

RELATIONSHIP BETWEEN THE HOUSING ENVIRONMENT OF
AGING DEVELOPMENTALLY DISABLED PERSONS AND THEIR ACTIVITY:
FREQUENCY, TIME SPENT AND ACTIVITY TYPES

by

Eleanor Gail Chornoboy

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Presented to the University of Manitoba
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ABSTRACT

This study investigated the relationship between the near environment and the activity of aging developmentally disabled (ADD) persons in terms of frequency of activities performed, amount of time spent at activities and the number of types of activities. In order to determine the existence and the degree of relationship a pictorial instrument was designed to measure the relationship between the near environment and the activity of ADD persons. A sample of 29 ADD persons and caregivers from five different types of community living environments took part in the study.

Thirty activities were examined in the study, and for further analysis the 30 overall activities were divided into groups of active and sedentary activities. It was found that participants from the senior citizen facility most frequently performed overall and sedentary activities. When variables other than facilities were examined, it was found that persons who received one-to-one training performed the highest number of types of overall and active activities; persons whose rooms were located away from the main activity area of the residential facility spent the most time performing overall, active and sedentary activities. Females performed active activities more frequently than males did, and they performed a larger number of overall and active activities than males did.

The findings from this study are discussed, and they suggest the need for further examination of the relationship between the near environment and the ADD population in order to plan maximally appropriate

residential facilities for the ADD population. This study also describes a method of obtaining information from the ADD participants instead of only relying on the information provided by caregivers.

ACKNOWLEDGEMENTS

Sincere gratitude is owed to Dr. Carol Husa Harvey, my major advisor for her guidance and encouragement in this project. I also thank my other committee members Dr. John Bond Jr., Professor Dana Mallin Stewart and Dr. G.H. Lowther for generously sharing their expertise with me during this study.

The aging developmentally disabled participants and their caregivers deserve the credit for the concept and development of this study. They created the need to provide answers to the questions posed, and helped to begin answering the questions by their participation in this study. I am deeply indebted to them.

My appreciation is extended to Iris Loewen and her staff at the South Central Regional Library for their long hours devoted to retrieving literature for this study; to Margaret (Peg) Chubb for her delightful artwork in creating the sketches for the testing instrument; to Don Sabourin for his generosity and help in the data analysis; to Rod Ungarian for his assistance; to Leslie Turner who patiently typed this thesis; and I especially wish to thank my parents who always gave me every opportunity to choose and pursue my own goals.

Finally, I thank my husband, Larry, who never failed to support and encourage me throughout my graduate work. I dedicate this thesis to Larry because he made it possible.

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CHAPTER 1

INTRODUCTION

Aging developmentally disabled (ADD) individuals are the focus of this research. The relationships between these individuals and their respective near environments are studied.

Purposes and Objectives

The purposes and objectives of this investigation are: (a) to identify aging developmentally disabled persons; (b) to explore the relationships between aging developmentally disabled (ADD) persons and their near environments through a literature search; (c) to design a valid instrument to test the relationship between the near environments and ADD persons; (d) to test the instrument; and (e) to provide recommendations for future studies on the subject.

Definition of the Problem

Relatively little is known about aging developmentally disabled (ADD) persons in Manitoba or elsewhere. Dickerson, Hamilton, Huber and Segal (1974) referred to ADD persons as an invisible group because they were found to be absent in the literature of gerontology and of mental retardation. Others have noted the paucity of research on the subject of ADD persons (Anglin, 1981;

Callison, Armstrong, Elam, Cannon, Paisley and Himwich, 1971; DiGiovanni, 1978; Hillman and Libro, 1966; Kriger, 1976; Segal, 1977; Wieck, 1979; Wilson, 1981) and their unmet needs (Dickerson, et al., 1974). The lack of information is further confounded by the fact that much of the data are old, although not outdated, as is witnessed in recent literature (Puccio, Janicki, Otis, Rettig, 1983). The storage of literature on ADD groups predicts the limited literature on the relationship between ADD groups and their near environments.

The literature is not limited to an arbitrary age because aging is a lifelong process. Mentally retarded persons have been described as being aged in terms of a variety of chronological years in the literature. The term aging developmentally disabled (ADD) will be used to refer to the aging mentally retarded population.

Operational Definitions

Mental retardation. Mental retardation is defined as "significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behaviour, and manifested during the developmental period" (Grossman, 1973, p. 11). Despite the permanent disparity in the intellectual functioning between non-mentally retarded and mentally retarded persons, learning does not stop after the growth process. Both groups can and do learn throughout their lives (Martin, 1981).

Developmental disability (DD). For the purposes of this paper, developmental disability is synonymous with mental retardation. Developmental disability will be the term used in this paper because recent literature focusing on aging mentally retarded persons, refers to that population as the aging developmentally disabled (ADD) population.

Aging. Aging is the process of growing old. The aging process is a biological phenomenon manifested in characteristics such as physical impairment and some mental failure. It has social and psychological consequences (Kriger, 1976). It is continuous and omnipresent (Lawton, 1965).

Aging Developmentally Disabled (ADD). Aging developmentally disabled persons are defined as mentally retarded persons who experience a host of decrements of ability relative to their former functioning level and life situation, resulting from the normal, abnormal, or pathogenic aging process (Puccio, et al., 1983). The ADD population is a group of heterogeneous aging mentally retarded persons. The group consists of a variety of persons with different personal histories, skills, interests, and aptitudes. The individuals have aging and varied mental deficits in common.

Near Environment. For the purpose of this investigation, the near environment is a combination of the physical, biological, and social (including psychological and emotional) environments including and surrounding the residential facility within the context of

a community setting. It consists of the following (Bubolz, Eicher and Sontag, 1979):

- (a) natural environment (NE). This is the environment formed by nature. Its components are physical, biological and space-time elements.
- (b) human constructed environment (HCE). This is the environment altered or created by people. Its components are sociophysical, sociocultural and sociobiological.
- (c) human behavioural environment (HBE). This is the environment of human beings with its components of biophysical, psychological and social behaviours.

The HCE as the residential facilities and the HBE such as the numbers and types of persons living in the same facility as the ADD individuals will vary across settings and will be elements of this study. The natural environment will remain constant within each of the spheres across environments.

The near environments explored in this study were those inhabited by ADD persons. Specifically, the near environments that were addressed were residential facilities including community residences for four to ten employed adult developmentally disabled persons, not necessarily just for ADD persons; foster homes in which the ADD persons lived with foster parents and possibly other family members or other persons; familial homes in which ADD persons lived with their parents or members of their extended family; a senior citizen

facility which was an institution for aging persons from the general population; and independent living situations where the participants lived independently in a variety of settings. Each of these environments has its own set of components consistent with the description given by Bubolz, Eicher and Sontag (1979).

Activity. Activity is defined as behaviour including : (a) active leisure activities such as playing games and doing craftwork and domestic activities such as setting the table; and (b) sedentary leisure, non-goal oriented activities such as watching television or rocking in a rocking chair. Sedentary activities are activities which require no major movement of any bodily limbs in order to continue the activity. They include sitting in a chair, watching television, listening to records, reading books, visiting with someone and talking on the telephone. The remainder of the activities are considered active because they required use of limbs and/or fingers to continue the activity. Personal activities such as grooming and eating were not included in this study because these activities occurred in every facility.

For the purposes of this paper, the term overall activity will be used to include both active and sedentary activities. Overall activities were separated into active and sedentary activities in order for the analyses to be more focused in attributing specific significant differences to specific variables.

Differences Between ADD and Aging Nondevelopmentally Disabled Populations

Disagreement on whether differences in rate of aging, life expectancy, adjustment to aging between ADD persons and persons without developmental delays exists. In their report on aging developmental disabilities, Puccio, et al., (1983) says that enough information is beginning to be known about ADD persons to recognize similar and dissimilar aging patterns in the two populations.

The needs of the ADD group and the general aging population are the same, according to some authors. Jones (1972) feels that the needs are similar, but accentuated in ADD people. Gordon (1978) reasons that the needs are different because ADD persons represent an accumulation of unresolved medical problems along with deficiencies related or unrelated to their individual disabilities. Hofmeister and Gallery (1978) suggest that ADD persons have additional educational needs to break the cycle of dependence and regression. Expansion of this discussion will occur later in this thesis.

Theoretical Perspectives and Research Questions

Humans are interdependent with each other, with other living species, and with the total environment in which they live. This view of individuals in associations with their physical, social and biological conditions and events provides a human ecological or ecosystem frame of reference for analyzing human behaviour and activities (Bubolz, Eicher and Sontag, 1979).

Ecosystem Theory

The ecosystem theory assumes that interaction between individuals and their respective environments exists. The interaction occurs between individuals and some or all of the components of the near environment which consists of a natural environment (NE) including space and time; a human constructed environment (HCE) including the facility; and a human behavioural environment (HBE) including human beings and their biophysical, psychological and social behaviours (Bubolz, et al., 1979). These environmental elements interrelate with each other and with ADD persons, thus forming an ecosystem. Interaction occurs when part of an ecosystem influences or acts upon another part of the ecosystem and is reciprocally influenced or acted upon.

Input and output between the individuals and their environment occurs in a reciprocal rhythm of speed and intensity. For example, in the case of ADD individuals, if a person receives stimulation from the HBE in the form of invitations to take part in a game, the individual is more likely to interact with the HBE than if no invitation had been extended. The interaction may result in altering the HBE by adding his or her body to that environment and by changing interaction patterns within the group by his or her presence and participation.

A second form of interaction occurs between the ADD individual and the HCE. Easy access to an area of a building with structured

and unstructured activity opportunities may encourage activity. The person interacts with the constructed environment by using the facilities in the room to a greater or lesser degree. The more the individual understands and uses the stimulating environment, the more the environment and the individual will interact with and influence each other.

A third form of the ecosystem concept is the reciprocal relationship among a system's components. Interaction occurs within the person, among the environments and between the person and the environment(s). Humans are dependent on the HBE, HCE and the NE to gratify their needs and desires. The interaction among people and the three environmental elements occurs simultaneously. For example, an ADD persons selects clothing from the closet (HCE) based on the temperature of the room (NE) and on his or her expectations of social interaction (HBE). Interaction with a friend (HBE) can be influenced by his or her attire (HCE), his or her interaction skills (HBE), the design of the space (HCE), and the climate (NE).

Perin (1970) also uses an ecosystem framework in discussing how the environment affects human behaviour relative to the stimuli of human demands and how individuals adapt to their environment in their personal, physical and emotional development processes of control and independence from the environment (Mallin Stewart, 1984), and the intent to which people adapt to their environment is a measure of the cost of the environment to the

people and society; "costs in terms of energy, time, physical and mental health, self-esteem, money and values" (p. 16).

The amount of adaptation to the environment that is required of individuals in order for them to feel competent and to have a sense of satisfaction within that environment is proportionate to the costs expended.

Perin says that individuals' competence is the accumulated result of the history of their own specific interactions with their environment. The competence is a realistic measure to determine congruent environments because people need to feel competent in their environment and competence leads to a sense of satisfaction. Satisfaction is derived from doing what people expect to do. Perin suggested that people prefer what they have experienced and what they expect. Thus, doing what people expect and want to do, equates competence and a sense of satisfaction within an environment.

Perin's premise is that environments can be rated on a continuum from satisfactory to unsatisfactory depending upon the cost which participants are required or willing to pay in order to function in those environments. That is, the level of satisfaction is not achieved only by the environment but is also relative to the costs people are prepared to pay. Perin suggests that an environment should be a congruent environment in which persons do what they can do and expect to do with minimum adaptive costs. In ecosystem terms, this translates to the existence of interaction between

the individual and elements in the environment to satisfy the needs and desires of the persons.

