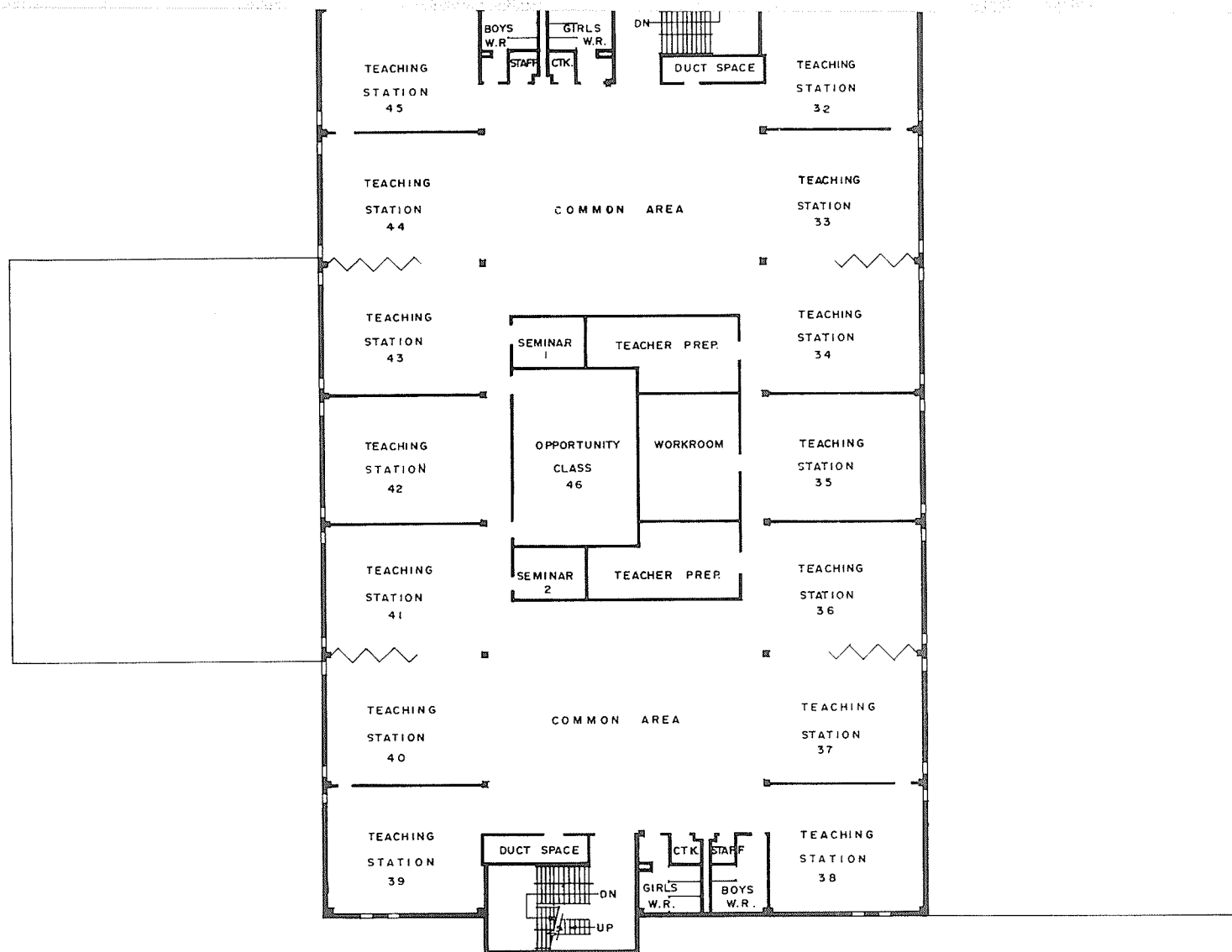


SCALE 0 3 6 12 24 ft



SECOND FLOOR PLAN
RODEN PUBLIC SCHOOL -JR.

SCALE 0 3 6 12 24 ft.



THIRD FLOOR PLAN
RODEN PUBLIC SCHOOL - JR.

SCALE 0 3 6 12 24ft.

out a window, and think, and still be considered occupied in a 'constructive' manner.

When questioned about 'team teaching' the principal of the school replied that he hoped such a system would evolve, particularly on account of the open-planning within the school, generally considered conducive to people inter-action and participation. However, almost invariably, the individual teachers questioned about such procedures in teaching, vocalize a dislike for the idea. Most felt that they had enough difficulties keeping up with class preparations and existing curriculums without having to co-ordinate every decision with other staff members, a prerequisite for team methods. Educational Facilities Laboratories studies claims that team teaching should lessen the existing pressures and workload of the staff. The students would progress at their own speed, relating to many adults and other children of various ages.² Unfortunately, when ideas such as 'team teaching' are initiated or suggested, no apparent educational process is available for the teachers who are suddenly called upon, in many situations, to revise their whole attitude concerning their career. The students are expected to adapt readily to the particular curriculum prepared for them. Perhaps the curriculum should adapt to the child instead of vice versa.

Roden provides a few closed-classrooms for children from many areas in the city of Toronto, who have specific problems such as non-adaptive behaviour or general poor progress in the given curriculum. Specially trained teachers work with these children until they can be integrated into a regular system. (The question of whether the

²Educational Facilities Laboratories, Schools Without Walls, booklet.

curriculum should adapt to the child instead of the existing situation may again be reviewed). The school counsellor is consulted when difficulties arise in either the regular or behavioural classes. Depending upon the situation, the child psychologist may be informed. He often attempts to speak with the parents as well as the child having difficulty. Many of the teachers indicated that children having problems coping with the school curriculum almost invariably suffer difficulties in their home. One such child, who spent much time under the patient guidance of the psychologist and his teacher, came from an extremely insecure family situation. Whatever progress he made during school time seemed to be defeated by the continuing conflicts at home, which were causing definite retardation in his development. Consequently, if the parents will not accept guidance in an effort to help their child, the situation seems hopeless.

Conflicting opinion concerning the educational facilities are evident in the following articles (see figures 68 and 69).

RODEN STONE POINTS WAY TO A SCHOOL REVOLUTION

A cornerstone that should prove a milestone in school building was laid yesterday by Metro educators.

Toronto Board of Education chairman Alex Thompson laid the stone for a new Roden Public School, the first school to be built to the revolutionary specifications of Metro School Board's Study of Educational Facilities.

"Visitors from all over the world will be coming to see this school," Mr. Thompson predicted.

Toronto school building comptroller Harry Facey placed a few items in the cornerstone box, including the day's newspapers, accounts of the July 21 moon landing, and relics from the cornerstone of the original Roden school, which stands beside the new one, was built in 1908, and has the distinction of being at the top of the Metro School Board's obsolescence list.

TEST

Roden is the test school for SEF, although 10 others are under construction and 30 have been planned.

Started in mid-August, it will be finished the end of February, a total of 6½ months for construction. A school usually takes 18 months.

At \$19.10 per square foot, it is slightly under the present Metro ceiling cost of \$20 for elementary schools. But it will provide 12 percent more space per pupil than traditional schools and a number of extras other elementary schools don't have. SEF officials estimate the same school, built by traditional methods, would have cost \$26 a foot.

This is a sore point with North York Board chairman Bruce Bone who thinks

Metro might have done better to build smaller schools and save money.

"We're getting larger schools for the same price," Mr. Bone said yesterday. "No one has proved the old schools were too small."

Metro School Board chairman Barry Lowes said the board could have pocketed the saving but decided instead to go ahead with the enlarged space recommended in the SEF study on elementary schools.

SPACE VERSUS MONEY

"In future we may say we don't need the extra space and decide to save the money."

Here are some of the features in the new Roden, which will be three storeys high and fully air-conditioned for year-round use: A music room, a large library, shower rooms, teacher studies, tutorial space, and seminar rooms. It will provide space for 1,060 pupils.

It won't provide much sunlight although there are a few narrow windows in the concrete exterior, which looks like a fortress.

"If there were many more windows there would be much more heat from the sun and that would make the air-conditioning much more expensive," says Roderick Robbie, SEF technical director.

Mr. Robbie says all schools have to use artificial light continuously anyway, and Roden has been carefully designed to prevent shadows and glare.

All SEF schools will have the same grim exterior because they are made of standard parts. Construction is divided into 10 sub-

systems — structure, atmosphere control, interior space division, vertical skin, plumbing, electric-electronic work, casework and furniture, roofing, interior, finishing, and lighting.

Parts are mass-produced which is the secret of SEF's cheapness. Bidders on the first contract were guaranteed up to 2,000,000 square feet of building.

Practically everything is moveable — the lighting, air-conditioning, interior walls, and the casework — cupboards and shelves.

Mr. Robbie says this will result in much saving in future when renovations are needed, for the school won't have to be torn apart to replace the lighting system or air-conditioning.

RESIGNED

Mr. Robbie leaves his job in two weeks to return to private practice and will be succeeded by Peter Turion.

"I was determined to see one school well on the way before I left," Mr. Robbie says.

Pupils in the old Roden may move into the new school just before the end of the school year. Then the old one will be knocked down and the land made into a playing field.

But before that happens, friends of the old school will say goodbye with a party Jan. 31.

Mrs. Leulla McGibbon of Gerrard St. E., one of a homecoming committee of three, hopes 3,000 former students, staff, and others connected with Roden will attend the event.

She would be interested in any souvenir such as a trophy or photograph, which might be displayed that day.