Lifespan Theory of Human Development

A second theory that provides an understanding of ADD and aging persons without developmental disabilities is the life-span developmental perspective. From this perspective, life-event antecedents such as a new job or an accident, and mediating variables such as health and intelligence, lead to adaptation processes which result in functional or dysfunctional change outcomes (Hultsch and Deutsch, 1981). Throughout life, individuals are exposed to experiences, and their adaptation to them is based upon their appraisal of the situation, coping strategies, previous actions and experiences, and results of those previous actions and experiences. ADD persons adapt to their environments and situations in reference to their perceptions and their interpersonal and intrapersonal previous experiences. Their adaptation may occur at a different rate or in a different order than the adaptation of nondevelopmentally disabled persons.

Research Questions

The goals and objectives of this study were identified on page 1. This study was exploratory and descriptive in nature. Based on the literature review and the need to know more about the subject

areas to provide maximally appropriate residential facilities for ADD persons, questions were developed to permit exploration of the effects of the near environment on the activity of ADD persons.

They were stated as follows:

1. Is the near environment related to the activity of ADD persons?
 - (a) Is the near environment related to the frequency of activities performed by ADD persons?
 - (b) Is the near environment related to the amount of time spent at activities by ADD persons?
 - (c) Is the near environment related to the number of types of activities performed by ADD persons?

In order to provide answers to the questions, an instrument was designed to measure the relationship between the near environment and the activity of ADD persons. The instrument relied on information from ADD participants. It was designed to obtain accurate responses from the participants and to eliminate acquiescence by the participants. Caregivers were given a questionnaire to ascertain accuracy of answers given by the participants and to indicate the extent to which the activities were performed. Descriptions of the facilities were provided by the examiner. According to Perin (1970), the human development process of growth in the environment leads from being controlled by, to controlling the environment, with consequent independence of the individual. ADD persons, by definition,

have arrested development at an early age. They are controlled by their social, physical and housing environment, and they have few skills and little opportunity to control their environments or to develop competency within their environment.

CHAPTER II

REVIEW OF THE LITERATURE

The literature review will focus on differences and similarities between the ADD and aging nondevelopmentally disabled populations in terms of demographics, lifespan, intellectual changes and adjustment to aging.

Demographic Profile of the ADD Population

A small proportion of ADD persons live with their families (Janicke and MacEachron, 1984). As developmentally disabled persons age, their number in parental homes are inversely proportionate to their age because their parents die or are no longer able to care for them. A complex scenario of ADD persons in need of care from sources outside their home is compounded by increased numbers of ADD persons coming of senior age due to what Havens (1981) refers to as a bulge in the population below age 65.

The general population bulge is due to improved health care in younger ADD persons and a birth rate increase at the time when current ADD persons were born (Havens, 1981). Within the next decade the numbers of ADD persons will continue to increase because the number of developmentally disabled children born in the "baby boom" years was proportionately high (Puccio, et al., 1983).

Decreased Life Expectancy in Developmentally Disabled Persons

On the average, developmentally disabled persons do not live as long as persons without developmental disabilities (Balakrishnan and Wolf, 1976; Forssman and Åkesson, 1970; Richards, 1976), even though the life expectancy of both populations has increased. Despite improved medical care, ADD persons age earlier (Tymchuk, 1979) because of physical problems (Thomas, Acker, Chóksey and Cohen, 1979) and because of inadequate service delivery (Gordon, 1978). Panitch (1983) aptly describes the ADD population as, "People with MR today tend to become old before they grow old" (p. 8).

Berg and Dalton (1979) conducted a study of middle aged developmentally disabled persons. The study provides information that also applies to the ADD population because there is little difference between middle age and old age in the definition of aging developmentally disabled persons. Berg and Dalton suggest that premature deaths in numerous developmentally disabled persons resulted from (a) earlier discontinuation of efficient bodily functions, (b) lack of complaining of ill health and not getting the necessary medical attention, and (c) having lived in adverse physical environments with poor diets, over-crowding, and poor hygiene, resulting in increased exposure and decreased resistance to infections and diseases.

Richards (1976) suggests that there is an implied relationship between survival and level of intelligence. He reasons that deaths can be accounted for by infections and from impaired functioning

resulting in a reduction in the quality of feeding habits, swallowing reflex, coughing, nose blowing, breathing and hygiene.

In their first five years, institutionalized developmentally disabled children have a high death rate compared to the general population of the same age (Forssman and Åkesson, 1970) and there is a rapid decline in death rates with age (Balakrishnan and Wolf, 1976; Forssman and Åkesson, 1970; Richards and Sylvester, 1969; Tarjan, Eymann and Miller, 1969). Consequently additional years of life after the high mortality period of childhood are expected. The high death rate at an early age partially accounts for the decreased average life expectancy of the developmentally disabled population.

Increased Life Expectancy in Developmentally Disabled Persons

Increased life expectancy in the developmentally disabled and general populations has resulted in an increased number of persons in both populations in advancing years (Balakrishnan and Wolf, 1976; Dybwad, 1962; Hillman and Libro, 1966; Panitch, 1983; Richards, 1972; Schulman, 1980; Snyder and Woolner, 1974). Increased life expectancy of ADD persons is due to improvement in health care (DiGiovanni, 1978; Dybwad, 1964; O'Connor, Justice and Warren, 1970), standards of institutions and more nutritious food (Dybwad, 1964; Forssman and Åkesson, 1970), social conditions (Segal, 1977), and education (Wachowich and Zalasky, 1979).

Evidence of developmentally disabled persons experiencing an increase in life expectancy exists. From 1954 to 1969 the institutionalized developmentally disabled population aged 55 years and over in England and Wales increased from 5,482 to 13,841 persons (Richards, 1972). Snyder and Woolner (1974) found an increase from one to 199 persons aged 70 and over in Ontario institutions between 1930 and 1960..

Intellectual Changes With Age

There does not appear to be a decline, but rather a change with age in intellectual functioning of the ADD group. DiGiovanni (1978) says some changes represent decline and some represent growth. Lawton (1965) found that thresholds for perception and sensorimotor skills changed for the aging developmentally disabled and the ADD populations. This resulted in the ADD group appearing to be more delayed while the aging nondevelopmentally disabled group appeared slower. In a study conducted in the Manitoba School in Portage la Prairie, Manitoba, Bell and Zubek (1960) demonstrated that improvement in intellect could occur over a five year period in developmentally disabled persons regardless of age.

In a test-retest study, Bell and Zubek (1960) studied the relationship between age and the intellectual performance of 100 developmentally disabled individuals. Groups of institutionalized developmentally disabled persons at 20, 30, 40 and 50 mean years of

age were tested by the Wechsler Bellevue Intelligence Scale and the Wechsler Vocabulary Test once again five years later. The oldest group had the lowest scores in intellectual functioning gains, but all groups showed an increase in scores over time. The Full Scale scores declined after 45 years and verbal scores did not decline until after 50 years.

In a study of 1,159 institutionalized developmentally disabled persons ranging in age from childhood to 75 years, Fisher and Zeaman (1970) detected a decline in IQ after 60 years, but they found that the IQ of developmentally disabled persons between 16 and 60 years remained relatively stable. Higher levels of developmentally disabled individuals showed a tendency to gain IQ points with age.

Admittedly, there are some problems to the research of intelligence in developmentally disabled persons, but in part, these difficulties have been overcome by cross-sequential and semi-longitudinal studies. The intellectual functioning of ADD persons follows the same patterns as the aging in persons from the general population, but from a lower baseline (DiGiovanni, 1978).

Adjustment

Developmentally disabled persons who have been dependent upon a caregiver for supervision and/or care throughout their lives have been shown to adjust to nursing homes with considerable ease. They are already acquainted with unstimulating environments and have less

difficulty in adjusting to this than the nondevelopmentally disabled elderly population do (DiGiovanni, 1978). They are regarded as "ideal" nursing home residents and are already familiar with the dependency role (Mueller and Porter, 1969); they are not bothered by aggregate living as nondevelopmentally disabled persons are (Goldman, 1960); they appreciate their new privacy (DiGiovanni, 1978); and they do not seem to do more poorly or exhibit any transplantation shock (Mueller and Porter, 1969; Stotsky, 1976). The adjustment of ADD persons in the community (or in any residential setting) is largely dependent on a satisfactory domicile, suitable work or other activity and a recreational program (Dybwad, 1964).

Life Events

A significant change in the aging process is the loss of role (Kalson, 1976) or prestige, but this is seldom of consequence to ADD persons who experience few events of aging such as retirement or loss of prestige because most of them have not enjoyed a career in the traditional sense of the word. Kriger (1975, b) indicates that for nondevelopmentally disabled persons, old age is frequently accompanied by low income or a loss of income potential, personal loss and family rejection and excess leisure time. The ADD persons does not need to adjust to a sharp decrease in income because he or she may have had no income or very little income in proportion to other working persons. Personal loss and family rejection may have

been experienced at a very early age as many ADD persons in institutions have often been in a state of dependence since birth or youth. By contrast, Wilson (1981) indicates that community-based ADD persons, whose parents or caregivers die, or are no longer able to provide care because of illness or diminution of energy, experience shock. Dickerson, et al., (1974) refer to this life circumstance as placing ADD persons in double or triple jeopardy because the loss of parental care usually results in a change of residence, possibly to long-term institutional care and/or often living with senile persons. Relocation is usually accompanied by loss of friends and neighborhood.

In Wilson's words, "the reaching of a chronological age is less significant in the aging process than is the onset of marked physical deterioration or the experiencing of some significant life-changing event" (p.11).

Residential Trends for ADD Individuals

Much emphasis has been placed on the need to move developmentally disabled persons from institutions into the community. A majority of the research comparing developmentally disabled persons' skills and characteristics including adjustments, activities, life skills, learning abilities, and social behaviours has been confined to comparing persons in community settings with those in institutional living arrangements. Examples of research that has been done are

McLain, Silverstein, Hubbell and Brownlee's (1977) comparison of residential environments of a state hospital for developmentally disabled persons with various types of community facilities and O'Neill, Brown, Gordon, Schonhorn and Greer's (1981) longitudinal study on activity patterns of developmentally disabled adults in institutions and communities.

A trend to deinstitutionalize developmentally disabled persons exists. It is generally believed that it is more beneficial for developmentally disabled persons to live in the community than in institutions. Studies comparing the changes in persons after a move from the institutions to the community indicate significant favorable behaviour changes (Close, 1977; Fiorelli and Thurman, 1979; Scheerenberger and Felsenthal, 1977).

The greatest gains were exhibited soon after placement (O'Neill, Brown, Gordon, Schonhorn, and Greer, 1981; Schroeder and Henes, 1978). Lest it be assumed that the greater the differences between the institutional and community settings, the greater will be the improvements by the ADD persons with respect to community adaptation, Seltzer, Sherwood, Seltzer, and Sherwood (1981) caution that no data are available to support such an expectation, and that related studies need to be conducted before conclusions are reached. For stronger support of this assumption, studies documenting the changes of individuals moved from the community to institutional settings ought to provide evidence of regression.

Despite the limited evidence documenting positive changes in persons who moved from institutions to community settings, deinstitutionalization is occurring. The question that must then be answered is, "What is, or are, the most suitable community residential facility or facilities for ADD individuals?"

Ganges (1984), an architect on the Committee on Architecture and Environmental Planning for the International League of Societies for the Mentally Handicapped (ILSMH), has indicated that little can be found in the documentation that specifically addresses the effect of the environment on developmentally disabled persons. More to the point, he says the ILSMH has no documentation on the subject.

Although the physical facility is a training apparatus for learning skills to function in the community (Sokoloff, 1976), few studies comparing different community residential facilities reveals that the environment, including the human behavioural environment, is a determinant of the social behaviour of developmentally disabled residents (Landesman-Dwyer, Berkson and Romer, 1979). The environmental normalization which is "a process that promotes the development of individual capabilities and increases the capacity of individuals to function adaptively in a community setting" (p. 259) is predictive of adaptive functioning in community settings, not the quality of the physical setting (Hull and Thompson, 1980). Community care facilities must provide

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an environment rich in programs and external contact (Butler and Bjaanes, 1977) so as to provide stimulation and promote development in a diverse aging population sharing the common denominator of "developmentally disabled." As developmentally disabled persons grow older, their intrapersonal and interpersonal histories become increasingly varied, resulting in a variety of needs within a heterogeneous group.

The literature suggests that human resources are an important factor in determining the suitability of a facility for an individual. The next question that needs answering is, "If the human resources change, or if the ADD person changes physically, socially or psychologically, is the subsequent need for a required and desirable environmental change actually met?"

Of those developmentally disabled persons who initially moved to the community and those who have always been in the community, many are currently coming to the age where they will require residential facilities other than their present ones. Persons living with their parents may find their parents are no longer able to care for them; persons in foster homes may find their caregivers want to retire from a perpetual care service; persons in community residences may be obligated to leave the residence if they are over 65 years and are no longer able to work during week days.

Housing Needs and Human Development

Housing for the ADD population has been a need identified in the literature. Despite references to the need for a variety of facility types (Anglin, 1981; Wilson, 1981), limited references to meet the housing design needs of facilities for ADD persons in terms of facilitating activities or achieving congruity were found. Although a variety of facility types are discussed in the literature, no mention is made about design factors when the different facilities are compared in terms of their effects on their respective residents.

Perin's (1970) definition of individuals' competency within an environment relates to their achievement in the environment which coincides with their rating of the environment. The amount that persons need to adapt in order to achieve their goals within the environment matches with costs associated with adaptation. High adaptive costs in an environment are frequently accompanied by withdrawal and frustration. Low costs result in satisfaction and competency within the environment. Reports (Goldman, 1960; Mueller and Porter, 1969) indicate that ADD persons adapt to care facilities with ease. This would indicate that they pay low adaptive costs in care facilities. That is not to say that at an earlier point in their lives the costs may have been considerably higher. By the time developmentally disabled persons reach ADD status, most have had considerable experience in being cared for,

having decisions made for them and being without prestige. Thus, the span of their earlier lives prepared them for a lifestyle of being cared for, and therefore, the consequent ease of adjustment to care homes.

Berg and Dalton (1979) stress a need for constructive research and evaluation to determine the kinds of accommodation and associated arrangements that are most suitable. Research and evaluation would involve an improved understanding of the capacities of the individuals and the many variables in the environment including public attitudes and supportive services. Berg and Dalton stress the notion, believed by practitioners and advocates for normalization, that institutionalization is inherently bad and community places are inherently good, ought to be dropped. In the few attempts that have been made to measure and assess living arrangements for mentally handicapped persons, the variables and the findings have been diverse. A methodologically sound study to determine the impact of variables with specific references to the impact of the near environment on ADD persons is necessary (Berg and Dalton, 1979).

No standardized measures capable of obtaining information on how the near environment affects the activity of ADD persons were found in the literature. In order to measure relationships between the individual and the near environment, within the ecosystem framework, an instrument was developed.

Consistent with recommendations made by researchers, Canadian ADD persons are living in community residences, group homes, independent living situations, family homes, foster homes, institutions and senior citizen homes. Also consistent with the predominant literature is the limited knowledge of the relationships between the facility and the behaviours, activities, adjustment, living skills and affiliation patterns of ADD individuals.

In view of the rapidly increasing size of this population which has resulted in their increased visibility, decision makers and decision implementers responsible for program planning and budgeting are obliged to focus on the residential and activity needs along with other needs such as medical care and socialization of ADD persons. Existing fiscal restraints make planning for residential and activity needs within existing environments, programs, and funds an attractive alternative to new facilities and programs. Before resolutions are made to implement or supplement specific programs and facilities, empirical evidence is required to clarify the relationship between the environment and activity, what environments promote what kinds of activities, and how activities of ADD persons can be measured. With the currently increasing ADD population, urgency to identify the residential needs and to act in accordance to meet those needs exists.

Wood (1979) recognizes the need for a variety in facilities, but places emphasis on the need to establish community services. Wolfensberger (1975) also does not cite specific design ideas, but stresses the need to adopt the normalization principle in environmental design of human services and facilities.

In the past, little emphasis has been placed on the needs of ADD persons because they constitute a small percentage of the developmentally disabled population in Canada. Additionally, parents who previously advocated for the developmentally disabled children have been outlived by now aging developmentally disabled children, or the parents are unable to advocate for their children (DiGiovanni, 1978). With the continuous increase in the ADD population, the need to provide them with suitable residential facilities which make allowances for a congruous lifestyle must be pursued in spite of the absences of previous caring advocates.

Researchers have primarily restricted their data-collection of ADD groups to verbal and higher level functioning individuals and have had caregivers respond on behalf of non-verbal, lower functioning individuals (Sigelman, Schoenrock, Spanhel, Hromas, Winer, Budd and Martin, 1980). Sigelman, Budd, Winer, Schoenrock, and Martin (1982) found that yes-no checklists introduced acquiescence biases, while multiple choice questions with pictures yielded a high response level as well as valid answers from a high proportion of interviewees.

Attempts to interview ADD persons by means of open-ended questions resulted in receiving many inaccurate and "don't know" responses. Sigelman, et al., (1982) found the validity of answers regardless of age or level of functioning cannot be assumed for developmentally disabled persons.

In the search for an instrument to measure activity levels in residential facilities, several instruments (Anglin, 1981; Kriger, 1975, a; Scheerenberg and Felsenthal, 1977; Wolfensberger and Thomas, 1983) were reviewed and tested with the consideration of adapting the instruments to meet the requirements of this study. None were suitable or adaptable to answer the questions of this investigation. Thus, a need to develop a suitable instrument was evident.

To accurately identify the needs and wants of the population, that population must be able to answer questions about their needs and wants on their own without the assistance of a caregiver. In such a way the caregivers' responses on behalf of the ADD persons would supplement the participants' responses, thus affording a more thorough compilation of the ADD population's wants and needs. The opportunity for ADD persons to answer questions on their own behalf offers an avenue for them to attain a measure of control over the respective environments.

CHAPTER III

METHOD

No standardized measures capable of obtaining information from ADD persons on how the near environment relates to their activity were found in the literature. In order to measure relationships between the individuals and their respective near environments, within the ecosystem framework, an instrument was developed.

Participants

The participants were all developmentally disabled individuals, fifty years of age and older in eight south central Manitoba municipalities. For purposes of a representative group in a rural area, south central Manitoba was chosen because of its high density of ADD persons who were moved there in their younger years to receive available services such as housing and workshop employment. The participants lived in a variety of residential settings. No research specific to rural settings was identified, thus making this collection of data relevant in terms of resources and needs of the ADD population in rural locations.

The initial task of identifying ADD individuals was done through consultation with Mental Retardation Services of the province of Manitoba. Since Mental Retardation Services had been in

place in the communities since 1972, and because developmentally disabled adults were eligible for Social Allowance as they were considered unemployable, it was reasonable to assume that virtually all ADD persons had been identified. Developmentally disabled persons who applied for Social Allowance were referred to Mental Retardation Services by the Department of Employment and Economic Services for care level assessments. Persons aged 65 and over received Old Age Pension.

Initially, 37 potential participants were identified as belonging to this group. Four potential participants were unable to participate in the testing because they were deaf-mute and had not acquired expressive communication skills other than smiling, frowning or nodding, which suggested that their receptive skills were not reliable. Three persons proved to be inconsistent in their answering of training questions and were disqualified. One individual declined to participate in the study. Thus, the final sample consisted of 29 participants.

Participants unable to speak or understand English were those whose language skills were limited to Low German. As the researcher was fluent in that dialect, the testing was conducted in Low German for four participants.

The participants lived independently, in community residences, in a senior citizen facility, in foster homes and in familial residences. The four participants living independently, eight participants

in foster homes and one participant in a familial home were employed in sheltered workshops where their incomes ranged from approximately \$10.00 to \$27.00 per week. The participants living in senior citizen facilities, two participants in familial homes, and the one participant in a foster home were unemployed and were not involved in any activity program.

With the exception of one participant who received rental income from personal property, all of the individuals under age 65 were supported by the provincial Department of Employment Services and Economic Security. Their monthly living allowances were supplied by the Department, and an additional monthly allowance of \$42.00 for personal effects and \$24.80 for clothing was provided. Employed participants received an additional monthly allowance of \$17.00 for work clothes. That is, employed persons received a monthly allowance of \$84.40 above their salaries and the cost for their care and their room and board. Room and board and the care and supervision fees were paid directly to the caregivers or to the care providing agency such as the Canadian Association for Mental Retardation (CAMR) board. All the aging developmentally disabled participants 65 years and over received monthly old age pensions of \$266.00 plus a guaranteed income supplement amounting to a total monthly income of \$533.61.

Community Residence Participants

Nine of the participants (4 male, 5 female) lived in community residences which were facilities for adult developmentally disabled persons employed during days; their ages ranged from 53 to 73 years (\bar{x} = 59 years).

The five community residences for employed adult mentally retarded persons, from which participants were drawn, were operated by local boards of the CAMR. Caregivers were hired by the boards. Three residences accommodated ten adults each, one residence accommodated four adults, and a fifth residence accommodated seven adults. One or more participants aged 50 and over were included in the adult population of each residence.

Of the nine participants living in community residences, six participants (4 male, 2 female) had their own rooms on the lower level and three females had rooms on the main floor.

All the participants in the community residences were employed on a daily basis. Four (1 male, 3 female) were involved in a life-skills training program in the residence for an hour per week with a one-to-one trainer. Program hours for one-to-one training purposes were available to persons living in community residences. The program was funded through the Manitoba government Department of Community Services and Corrections.

Foster Home Participants

Nine participants (7 male, 2 female) lived in foster homes; their ages ranged from 50 to 82 years (\bar{x} =60 years). The foster homes accommodated between one and five developmentally disabled persons. Two of the participants lived in the same home with three other clients younger than age 50 and the caregivers and their child; three participants were single foster clients in homes; and four of the participants lived in foster homes with one other client younger than age 50 and the foster parents.

In foster homes, four participants (3 male, 1 female) had rooms on the lower level. Other than sheltered employment for eight foster clients, no other organized programs were available in foster homes.

Familial Home Participants

Three males lived in familial homes; their ages ranged from 50 to 66 years (\bar{x} =59 years).

One of the participants lived with a brother and two sisters, one participant lived with a younger brother and sister-in-law, the third participant lived with aged parents. Two males had rooms on the second storey of their familial homes and one male had his own room on the main floor.

One participant in the familial setting was employed in a sheltered employment situation. The other two participants did not accept the opportunity of sheltered employment available to them.

Senior Citizen Facility Participants

Four participants (2 male, 2 female) lived in a senior citizen home for aged persons; their ages ranged from 65 to 75 years (\bar{x} = 70 years).