Open school 'piece of garbage' father tells Toronto trustees

A Toronto man has pulled three of his children out of the city's most modern school, Roden Public School, on Hiawatha Rd., because "all they are doing is going backwards."

David Phillips, a Highfield Rd. plumber, gave Toronto school trustees a 10-minute tongue-lashing last night for operating open-plan schools.

He said he had his children transferred to Duke of Connaught Public School.

"It's a regular school; they have proper report cards, proper classrooms and punishment if you do something wrong," he said.

The school opened in September, 1970, with broadloom, no interior walls, and air conditioning. It was called a "piece of garbage" by Phillips.

He complained that one of his children was allowed to sit under a table for two

days, that children shouted from one end of the school to the other, and that they were being taught politics by their teachers.

"I'm here to find out what in the hell you're doing to

my kids," he told the trustees.

He complained about report cards that no longer include marks, and said many other parents want to take their children out of Roden.

From information regarding the behavioural problems of students at Roden Junior Public school and from information derived from the experiments of Dr. Burton White in his Pre-School Harvard Project (see figure 6) this postulate assumes that every child should have adequate and compulsory 'educational check-ups' from the age of ten months to one and one-half years. Parents, whose children fail to indicate a normal level of achievement would be subjected to training, such that their child would have the opportunity for normal, positive development. By the age of three, the fate of a child, as discussed earlier (see supra, p.11) is almost fixed. As a result, damage done to a child in the first, most critical years, is almost irreversible. Teachers in public schools may be able to supply the under-developed child with specific pieces of knowledge which will help him deal with the rest of society once he leaves school. The teacher or counsellor may be able to help correct any physical problems the child may have by sending him to a doctor or dentist. However, the teacher has difficulty coping with social, psychological problems which have been part of the child's life, long before the teacher has had a chance to even notice. Also, the education of the teacher today does not make him or her an adequate assessor of such situations, even though the behaviour of a child indicates a definite problem exists.

Under this compulsory educational check-up system, children would be assessed along with the parents. If consistent training for mothers and their children does not have the required effect on account of the inability of the mother (or mother and father), then the child should be removed from such a defeating environment and immediately placed in

one which would offer the necessary 'ingredients' for a positive level of development.

The existing school, which is usually built within each neighbourhood, could become the centre for such educational check-ups and training programs.

Postulate B

The existing behavioural problems of children are often noticed today by teachers in public schools. Theoretically, if postulate 'A' came into effect, most of these problems would be minimized. However, the conditions still remain, that (1), there are children who are past the stage of early educational training, initiated for the purposes of aiding positive development in the child who is born into psychologically damaging circumstances, and (2) children are not all typical, as discussed in Conclusions. Their developmental patterns, whether positive or negative, according to the norms of our society, differ substantially. Consequently, no one learning curriculum can comply with the needs, abilities or desires of every child. The choice for a wide variety of opportunities must prevail.

The child in the first situation may require an alternative environment away from his home and the existing sphere of influence generated by the neighbourhood school. An opportunity to expend his energies and gain a sense of confidence in a sport such as skiing or tennis may be far more valuable than learning to multiply, at least at this stage in his life cycle (see supra p.93).

Children from poverty environments often live in a crowded, over-complex home environment wherein they have no special place to call their

own. They need a space, which could be provided by the school, where they can develop (perhaps build up) their own area.

The school would become a centre where children check-in, take counsel on their progress and learn about the available activities conducive to promoting their abilities and interests, in accordance with their developmental needs at that time. Teachers must be on hand when the child seeks assistance and be prepared to introduce learning sessions in subjects requiring actual traditional teaching procedures.

Instead of being confined within an institutional set-up, the child is 'liberated', able to make use of the whole city for his educational needs. The library in the school may even be unnecessary as the city has many public branches. As illustrated in figure 38, the city would become the schoolhouse, the existing school would become a reference point. Counselling and actual educational services would be available. Each child would still be accounted for constantly (perhaps by electronic arrangement) but the child would not conform to a system. A system, always flexible, would conform to his needs, his developmental pattern.

The indications on the development of the city as a place where a child can orient himself and find himself welcomed in a variety of situations, such as business offices, industry and so on (see supra, p.94) are great.

Parr intuitively believes that urban children are suffering today from a lack of diversity in their environment (see supra, p.111). The opportunities of the city are not an integral part of their daily orbits. The segregation of children to restrictive spheres of activity

seems unrealistic when compared with the child's experience through the media today, although this restricting orbit may be the ideal environment for children from some circumstances.