The facility accommodated 26 senior citizens in a rural setting which was a level one facility that provided minimum care and supervision. It was comparable to a hostel. The four participants in the senior citizen home all had rooms on the lower level of a split-level facility. No employment of life-skills training programs existed in the senior citizen facility.

Independent Living Participants

Four males lived independently; their ages ranged from 60 to 64 years (\bar{x} = 61 years). Of the four participants living independently, one participant lived with another developmentally disabled person in an apartment, one participant lived in a motel suite, and two participants lived in single suites in senior citizen facilities where meals and laundry were provided for them, but they cared for their own suites. One of the participants who lived in a suite in a senior citizen facility helped care for his aged mother who lived in a suite across the hall.

The four males all had their rooms on the main floor. Aside from sheltered employment for the independent living participants, one man received one-to-one life+skills training in his apartment.

All participants had free access to the entire common area of their respective facilities. They were not restricted by lack of space or lack of access to areas.

In summary, of the 29 participants, 20 were male and 9 were female. Nine participants (4 male, 5 female) lived in community residences; nine participants (7 male, 2 female) lived in foster homes; three male participants lived in familial homes; four participants (2 male, 2 female) lived in a senior citizen facility; and four male participants lived independently. Thirteen participants of the total sample had rooms located on the main floor near most of the physical and social activities within their respective residences. Sixteen participants had rooms located away from the main activity areas of the facility. Two of those participants had rooms upstairs in two-storey houses, and fourteen participants had rooms in lower levels of split-level buildings or in basements of bungalows. Five participants of the 29 received one-to-one training.

Instrument Design Considerations

In the development of an instrument to measure the relationship between the near environment and activity of ADD persons, consideration was given to nonverbal participants and participants with limited memory skills. In this research project verbal instruments including open-ended, yes-no, and multiple choice questions designed by Anglin (1981), Kriger (1975, a) and Scheerenberger and

Felsenthal (1977), were pre-tested with ten ADD subjects. In the pre-testing, it was found that the questions were not answered reliably. Some questions were not answered at all. Other questions were responded to inappropriately by comments such as telling the researcher what they had for lunch. Still other questions were responded to inaccurately such as saying they do laundry every day when they only help fold towels on Saturdays. These observations were supported by the caregivers.

A trial test requiring that participants respond to a pictorial questionnaire consistently produced accurate answers, according to the caregivers' corroboration. Consequently, a pictorial format was chosen to be developed for the purpose of this study.

In pre-testing the pictorial instrument, it was found that participants focused on the task, attended to the task and decreased acquiescence responses after a few trials. Once they had been trained to perform the required task and knew what was expected of them, they attended to the task and responded appropriately and accurately until the task was completed. The respective caregivers concurred that acquiescence decreased, accuracy increased and attention was maintained while the persons were trained in the tasks.

Instrument

To meet the objective of designing an instrument to measure the relationship between the near environment and activity of ADD persons, a pictorial instrument was chosen (see Appendix E). Non-verbal participants were thus able to answer the questions.

The instrument consisted of two sets of 30 black and white drawings on 8cm x 13cm white cards. Each card depicted an activity that had been observed in residences of ADD and aging nondevelopmentally disabled persons. One set of cards showed females performing the activities and one set of cards showed males performing the same activities to control for sex-role identification with, or rejection of, activities as determined by the gender of the character sketched in the picture (see Appendix E). The pictures portrayed the following 30 activities:

1. setting a table
2. washing dishes
3. vacuuming the floor
4. ironing clothes
5. cooking food
6. watering plants
7. doing the laundry
8. painting pictures
9. liquid embroidering fabrics
10. sewing by hand
11. writing on paper
12. playing shuffleboard
13. playing cards
14. doing puzzles
15. riding an exercise bike
16. crocheting with yarn
17. playing ping pong
18. playing crokinole
19. sitting in a chair
20. watching television
21. dusting furniture
22. doing exercises
23. knitting with wool
24. playing pool
25. playing checkers
26. dancing with a partner
27. listening to records
28. reading books
29. visiting with someone
30. talking on the telephone

Data Collection

Data were collected in July, 1984. Initially, participants were to be interviewed in their own places of residence. However, pretesting indicated that some caregivers spoke for the participants even after the examiner had requested privacy and had reminded the caregivers that testing was confidential. Consequently, testing of the employed participants was done in a private room at their respective places of employment where they freely discussed

their places of residence with the examiner. Unemployed participants were interviewed privately in their own homes. Each individual was asked to participate in the study by the researcher saying, "NAME, I want to learn about what you do where you live. You can help me by answering some questions about these pictures such as if you like to embroider or if you like to play pool." (The participant was shown pictures of a male or female embroidering or playing pool. The gender of the participant in the picture was the same as the gender of the participant.) "Will you do this with me?" If the subject answered "Yes;" the training proceeded. If he or she answered, "No," the potential participant was thanked by the tester and left the room. Another participant was invited to partake in the study.

To train the participants, procedures A and B of the following three procedures were performed with each participant by using 10 trial pictures. If the participant did not respond correctly to 7 of the 10 trials, the task was terminated. The participant was thanked and both the participant and researcher left the room. If the participant responded correctly to seven or more of the ten trials, the task with the 30 activity pictures was performed. Three of the original 37 participants did not respond correctly to seven of the ten trials.

The task was introduced by saying, "NAME, I will show you some pictures." The task proceeded by asking about each of the 30 activities as follows:

Procedure A "NAME, here is a picture of NAME ACTIVITY. Do you like to NAME ACTIVITY?"

Procedure B "Do you NAME ACTIVITY here where you live?" The response was recorded (see Appendix G). Procedures A and B were completed for the 30 activity pictures before proceeding to Procedure C.

Procedure C The participant was shown 2 pictures at a time and the researcher said, "Which do you like best, NAME ACTIVITY or NAME ACTIVITY?" The researcher pointed to the activity as it was named.

When the paired comparisons were administered, half of the time the right-hand activity and half of the time the left-hand activity was mentioned first. Left-hand activity and right-hand activity were alternately mentioned and pointed to first. This was done because some participants were more likely to pick the first thing they heard or saw and others picked the last. By having left and right activities equally presented first, a response set was avoided. All 30 activities were included in Procedure C, where each activity was shown to the participant three times and appeared on both the left and right sides of the page. The activities shown were randomly paired on cards as described in Appendix F.

Procedure C minimized potential acquiescence because the participants chose one of two activities instead of answering "yes" or "no". Procedure C (choice of two activities liked best by the

participant) was expected to add further information regarding the degree of liking each of the activities. It could be compared to Procedure B (whether participant performed the activity where he or she lived) to determine the degree of agreement between activities participants actually performed and activities they liked to perform, if opportunities to perform preferred activities existed in their respective near environments.

Upon completion of testing the participants, the respective caregivers were interviewed by the researcher. (The case worker or one-to-one trainer were interviewed when the participant lived independently.) They were asked the frequency of activities performed by the participants, time spent by the participants at each of the 30 activities in the test and which activities the participants performed at least once per week.

The researcher documented observations on the type of facility, number of persons in the facility, location of the participants' rooms, programs provided to the participants, age, gender, and employment status for each participant.

CHAPTER IV

RESULTS

Three separate checks were used to establish the validity of the present instrument. Once validity was determined, the data were analyzed to identify any significant differences in activity of the ADD participants in their different residential facilities.

The data were also analyzed to determine relationships between the activity of ADD participants and variables including the gender of the participants, the location of the participants' rooms and the accessibility of a one-to-one trainer to the participants.

Validity Checks

By comparing Procedure A (whether participants liked or did not like an activity) with Procedure C (whether they preferred the liked or nonliked activity to another activity shown simultaneously), validity of the instrument could be determined.

To score this, the following was done:

- a) For Procedure A, the liked activities were separated from the nonliked activities for each participant and recorded.
- b) For each of the activities in Procedure A, whether the participant liked or disliked the activity, a corresponding preference score from Procedure C, ranging from 0 to 3, was

determined. For example, if playing pool was a liked activity twice in Procedure C, then playing pool received a score of 2. This was done for each subject. Each activity could be chosen a maximum of three times by each participant.

- c) For each participant the mean preference score of liked activities and the mean preference score of nonliked activities was calculated.

The number of the 30 activities that were liked or not liked by each of the 29 participants and the total number of times that each activity was chosen as preferable to another activity were recorded. For example, participant 1 liked 23 of the given activities. He or she indicated a preference for the activities 43 times out of a possible of 69 (23×3) times.

For the entire population, the liked activities were chosen an average of 2.38 times as often as the nonliked activities were, thus indicating that the participants' responses to Procedure C were relatively consistent with responses to Procedure A. This consistency of answering suggested that the instrument measured what it was intended to measure.

Validity was also checked by comparing Procedure A (what activities the participant said they liked) with the caregivers' responses to the question, "In your opinion, does the participant like the task of NAME ACTIVITY?" Of the 224 activities that the caregivers agreed the participants performed, disagreement between

the caregivers' and participants' reports on whether the participants liked the tasks they performed, occurred three times. Therefore, a 98.66% $\left[\frac{(224-3) \times 100}{224} \right]$ agreement existed between the caregivers' and participants' reports on activities liked by participants.

A third validity check compared the participants' and the caregivers' reports on what activities the participant performed an average of at least once per week.

The caregivers reported the total number of activities performed by all the participants were 238. Participants agreed they performed a total of 224 of those 238 activities, plus an additional 146 activities above the agreed upon 224 activities. That is the participants reported they performed a total of $146 + 224 = 370$ activities, which translates to a 58.33% $\left[\frac{(224 \times 100)}{384 = 224 + 146 + 14} \right]$ agreement with the caregivers' reports. The rationale for the higher number of activity reported by the participants will be discussed later in this paper.

With the participants' support of the caregivers' reports, and with the rationale given for the higher participants' reporting, along with the two validity checks cited earlier, evidence of instrument validity was indicated. Thus, the instrument may be a method of obtaining information from ADD persons about the relationships between the near environment and the frequency of activity performed, amount of time spent at activities, and number of types of activities performed by ADD persons. It should be noted

that the near environment as it has been described will be considered to be the residential facility. Henceforth, the term facility will be used.

The five treatments in the present study were the facility types including foster homes, community residences, independent living situations, a senior citizen facility and familial homes. The frequencies, times, and numbers of activities performed by participants relative to their respective living facilities were investigated. Additional variables that were considered to have a potential influence on the activity of the ADD population in different facilities were also analyzed. These variables included the sex of the participants, the location of the participants' rooms in relation to the main activity area of the facility, and the participants' accessibility to a one-to-one trainer.

Information on the frequency of activities performed, the time spent at activities, the existence of one-to-one trainers, the location of the participants' rooms, and the sex of the participants was collected from the caregivers in the respective residences, except in the independent living situations where the participants, the one-to-one trainer and the case workers provided the data. The information on the number of activities performed was obtained by questioning both the caregivers and the participants (see Appendix G & H for questionnaires). The variables were analyzed in terms of all the activities combined (referred to as overall activities),

and then they were separated into active and sedentary activities to determine whether significant differences in activity types existed in the facilities. The results of the analyses are reported in order of frequency, time and number of activities with each question exploring the relationship with the treatment and variable cited.

Relationship Between Facility and the Frequency of Activities

The participants compared in this study were from community residences for adult developmentally disabled persons, foster homes, a senior citizen facility, independent living arrangements and familial homes. The frequency with which the participants performed the 30 activities depicted in the instrument were analyzed statistically using the analysis of variance by treatment approach.