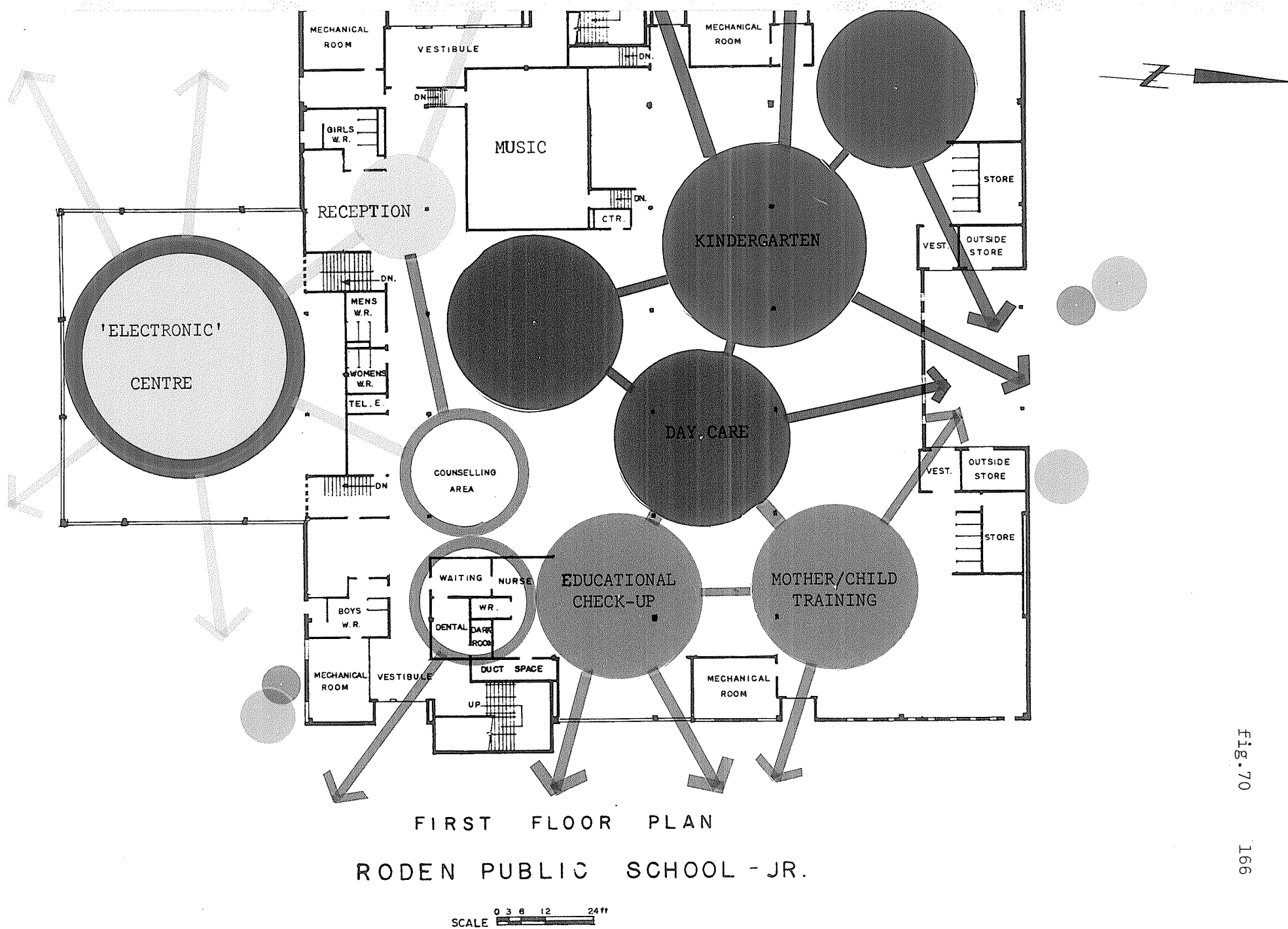
The child who comes from a background lacking intellectual or perceptual stimuli, has a particular need for exposure to other people of all ages, who can supplement his developmental deficiencies. Similarly, all children, regardless of background, need exposure to many identities in order (as Parr believes) to enhance their 'social' education, their ability to get along with other people. The child's immediate neighbourhood or social orbit (see figure 46), offers little variety or choice in social stimuli. The children at Roden School, when questioned, indicated that 'downtown' was a place they rarely visited. Seldom did they take the street car. This revelation concerning their mobility radius is further exemplified by the fact that when asked to draw their favourite place in the 'city', they inevitably depicted their 'house' or 'neighbourhood street' where they played.

The need for an overlap or inter-action of social orbits can be achieved in two ways. The first is to allow a portion of the existing school or school site for commercial purposes. Joint ventures with schools have already been considered (see figure 35). The other method is to develop the city as opportunities for children, such that they may comprehend the workings of the adult business world in which they will soon play a major role. Perhaps when children are 'invited' into such environments they will add a little 'life' to the industrial mechanisms and in turn gain an early insight into situations which they find intriguing and others they may wish to change.