A significant main effect was evident in the frequency of overall activities performed per week in the different facilities, $F(4,24) = 7.712, p = 0.001$. Participants in the senior citizen facility performed a mean frequency of 93.500 activities per week compared to the mean frequency of 35.889, 47.889, 44.000, and 41.250 activities performed by participants in foster homes, community residences, familial homes and independent living situations, respectively. T-tests between group means indicated that the senior citizen facility was the significant differing factor (see Table 1). Other pair-wise comparisons were not significantly different.

Table 1.

T-Score comparison of mean frequencies of overall activities between the senior citizen facility and the four other facilities.

FACILITY	t	p
Foster Homes	5.381	.004
Community Residences	4.260	.009
Familial Homes	3.637	.015
Independent Living Situations	4.147	.010

Further analyses compared the frequency of activities in terms of sedentary and active activities. A main effect of the facility type was on the frequency of sedentary activities. $F(4,24)=18.245$, $p < .001$. Persons in the senior citizen facility scored a mean frequency of 66.500 sedentary activities per week. The next highest mean frequency of activities was a mean of 27.333 activities per person per week in the familial homes.

T-tests between group means produced results indicating the main differences existed in the frequency of activities by participants in the senior citizen facility (see Table 2). Other pairwise comparisons were not significantly different.

Table 2.

T-score comparison of mean frequency of sedentary activities between the senior citizen facility and the four other facilities.

<u>FACILITY</u>	<u>t</u>	<u>p</u>
Foster Homes	7.690	.001
Community Residences	7.202	.001
Familial Homes	5.635	.003
Independent Living Situations	7.148	.001

Statistics involving the frequency of activities by ADD persons included the comparison of active activities between participants from the different facilities. No significant difference was found, $F(4,24) = 1.268$, N.S.)

Relationship Between Facility and Time Spent Performing Activities

Information on the amount of time the participants spent at activities was collected from the caregivers in the respective residences. The participants themselves, case workers and trainers provided the required information for the independent living participants.

Analysis of variance indicated a single main effect of the facility type on the amount of time participants spent at overall activities, $F(4,24)=2.781$, $p < .05$. Participants from the senior citizen facility spent mean time of 90.997 hours per week at

activities. The participants from independent living situations, foster homes, community residences and familial homes spent a mean amount of time each week at activities for 30.672 hours, 37.921 hours, 52.483 hours, and 59.447 hours, respectively. The differences in time spent at activities were found between the participants from the senior citizen facility, $t(27) = 2.972$, $p = .031$ and foster homes and between the participants from the senior citizen facility, $t(27) = 2.871$, $p = .035$ and independent living persons.

Additional analyses were conducted to determine the existence of a main effect upon the time spent at activities by ADD persons in the different facilities by separating the activities into active and sedentary activities. No significant differences were found in the amount of time spent at active activities in the various residences, $F(4,24) = 1.050$, N.S. or in the amount of time spent at sedentary activities, $F(4,24) = 2.471$, N.S.

Relationship Between Facility and Number of Activity Types Performed

Reports on the number of activities performed by the participants were collected from the caregivers and the participants. For the sake of consistency, the caregivers' reports were used in the analyses because those were the reports used for information on time and frequency. Analysis of variance revealed no significant effect of facility type on the number of overall activities performed, as reported by participants, $F(4,24) = .37$, N.S. or the

number of activities caregivers reported that participants performed, $F(4,24) = 1.097$, N.S.

Further analyses included a search for differences in number of active and sedentary activities performed in the various facilities. No significant difference was found in the number of sedentary activities performed by participants from the different facilities, $F(4,24) = 1.651$, N.S., nor in the number of active activities performed by participants from the different facilities, $F(4,24) = 1.688$, N.S.

Relationship Between One-to-One Training and Activity

Areas examined in the analysis comparing the five participants who received one-to-one training with the twenty-four participants who did not receive the training were:

- a) frequency of sedentary activities performed per week,
- b) frequency of active activities performed per week,
- c) frequency of overall activities performed per week,
- d) time spent at sedentary activities per week,
- e) time spent at active activities per week,
- f) time spent at all activities per week,
- g) number of sedentary activities performed per week,
- h) number of active activities performed per week, and
- i) number of all activities performed per week.

T-tests for the one-to-one training variable indicated that two significant differences between the group receiving one-to-one training and the group not receiving the one-to-one training existed. A significant difference was that the group receiving one-to-one training performed a mean of 9.00 overall activities per week compared to the group without the training who performed a mean of 5.71 activities per week, $t(27) = 3.138, p < .01$. The second significant difference was that the group receiving the training performed a mean number of 5.40 active activities per week compared to the mean number of 1.92 active activities per week performed by the group without the training, $t(27) = 4.566, p < .001$. No other significant differences were found between the two groups when the remaining seven variables were analyzed.

Relationship Between Location of Participants' Rooms and Activities

T-tests were conducted comparing the activities of the twelve participants whose rooms were on the main level of their respective facilities with the activities of the seventeen participants whose rooms were off the main level of their respective facilities. The same variables examined for the one-to-one training were analyzed for room location. The amount of time spent on overall activities by the groups suggested a significant difference with the off-main level participants spending a mean of 63.36 hours per week and the main level participants spending a mean of 33.46 hours per week, $t(27) = 2.619, p < .01$.

A significant difference was found between the amount of time spent at sedentary activities between the two groups. Participants off the main level spent a mean of 45.06 hours per week at sedentary activities compared to the mean 25.69 hours spent by participants on the main level, $t(27) = 2.093$, $p < .05$. Participants off the main level spent a mean of 18.29 hours per week at active activities compared to the mean 7.78 hours spent by participants on the main level, $t(27) = 2.431$, $p < .05$. Analysis of the remaining six variables produced no significant results.

Relationship Between Gender of Participants and Activities

T-tests were conducted comparing activities by gender of the participants. Twenty males were compared with nine females for the same variables cited for one-to-one training. It was found that females performed active activities a mean frequency of 25.67 per week compared to a mean frequency of 15.00 active activities performed by males per week, $t(27) = 2.196$, $p < .05$. Females also performed a mean number of 4.00 active activities per week compared to a mean number of 1.85 active activities performed by males per week, $t(27) = 2.992$, $p < .01$. In comparing the overall number of activities, females were found to perform a mean number of 7.76 activities per week compared to the mean number of 5.65 activities performed by males, $t(27) = 2.187$, $p < .05$. No significant differences in activity between male and female participants were found in the remaining six variables.

Of the eleven significant differences that were identified in the study, three differences were specific to the activities of participants in the senior citizen facility. The remaining eight differences suggested relationships between activity and elements within the various environments, but not specifically to a type of facility/environment.

CHAPTER V

DISCUSSION

This study was intended to identify aging developmentally disabled persons; to explore the relationships between aging developmentally disabled (ADD) persons and their near environments through a literature search; to design a valid instrument to test the relationships between the near environment and ADD persons; to test the instrument; and to draw tentative recommendations for future studies on the subject.

The ADD population was identified in eight south central Manitoba rural municipalities. Much of the literature that explored the reciprocal relationships between developmentally disabled persons and their near environments focuses on developmentally disabled persons in general, but it also applies to the ADD population. An instrument to test the effects of the near environment on ADD persons was designed.

Validity Check Discussion

In order for the test results to be considered valid, the instrument was checked for validity by three separate tests, all of which supported the validity of the instrument. In the first test where activities that participants liked were compared with their

choices of activities, the participants chose activities they preferred 2.38 times as frequently as nonliked activities. The preference choices for liked activities would have been higher if some sets of choices had not been two activities the subject liked, but could only choose one. Conversely, the preference choices for nonliked activities would have been lower if it had not been for the fact that when subjects disliked both choices, they were obligated to choose one of two activities they did not like.

The second validity check compared the activities that participants said they liked with the caregivers' opinion of whether the participants liked those activities. In 98.66% of the cases, the caregivers reported that the participants liked all the activities the caregivers said the participants performed. This was possibly due to the fact that, by the caregivers' admission, few demands were placed on the participants to do activities they did not like.

The third validity check compared the participants' activity as reported by the participants and caregivers. A 94.12% agreement was found between what the caregivers reported and the confirmation by the participants that the participants performed those activities. However, the participants reported that they performed activities in addition to those reported by the caregivers. Twenty-seven of the twenty-nine participants said they performed more types of activities than the caregivers said. This consistent discrepancy may have been due to any of the following:

1. Participants said they did things, but the caregivers said they did them less frequently than once a week. The participants were asked, "Do you NAME ACTIVITY here where you live?" and the caregivers were asked whether the participants performed the activities in their place of residence at least once per week. The participants were not asked whether they performed the activity at least once per week because the questions were designed to be as short as possible to assure accuracy in answering and to maintain the participants' attention. In several cases the caregivers agreed that the participants did certain activities, but less often than once per week. In many cases, after the participants had been asked the question once and had been shown the first picture, they answered "yes" or "no" as soon as they saw the picture without waiting for the complete question to be asked verbally. Possibly a number of subjects only responded to the part of the question, "Do you NAME ACTIVITY?", even when the remaining question "here where you live?" was asked. Participants were prompted to answer the question after the whole question was asked regardless of whether the question had been answered upon sight of the picture.

2. Participants said they used to do some things and did not change their affirmative answers when they were asked a second time whether they did the activity in their current place of residence.

3) Participants said they were able to do the activity, but refused to elaborate on whether they performed the activity in their current residence.

4) Participants said "yes", they would like to do the activity, but would not admit to being incapable of or not allowed to do some things. For example, some participants said they read, but the caregivers said they could not read. Others said "yes", they would dance, but they did not admit that they were not allowed to dance, nor would they admit that they did not dance in their respective residences.

5) Participants performed the activity, but not within the walls of their near environment. In fact, several had physical exercise programs within a facility other than their place of residence.

6) Participants thought they did them when they were not capable of performing the activities, such as they thought they were reading when they were holding a book and "telling" their own story. Probably both participants and caregivers were accurate in their respective reporting because the participants agreed with the caregivers' reports 94.12% $\left[\frac{224}{238} \times 100 \right]$ of the time, and the additional activities that participants reported doing may well have been done by the participants, but not as per the criterion set out in the instrument.

For the purposes of this study, the three validity checks provided acceptable support for the instrument to measure what it was intended to measure.

Discussion of Results

By using the given instrument, this investigation concentrated on three areas: (a) the relationship between the near environment and the frequency of activities performed by ADD persons; (b) the relationship between the near environment and the amount of time spent performing activities by ADD persons; and (c) the relationship between the near environment and the number of different activities performed by ADD persons. The findings of the present study should be considered tentative and exploratory. Confidence placed in the results would increase with a larger sample. The results provided indicators of limited relationships between the facility and activity of ADD persons.

There was evidence of relationships between the facility types including other variables such as a one-to-one trainer within the near environment and the activity of the ADD participants. The following significant differences between groups were identified:

1. Participants from the senior citizen facility significantly performed the highest frequency of activities overall.
2. Participants from the senior citizen facility performed a significantly higher frequency of sedentary activities compared to the participants from the other facilities.

3. Participants from the senior citizen facility spent significantly more time at overall activities than participants from foster homes and those living independently.

4. Participants who received one-to-one training performed a higher number of types of overall activities compared to participants not receiving the training.

5. Participants who received one-to-one training performed a higher mean number of types of active activities than the participants not receiving the training within the different facility types.

6. Participants whose rooms were located off the main level of the residential facility spent more time at overall activities than participants whose rooms were located on the main level.