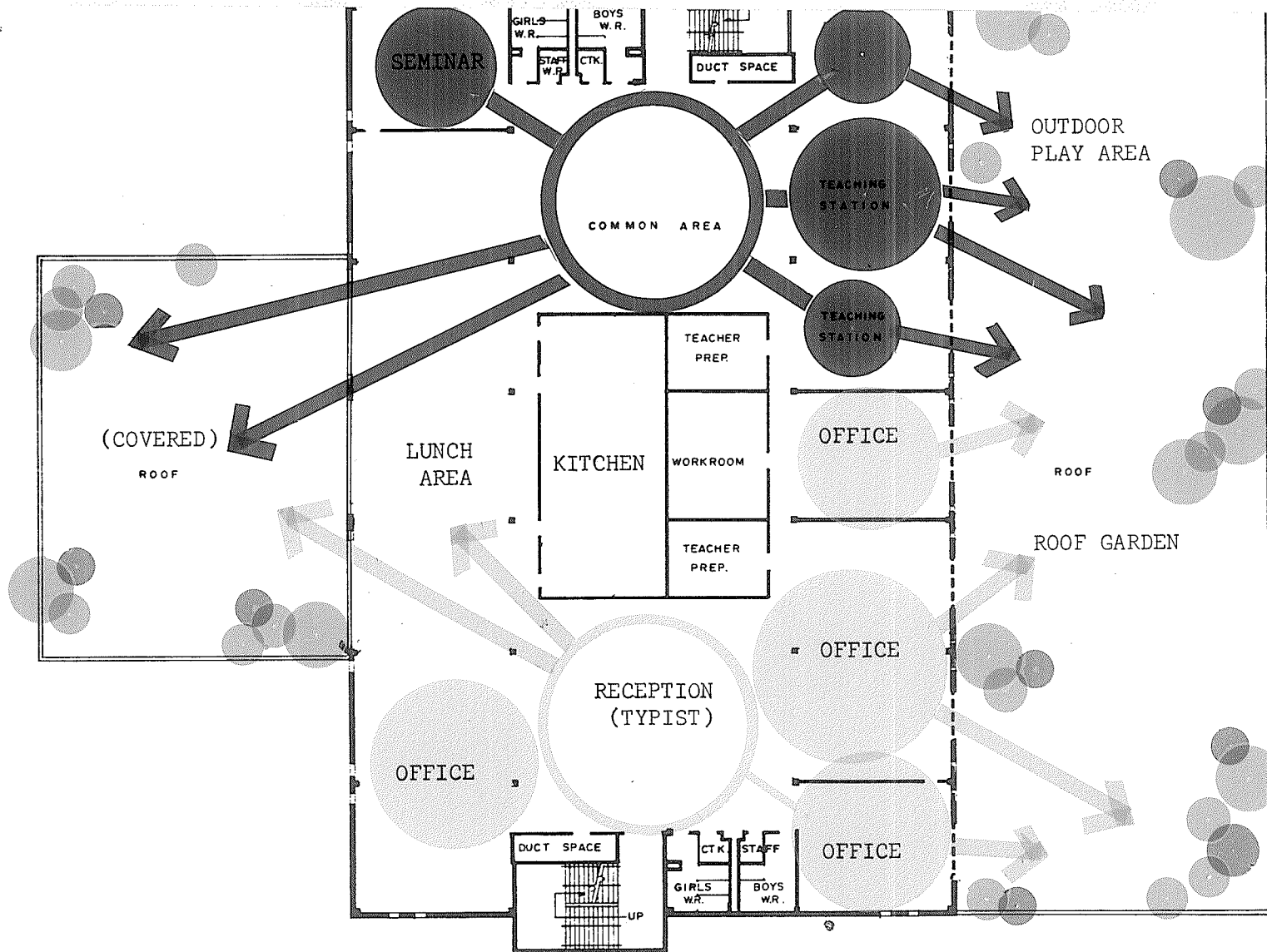
This process does not eliminate the necessity for some specific training for children, it merely makes it possible for the training or the specific knowledge to be designed in new packages or offered at the most beneficial time in the child's developing process.

Hopefully, this partial freedom (the child is constantly evaluated and counselled at his 'centre') will allow each child to relate his experiences and develop a feeling of self-identity, eliminating the existing procedure of merely memorizing or assimilating facts which are specified as 'knowledge'.

The following figures 68, 69, 70, are plans of Roden School as previously presented, but with basic changes made in order to illustrate what specific areas the new "centre" would develop, conducive to the requirements of postulate 4, 'A' and 'B'.