7. Participants whose rooms were off the main level spent more time at sedentary activities than those whose rooms were on the main level.

8. Participants with rooms off the main level spent more time at active activities than participants with rooms on the main level.

9. Female participants performed active activities more frequently than male participants did.

10. Female participants performed higher numbers of active activities than males performed.

11. Female participants performed a higher number of types of overall activities compared to male participants.

Relationships between the near environment and the frequency of activities performed by ADD persons were found in the difference in the frequency in overall activity and in the frequency of sedentary activities performed by participants from the various facilities. In both cases, the activity in the senior citizen facility differed significantly from the other four facility types. The participants from the senior citizen facility all lived away from the main activity area. They would go to the activity area, sit, watch the staff work, watch television, wait for a meal, sit down after a meal, and wait for someone to chat with them. In their rooms they would knit or watch television. A good deal of their time seemed to consist of going from one place of sitting to another, watching and waiting for something to happen to them. There was no evidence of differences in physical abilities or disabilities between the ADD participants in any of the facilities to account for the differences in activity.

The four participants in the senior citizen facility spent more time watching television, sitting in a chair and knitting with yarn, than any other group in other facilities.

The most frequently performed activities per week were visiting with someone, listening to records or tapes, watching television, and sitting in a chair. This was consistent with the amount of time spent at these activities.

One explanation for the popularity of those activities could be due to the ease of performing those activities in several areas of each facility type. Most participants could watch television in several rooms of the facility, they could sit in several places and they could visit in most areas of the facility. The first two activities could be done alone or in company of one or more persons, thus making them accessible activities at most times.

Given Bubolz's, et al., (1979) definition that the near environment consists of the natural, human constructed and human behavioural environments, one can reason that the human constructed environment consisting of rooms equipped with seating facilities and television, plus the human behavioural environment consisting of staff and other patients within the facility interacting with the participants, created a condition in which frequency of sedentary activity was facilitated.

The ANOVA indication that there was a main effect between the facility and frequency of overall activities and sedentary activities could be accounted for by the fact that the caregivers' reports on the frequency of the activity of participants in the senior citizen facility was based on all their waking hours because they spent all day in their residence as opposed to persons from other groups where at least one and usually more participants were employed outside the home. Consequently, reports on the senior

citizen facility participants were based on a longer period of time than reports on most participants from other facilities. If that was the case, one would expect to find a main effect between the facility and the time spent at activities which was the case for overall activities, but not for sedentary activities.

Participants from the senior citizen facility spent more time at overall activities than other participants, but the significant difference was limited to a difference between senior citizen facility participants and participants living independently and in foster homes.

If the argument that senior citizen participants had a higher frequency of overall and sedentary activities because they spent more time in the facility, then one would expect significant differences in frequency. The absence of the parallel in time spent at sedentary activities, plus the difference in the significant level between the frequency of overall activities performed ($p < .001$) and the significance level of time spent at overall activities ($p < .05$) may be explained as follows:

- 1) Earlier, it was suggested that the senior citizen facility participants spent considerable time going from one place of sitting to another. That might also be an indication that they did not stay with a task for long. Thus, they would do things often, but briefly with the result that the frequency of activities would not be proportionate to the time spent at activities.

2) Participants in the senior citizen facility had no access to any programming and they had all day to perform activities of their own choice, or at least perform activities that required no direction and supervision of activity. Their activity choices were evident in their high number of sedentary activity and were witness to minimal intervention by staff or other persons encouraging additional activity types.

The participants who lived in the senior citizen facility spent all day in the facility, whereas all the other participants, with the exception of one foster home resident, and two familial home residents were employed during the daytime. These differences could be controlled for in the testing situation by taking data from time samples. That is, information on activity could be collected for the period when all the participants had their leisure time, such as from 5:00 p.m. to 9:00 p.m.

Part three of the question asked whether the near environment is related to the number of types of activities performed by ADD persons. No significant differences were found in the number of activities in which ADD persons participated in the various facilities. Although participants in the senior citizen facility spent more time at overall activities and performed overall and sedentary activities more frequently than participants from other facilities, the variety of things they did was not significantly different. The senior citizen facility participants were not

exposed to more activities than participants from other facilities; thus the variety of the types of activity they performed was limited by the lack of opportunity to do more.

Four participants (1 male, 3 female) who received the one-to-one training were from community residences and one male participant was from an independent living situation. The differences between the group receiving one-to-one training and those not receiving the training were in that the persons receiving the training scored significantly higher in the number of overall and active activities. Since ANOVA indicated no significant differences in number of activities when the variables were the residential facility types, it suggests that training was the variable responsible for increased variety in activity in the ADD population.

Explanations for the significant differences in overall and active activities between participants receiving training and those not receiving the training are as follows:

1. The one-to-one trainers spent a minimum of one hour per week with each participant receiving the training. In that time, the participant and trainer would be involved in several not usually performed or new activities. This increased the number of reported activities in the testing instrument. The caregivers reported that most of the activities done with the one-to-one trainer would not be performed by participants in the absence of the trainer.

2. When trainers were available, the Individual Program Plan (IPP) process would place expectations on the trainer to provide activity to the participants. Thus, the participants were actively encouraged to take part in activities such as domestic activity, physical fitness activity, table games or handiwork for at least one hour per week by a one-to-one trainer hired specifically to teach the participants skills specified by Individual Program Plans.

Similar expectations were not placed on caregivers in the absence of a trainer because the caregivers' time was consumed with numerous other duties. Consequently, activity expectations were higher when a trainer was available.

It is a requirement of the Manitoba Government, Community Services and Corrections, that Individual Program Plan (IPP) meetings are held regularly for developmentally disabled persons in community residences, foster homes and in independent living situations under the supervision of government services. The IPP meetings attended by the caregivers, CAMR board members, community services worker for mental retardation, and participants plan for teaching of skills, medical appointments, and other short and long term goals relevant to the individual client. Differences between the residences receiving one-to-one training were not compared to those without one-to-one training because many participants in the community residences had received some one-to-one training prior to testing, but training had been discontinued because of staffing resignations.

Support for the theoretical assumption of the ecosystem approach that interaction between individuals and their respective environments consisting of the NE, HCE and HBE was found. That is, interaction between the one-to-one trainers who were a part of the HBE and the participants was reflected in that those participants performed more activities than participants not involved in such an interaction.

The location of the participants' rooms was examined to determine whether a relationship existed between activity of ADD participants and their room location. Persons were assigned their rooms at random. Whenever someone moved into a facility, they would be assigned the room that had been vacated. Movement by the residents in a facility appeared to occur only in order to have roommates of the same gender and in one facility every two residents shared a bathroom. In that case, the residents sharing the bathroom were of the same gender. The location of the participants' rooms did not appear to have any bearing on the number of activities performed or the frequency with which activities were performed, but the participants whose rooms were off the main area of the facility scored significantly higher in the amount of time spent at overall, active and sedentary activities.

The finding that the participants off the main level of facility spent significantly more time at activities was opposite

to what was expected by the researcher, based on the idea that when persons see activity and are exposed to it, they are more likely to take part in it. Possible explanations for the findings of this study are as follows:

1. Persons whose rooms are located away from the main areas of activity made an effort to be involved and left their rooms to go to the activity areas so as not to be left out.

2. Persons with rooms on the main area may have derived enough satisfaction from seeing the activity, knowing what was going on and not feeling the need to partake in the activities because they already felt as though they were a part of what was going on merely by being present.

Frequencies, time and number of activities were analyzed by gender of the participants. It was found that females performed active-activities more frequently than males; females performed a higher number of active activities and more activities overall than males did. The fact that many of the activities were domestic may account for the higher frequency and number of activities performed by females because more expectations were placed on the females than on the males to do domestic chores. One caregiver in a community residence of ten adults said, "I like to have the girls do housework. The boys don't have to." The fact that there were no significant differences between the male and female participants in the number of sedentary activities performed supported the

explanation of increased domestic tasks performed by the female participants. Considering that these participants grew up at a time when sex roles were clearly delineated, they would have learned to perform activities related to sex roles. Several male participants said, "I've never tried that", "my mother did that", or "Mrs. _____ does that" when they were shown some activities such as knitting or sewing. This occurred despite the fact that the illustrations shown to the males depicted men performing the activities.

Although an extensive literature search did not produce a study similar to the present one, it did suggest that programming was more important than the physical near environment in determining the activity of ADD persons in their respective residences, thus indicating a tentative relationship between the activity of ADD persons and the human behavioural environment, instead of the physical environment and activity.

Literature supporting that premise reveals that a paramount factor in achieving maximal development in developmentally disabled persons is program design, staff size and commitment instead of the building structure (Tremonti and Reingruber, 1977); that the staff plays the largest role in supporting behaviour by daily programming and interaction (Robinson, Thompson, Emmons, Graff, 1984); and that planning and supervision are required for active activity to occur (Butler and Bjaanes, 1977). Bjaanes and Butler

(1974) found that the differences in the way time was spent in various community care facilities were functions of the environmental components including physical, supportive, attitudinal and behavioural elements.

From the lifespan perspective, ADD persons adapt to their settings based on previous experience. Since most of them previously led a life of dependency, little adjustment is required when they move to their current residences. Furthermore, no adaptation is required, no expectations are made and as a result, they are not dissatisfied with the environments (Wilson, 1981). The absence of a need for adaptation and the absence of dissatisfaction could be equated to what Perin refers to as a congruent environment. The ADD persons got what they expected from their near environment and their expectations were low due to minimal previous experiences.

This might account for the generally high level of sedentary activity by the participants in all the dwellings. They had a lifetime with few expectations placed upon them, no initiative was required, and much was done for them. With respect to the literature review, ADD persons had fewer adjustment problems at an old age than did the nondevelopmentally disabled population. Many of the participants had experienced institutional life in the past. Cotten, Sisson and Starr (1981), noted that previously institutionalized ADD persons appear to adapt to congregate or group living situations more readily than other nondevelopmentally disabled persons, but equally impaired peers.

There is clearly a need for additional research regarding the impacts of the elements in the near environment on the activity of the ADD population. Identification of the ideal amount, frequency and types of activities and within what environments they occur should support the creation of settings that would promote desirable activity on an individual basis in terms of amount, frequency and time spent at activities. There is a need for further research regarding the impacts (or lack of impacts) of various community residential facilities of developmentally disabled people (Willer and Intagliata, 1982).

In conclusion, it is reasonable to suggest that the differences in activity within different facility types appears to be related to the environment relative to the human element. Evidence of increased number of activity coinciding with the presence of one-to-one trainers and with expectations placed on participants suggests that human interaction within the facility relates to the activity of ADD persons.

CHAPTER VI

SUMMARY AND CONCLUSIONS

An instrument was developed to measure the relationship between the near environment and the activity of ADD persons. To achieve this, a pictorial questionnaire was developed for ADD participants and a verbal questionnaire was developed for the caregivers of the ADD persons. Twenty-nine participants and their caregivers or case workers or one-to-one trainers completed the study. The participants in the study were from a variety of community residential facilities in southern Manitoba.

Analyses of the collected data indicated the existence of differences in the frequency that activities were performed and in the time spent at activities by participants in the various facilities with the senior citizen facility being the main differing treatment. Differences were also evident in relation to the location of the participants' rooms, access to a one-to-one trainer and the gender of the participant.

Differences were found in eleven of the areas that were examined. The frequency of the performance of overall and sedentary activities per week differed among facilities with participants in senior citizen facilities scoring the highest frequency of activities performed; the time spent at overall activities per week

differed among facilities with participants in the senior citizen facility scoring the highest amount of time spent.

Variables other than the facility were shown to make a difference in the activity of ADD participants. Participants receiving one-to-one training differed in the number of overall and active activities performed per week from those who did not receive the training; participants whose rooms were located off the main level of activity spent more overall, sedentary and active time at activities per week than participants with rooms on the main level; and females performed a larger number of overall and active activities per week than males did.

There are limitations to the study and some suggestions for future research. One limitation was the small sample included in the study. Although the initial intention was to include all ADD persons from the geographic region identified, the study was limited to participants with receptive language skills. Thus, persons who were unable to comprehend what was expected of them were ineligible for the study. A larger sample from an extended geographical region would indicate whether the results are peculiar to a small population or whether they would be consistent with the ADD population outside southern Manitoba. The ADD population not included in this study was the population from large institutions. Comparing the institutional ADD population with the community-based ADD population may produce more comprehensive results.

A second limitation in the study was the randomization of activity sets from which participants made choices. In order to have more absolute results, the activity pairs should have been as unlike as possible. For example, instead of pairing two domestic activities such as vacuuming and dusting, it would have been better to pair unlike activities such as vacuuming with watching television. That way, an increased probability of the likes and dislikes of the participants would have become known.

Despite the limitation of the present study, it offers avenues for future research in activity of ADD persons relative to the near environment. The present instrument which was found to be valid in terms of measuring the relationship between the near environment and the number of types of activities performed, frequency of activities performed, and time spent at the activities, may be one method of obtaining more accurate information from ADD persons than previous methods have been able to provide. This could be done by adapting sketches to depict more specific tasks such as domestic jobs, self-care skills or social activities outside the residence. The format of the instrument would be similar to the present instrument but the sketches would vary depending on the nature of the activities being examined. Then the comparisons would be made between groups and matched for facility types, including the various environmental elements.

The testing instrument offers methods of testing other areas of preferences and choices for developmentally disabled persons. They could include choices of vocations, other leisure and recreational activities and tasks as well as choices of desired objects by changing the types of sketches to meet the needs of the individual testing requirements. This would afford persons in the field including policymakers, caregivers, social workers and family members an opportunity to learn more about ADD persons and their preferences choices in areas such as employment, community involvement or residential placements.

In the recent past there has been much discussion about the ideal number of persons in a facility for developmentally disabled persons. Currently, this concern is branching into consideration for appropriate housing for ADD persons. It has been said that an array of facilities should be available and those facilities should consider, in their design, the human element to promote the activity desired and required by the population they accommodate. Learning to live means learning to manipulate the environment (Sokoloff, 1976). What better place to learn to live in the community than in a community which offers alternatives in which a suitable living environment can be found for an ADD group of heterogeneous individuals who deserve to remain individuals?

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University of Nebraska at Omaha.

Appendix A

Letter requesting permission



UNIVERSITY OF MANITOBA

FACULTY OF HUMAN ECOLOGY
Department of Family Studies

Winnipeg, Manitoba
Canada R4T 2N2
(204) 474-9225

April 17, 1984

John Robson:
Regional Director
Community Services & Corrections
Upper Street
VILLAGE LA PRAIRIE, Manitoba

Dear John:

In order to learn more about how the near environment affects the frequency, variety and amount of activity of aging developmentally disabled persons, it is necessary to conduct a study which involves having ADD persons perform certain tasks.

This letter is a request for you to grant permission to do the following: (1) allow the testing of aging developmentally disabled (ADD) persons living in south-central Manitoba, including those individuals who are under an Order of Supervision to the Public Trustee, and (2) to allow the use of Manitoba government files to identify and locate the ADD individuals in south-central Manitoba.

We plan to conduct this study in residences of MR persons aged 50 years and over to obtain information on the effects of housing on activity. Activity is taken to include domestic, active and passive behaviours other than self-care and eating rituals. The testing consists of having the ADD individuals choose pictures from groups of three pictures representing activities they like to do and, in fact, do in their places of residence. The information received will be kept in confidence. No names will be included in any reports.

Results from studies such as this can help to plan for suitable housing for the ADD population. In view of the thrust to deinstitutionalize persons from the Manitoba School, and in view of the increase in the ADD population, I believe that this is an important study, and studies such as this can provide information necessary to avail Manitoban persons of more appropriate residential facilities.

Yours truly,

Eleanor Chornoboy
Graduate Student

W/lt

Appendix B

Letter to parents and caregivers



Dear Parents/Caregivers:

In order to learn more about how the houses that aging mentally handicapped people live in is related to their activity, I need your help in a study which I will be conducting in residences with aging mentally handicapped persons. I want to learn if there is a relationship between the kind of house that they live in and what kinds of activities they perform such as playing checkers, washing dishes or watching television, how often they do those things and how much time they spend doing them. If you and the aging mentally handicapped person(s) living in the same house with you are willing to participate in this project, I will come to your home to conduct the study and I will be available to help you with any questions that you might have about this research.

The study will involve having the aging mentally handicapped person(s) perform some tasks with me on an individual basis. The tasks will consist of me showing the aging mentally handicapped person(s) sketches of people performing activities such as watching television or playing checkers and they will be asked whether they like to do the activity and whether they do it in their home. The second part of the study will consist of showing the person(s) two pictures at a time and asking them which one they like best.

The third part of the study will consist of asking you whether the aging mentally handicapped person(s) performs the various activities, how often they do them, how much time they spend doing the activity and if you think they enjoy doing the task. I will be available to help you with any questions that you might have about this part of the study. This should take about 10 minutes to finish.

Your answers are important in helping us to learn about aging mentally handicapped people. Results from studies like this can help to make plans for suitable housing for aging mentally handicapped persons. Your participation in this study is voluntary, but no one knows better than you do, how important it is to provide good homes for aging mentally handicapped people. However, if you choose not to accept this invitation to participate in this study, please be assured that you will still continue to receive the services that you have been getting in the past. I also want you to understand that if you have started in the study, and do not want to finish it, you are free to withdraw and there will be no change in the services you have been getting.

I have received permission from the Regional Director of the Department of Community Services and Corrections to conduct this study. I have assured him and I am assuring you that the information I receive from you and the aging mentally handicapped person(s) will remain confidential. That is, I will report on the information I receive, but there will be no way in which the information can be connected with any individuals. No names will be put into any reports.

After the completion of the study, a report, which will include general information about aging mentally handicapped and their activities in their residences, will be avail-

Letter to: Parents/Caregivers

Available to persons upon request.

If you have any questions about this letter, please feel free to call me at 822-
74 (after 4:30 p.m.)

Thank-you kindly for your time and your help.

Sincerely,

Eleanor Chornoboy

/s/

Appendix C

Consent Form for Participants

CONSENT FORM

90

I understand that I am invited to take part in a study to learn about how the houses in which aging mentally handicapped live relate to what kinds of things they do such as playing checkers or washing dishes, how often they do those things, and how much time they spend doing those things. I will be shown pictures and I will tell if I like to do those things shown on the pictures and I will pick the ones I like the best. This will take about ten minutes.

I do not have to take part in this study. I am volunteering to do this, and I can quit any time I want to. I know that even if I do not take part in this study or if I do not finish it, I will still get all the services I have received in the past. How I answer the questions, or even if I do not answer the questions will not cause anything to happen to me.

All the things in this study that I say to the researcher will not be told to anyone else. No one will be able to connect my name with anything that will be written about this study.

It is with this understanding that I agree to take part in this study.

Date

Signature of Subject

Appendix D

Consent Form for Caregivers or Parents

CONSENT FORM

92

I understand that this study is a method of trying to learn about how the houses in which aging mentally handicapped live is related to the types of activities they perform, how frequently they perform the activities and how much time they spend performing the activities. I know that this is not a method of evaluating the quality of care on the facility.

I will be answering questions concerning the aging mentally handicapped person(s) who live in the same house as I do. The answers will be regarding if the person(s) perform certain tasks such as play checkers or wash dishes, how often they perform the tasks and how much time they spend doing the tasks. This will take about ten minutes of my time.

I have been given to understand that the information I will provide will be confidential and neither I nor the residence in which I live and/or work will be identifiable through any reports. Only the researcher will know the names of the persons and the residences.

I will partake in the study voluntarily and I can stop taking part in the study at any time without completing all the questions. If I withdraw from the study, I will still receive the same support services that I have received in the past, for the care and supervision of the mentally handicapped person(s) living in my home or in this residence.

It is with this understanding that I consent to partake in this study.

Date

Signature of Parent or
Caregiver

Appendix E

Testing Instrument



TEST



TEST



TEST



ME Chubb

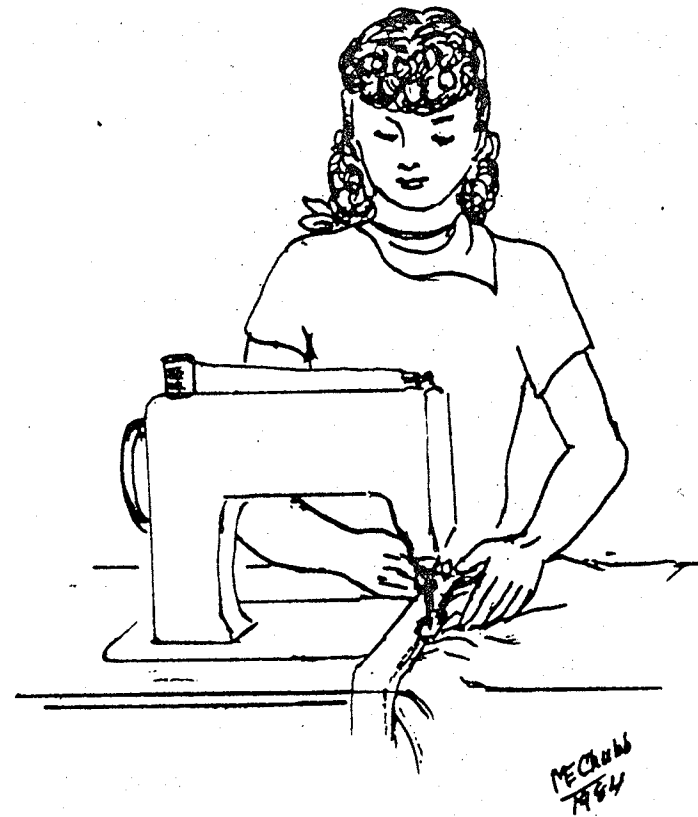
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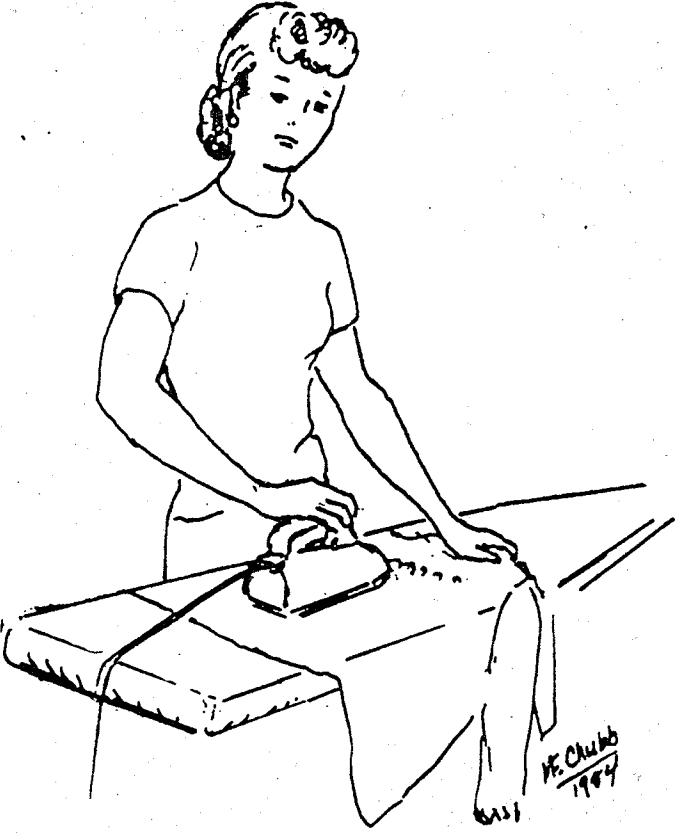
ME Chubb