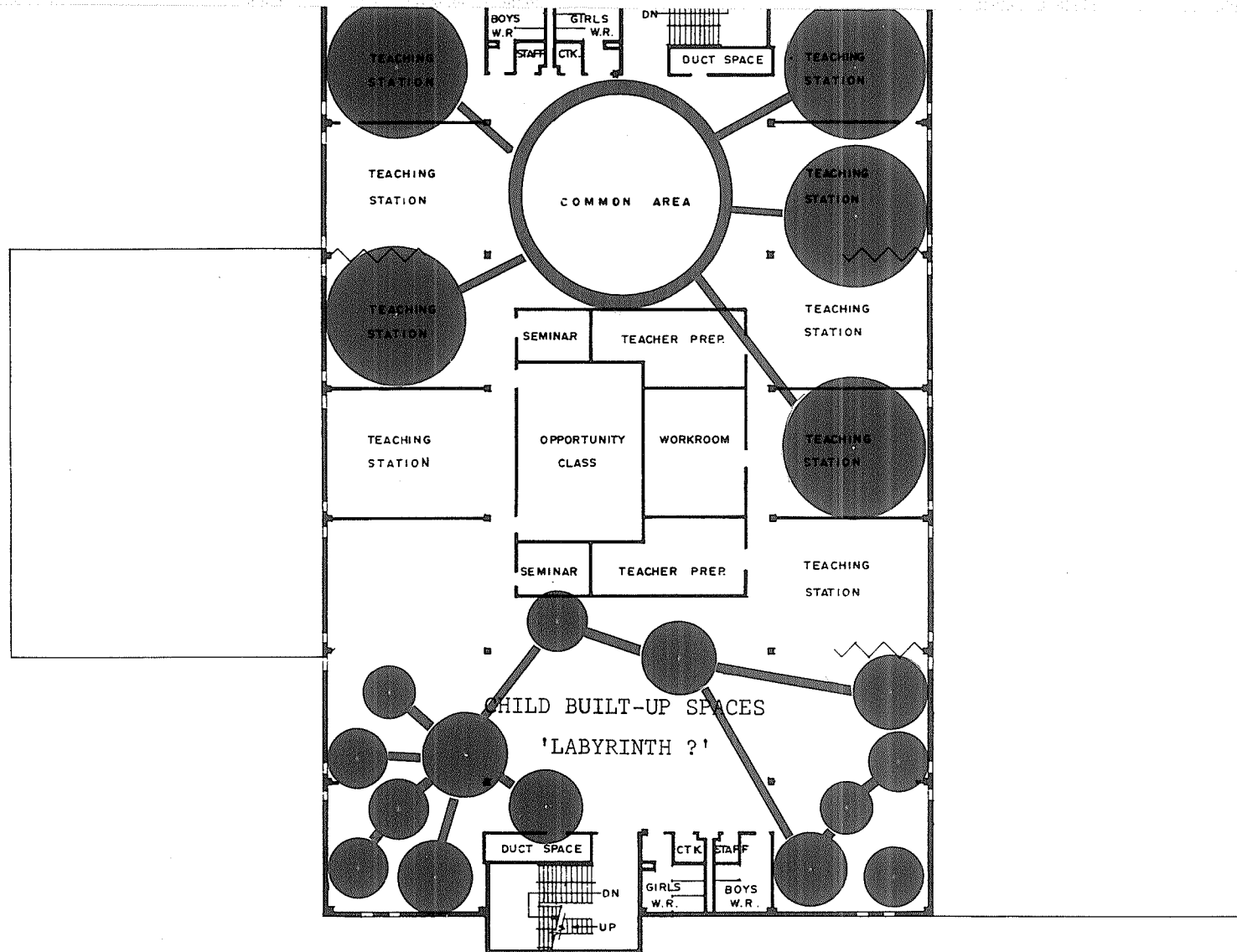


FIRST FLOOR PLAN
 RODEN PUBLIC SCHOOL - JR.



SECOND FLOOR PLAN
RODEN PUBLIC SCHOOL -JR.

SCALE 0 3 6 12 24 ft.



THIRD FLOOR PLAN
RODEN PUBLIC SCHOOL - JR.

SCALE 0 3 6 12 24ft.

CHAPTER FOUR

S U M M A R Y

After extensive research into many areas of influences on the development of the child in the urban environment, much of which has been presented in this thesis, conclusions were drawn. The resulting data was indeed based upon observations of existing phenomena which generally excludes the constraints upon, or the context of the information given, and almost invariably excludes the actual reasons behind the behaviour cited. Examples of such data, choosen at random from the preceding material (Chapter One) were discussed, such that the specific kind of information which designers require was ascertained.

Consequently, the hypothesis, based upon the assumption that a new kind or a new form of information would have to be generated for architects (all physical designers), was successfully confirmed.

As suspected however, the information required was not available in empirical studies, relevant source materials, or from specialists in many fields of study. As a result, the proposed theoretical system for obtaining such information was developed. The system illustrates what kinds of information the designer requires from a researcher, where the information should generally be obtained, and how it can be made available for designers in order to become an integral part of the

design process. The recommendations of this system and the resulting implications have been exemplified by means of theoretical postulates which illustrate what kinds of information could be applied in order to arrive at meaningful solutions for the development of the child in the city.

Piaget has been involved in the study of epistemology, a concern with the theory or nature of knowledge which asks questions such as : "Is genuine knowledge indeed attainable? If so, what are the origins of such knowledge? Do we acquire direct experience with the external world? What are the relations that exist between the subjective and the objective components of the knowledge situation; that is, between the person and his environment?"¹

Piaget feels that a scientific approach could be utilized to reach a definitive understanding of the issues which he felt are inadequately expressed through purely philosophical methods. The issues should be treated more subjectively. The philosopher, dealing subjectively within a broad general field of knowledge, differs from the scientist who limits his scope to restrictive and observable realities, thus reducing the influence of subjectivity. Since many problems concerned with the theory of knowledge relate directly to human behaviour, Piaget feels that a new approach, involved directly with the psychological study of the child, employing scientific techniques is required.² Consequently, the proposed system (which includes recommendations that

¹H. Ginsberg and S. Oppen, Piaget's Theory of Intellectual Development, p.208.

²Ibid. pp.208-09.

techniques be devised for extracting the required information from the extensions of the child) is necessary not only for the architect, but as just reviewed, also for the psychologist.

If suitable answers to the questions raised, were available, whether they pertained to the subject of this thesis or otherwise, they could be comfortably incorporated in such approaches as those taken by architects Christopher Alexander and his 'disciple' Ron Walkey. Their resulting 'pattern languages' would be based upon actual fact rather than upon refutable and subjective hypotheses. These hypotheses attempt to ask the right questions concerning 'why' certain phenomena occurs but are unable to employ other than intuitive or empirical studies based upon observations of existing phenomena, which this thesis has determined are inadequate.

The implications of such information requirements are slowly being realized in education. The University of Utah has initiated courses in Social and Behavioral Sciences under Dr. Calvin W. Taylor of the Department of Psychology. As an example of the inter-relationship in course structure, an architect with a Master's degree may further his studies with an emphasis on psychology, resulting in a Doctorate in 'Architectural Psychology'.³ An attempt is being made to discover the real problems which exist, instead of merely concentrating on specific observations and knowledge gained within one faculty of study. Perhaps the educational system should be developed in accordance with Theoretical Postulate 4, (part B), an intuitive reaction from field research to the

³E.L. Wood, Associate Registrar, Letter from the University of Utah, Salt Lake City, (as a result of telephone interview, Mar.14, 1972)

compulsory school curriculums to which young children are exposed?

(see supra, p.162; also refer to data presented in Chapter One, supra, pp.92-95).

Dr. Malik (Communications and Arts Program director in Calgary and Loyola University in Montreal), also stressed, in his own terms, the kind of information the designer must seek before satisfactory solutions can be achieved. He spoke about the historical relevance of certain phenomena which exist today, as well as the superlative need to regard human 'functions' as foremost in the design process.⁴

In a discussion concerning the recommended system proposed for this thesis, Dr. Llewellyn Thomas, both medical doctor and engineer, also indicated that similar information advocated by this system was required in many fields of knowledge. He feels that, although the system is justified, the proposals concerning the need for new information or new forms of information would in all probability not be initiated in the near future. Since such 'reasons' and 'whys' are not available in any form today and are only currently being recognized as necessary for problem solving, such techniques for extracting such specific and unique information call for devices which the designer or researcher cannot hope to achieve in the immediate future.⁵

However, according to Allen Bernholtz (Urban Affairs Consultant, refer to acknowledgements, page iii) the very 'intention' to discover

⁴Dr. Malik, Interview, Winnipeg, Manitoba, November, 1971.

⁵Dr. Llewellyn Thomas, Interview, Ontario College of Art, Toronto, Ontario, February, 1972.

the reasons behind behavioural activities is important.⁶ Educationalists¹⁷³ should introduce to students in all faculties the need both for innovative research techniques and for inter-disciplinary co-ordination and participation in problem solving.

The practicing architect must continue to produce solutions for human functions regardless of the fact that the new information or re-packaged information is not yet available. Hopefully, educators, practitioners and researchers will contribute to the 'need', such that the most meaningful solutions will result.

A design method generally consists of one or more of the following processes; (1) empirical study, (2) historical significance, (3) intuition.⁷

(1) Empirical studies, which generally include basic observations as well as calculated and documented research methodologies, have been discussed in this thesis. Since these studies are made upon observable phenomena, each one must be adequately described in terms of the constraints upon, and the context within which the observations were made, in order to be of any consequence. Such specific studies should be considered only in relation to the area examined or an area within the same context (if this is possible). Specific observations are often documented and then applied generally, or even in some cases, applied universally. This cannot be justified either by the methodology or by the resulting evidence.

⁶A. Bernholtz, Discussion, concerning conclusions and recommendations, Toronto, Ontario.

⁷Dr. Llewellyn Thomas, Interview, Ontario College of Art, Toronto, Ontario, February, 1972.

(2) The endurance of a phenomena or activity over a great period of time indicates that it must have some special quality of human attraction to justify its existence in present society. These observations may not explain the reason behind the endurance, but must certainly be greatly considered in designing since one would believe that only human desire or need could enable any activity to be perpetuated from one life cycle or one generation to another.

A good example of an historically significant observation, particularly relevant to this thesis, is the 'swing', "tensioned cords of swings in which children have rocked from time immemorial, long before the Mycenaean era."⁸ The book where this information was obtained shows a picture of an historical carving of a small child on a swing; the photograph is entitled, 'Small Prehistoric Figure from Crete.'⁹

(3) Physical designers generally make decisions intuitively (with immediate insight, without the actual use of rational process). Since intuitive ideas are not necessarily good, much rational input or consultation from various knowledge specialists is usually involved in complicated or elaborate projects. However, the actual conception of the three-dimensional idea is often indescribable, merely called 'intuitive'.

Unfortunately, all designers, physical or otherwise, do not have a good 'intuitive' sense. The consideration of the 'why' or 'reason' behind the human function or activity as proposed in this thesis, should be the preliminary basis for all design decisions.

⁸Eduardo Torroja, Philosophy of Structures, (Berkeley, California: University of California Press, 1962), p.9, fig.2:1.

⁹Ibid. p.8-9.

Intuition can then play a great part in interpreting the requirements in a variety of ways. However, until such information is available, the designer must rely heavily on the information available and perhaps more important, his own intuitive feelings.

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Many of the sources cited apply to several areas of influence on the development of the child in the city but have been sub-sectioned as follows for convenient reference.

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APPENDIX

When the illustrations in this thesis have been generated by ideas other than those of the author (Susan Black) they are listed below and numbered corresponding to those of the figures as listed on page .

¹Pleva, E.G.; advisory editor; The Canadian Oxford School Atlas; Toronto: The Oxford University Press, 1961, p.4.

²Anam, E. "Housing." People Design/2. Canadian Interiors. (December, 1970), p.26.

⁶Pines, M. "A Child's mind is shaped before age 2." Life Magazine, Dec. 17, 1971, pp.63-68.

⁸W.J. Goode, The Family, p.51-52.

⁹Child Study Association of America, Children of Affluence - Children of Poverty, New York, N.Y.: Child Study Association of America, Inc., 1967; see also M. Hunt, "The Future of Marriage," Playboy, p.116.

¹⁰W.J. Goode, The Family, p.2-5; see also M. Hunt, "The Future of Marriage," Playboy, p.116.

¹³A. Bengtsson, Environmental Planning for Children's Play.

¹⁴M. Safdie, Beyond Habitat, p.158-159.

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¹⁶Blake, Peter, Le Corbusier; Architecture and Form, (Baltimore, Maryland: Penguin Books, 1960) pp.119-25.

²³A. Bengtsson, Environmental Planning, p.110.

²⁴M. Safdie, Beyond Habitat, p.160-61.

²⁵W.V. Hall and A. Miller, "Children's Play on Housing Estates". pp.1529-36.

²⁶Ibid. ²⁷Ibid.

²⁸A. Bengtsson, p.110.

²⁹W.V. Hole and A. Miller, loc. cit.

³²Commission of Education of the British Columbia Teachers' Federation; Involvement, p.28.

³⁴"Teachers in our Downtown," Toronto Daily Star, Aug.24, 1971, p.8.

³⁵Educational Facilities Laboratories. Reports.

³⁶Ibid.

³⁸R.S. Wurman, "Making the City Observable," Design Quarterly, Vol.80.

⁴⁰B. Wellman, "Is the Day of the Neighbourhood Over?," Toronto Daily Star.

⁴¹Ibid.

⁴³K. Lynch, Image of the City.

⁴⁵A.E. Parr, "Psychological Aspects of Urbanology and the Child in the City," p.399.

⁴⁶Ibid.

⁴⁷M.L. McMahon, "The Relationship Between Environmental Setting and Curiosity in Children," abstract.

⁴⁹E.B. Hurlock, Child Development, p.137.

⁶²C.A. Doxiadis, "Confessions of a Criminal," Ekistics, (Vol.191, No.32, October, 1971), pp.261-304, see also C. Alexander, et al, Houses Generated by Patterns.

The plans of Roden Junior Public School were supplied in a booklet concerning the school, by Don Irwin, principal.