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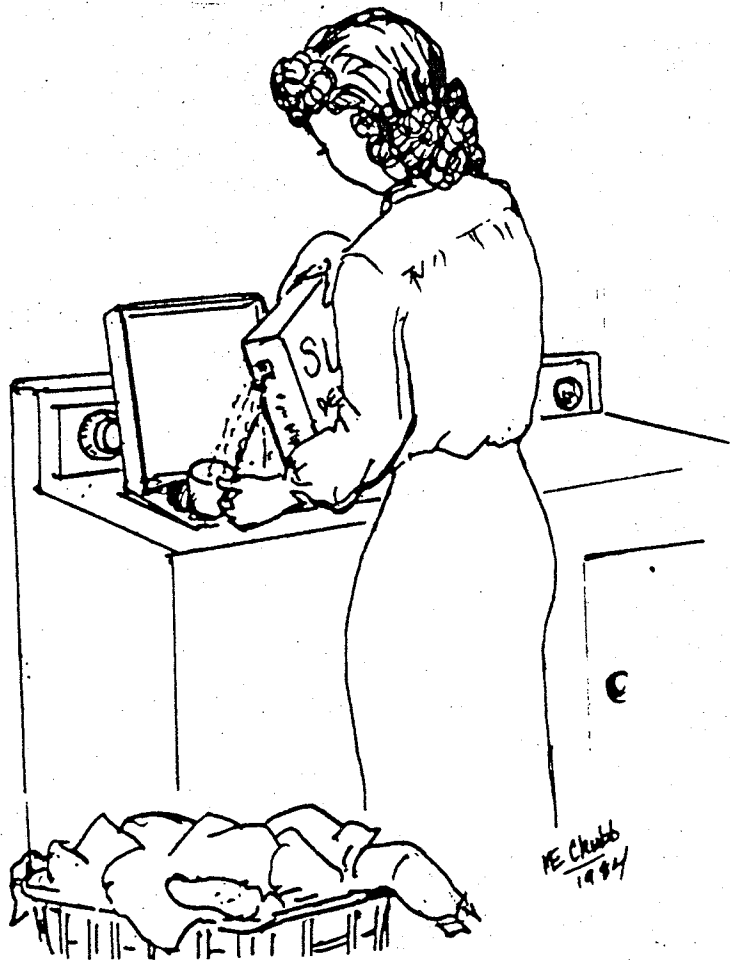
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Mc Chubb
1984



Mc Chubb
1984



ME Chubb
1904



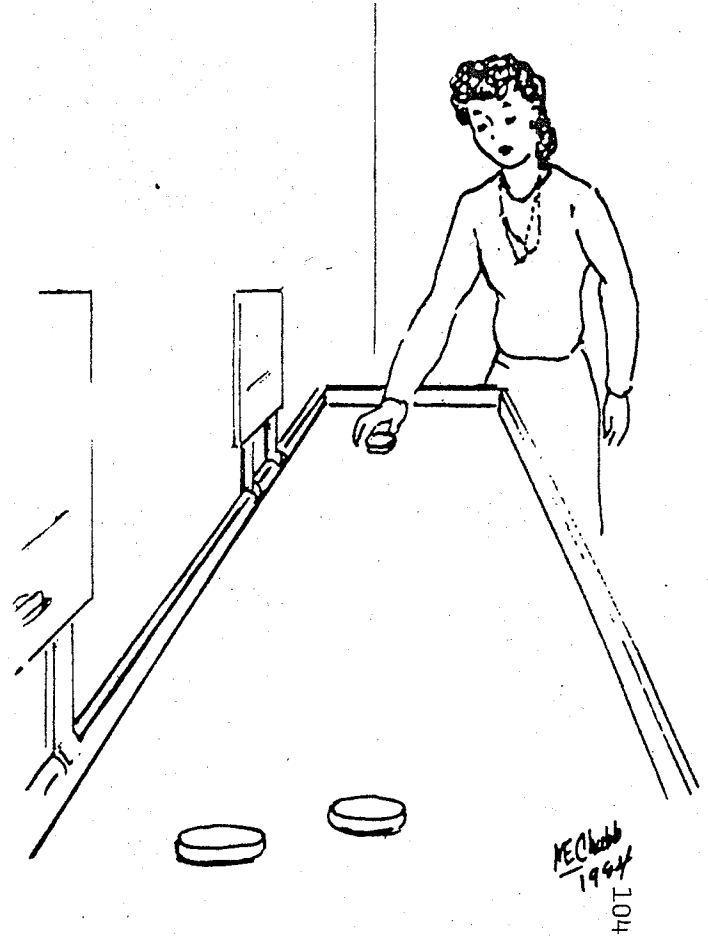
ME Chubb
1904

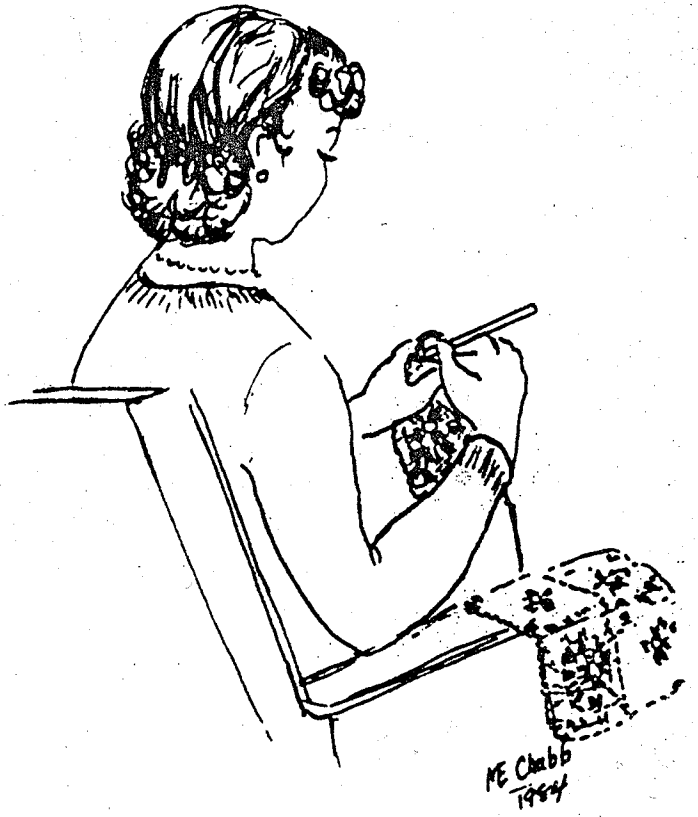
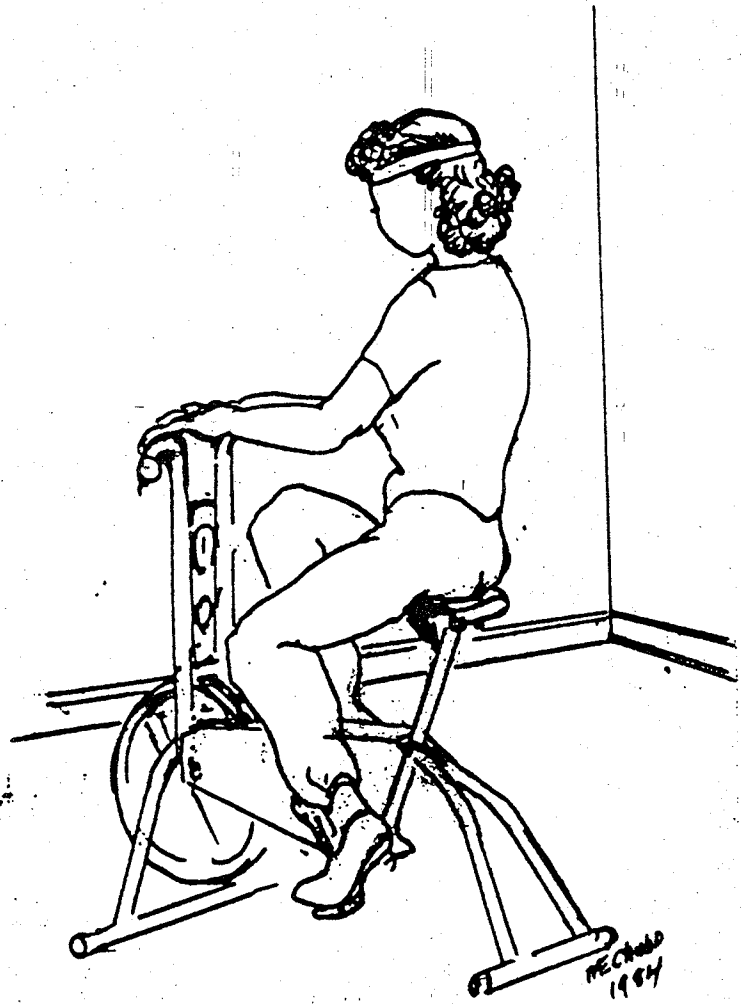


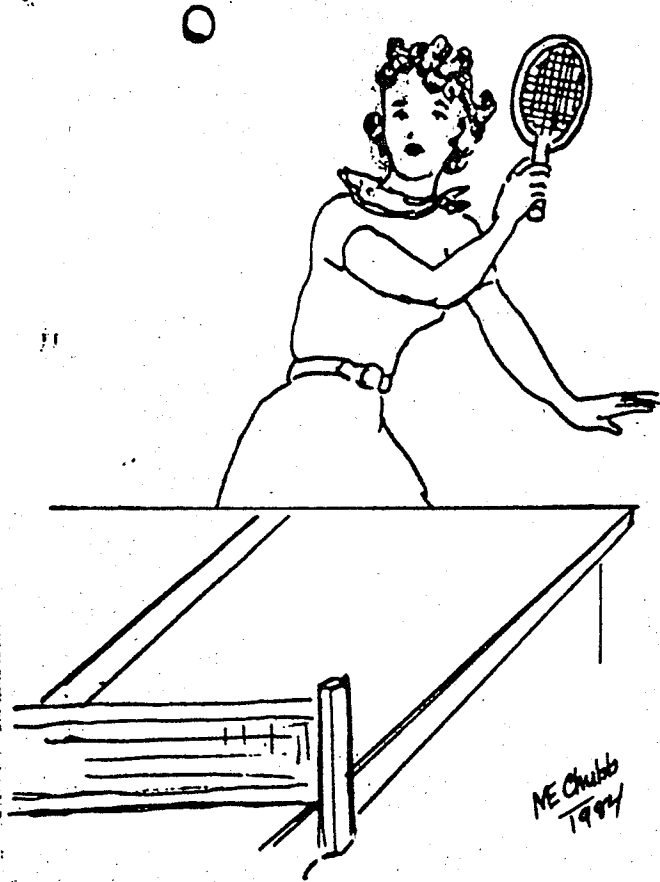
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1904



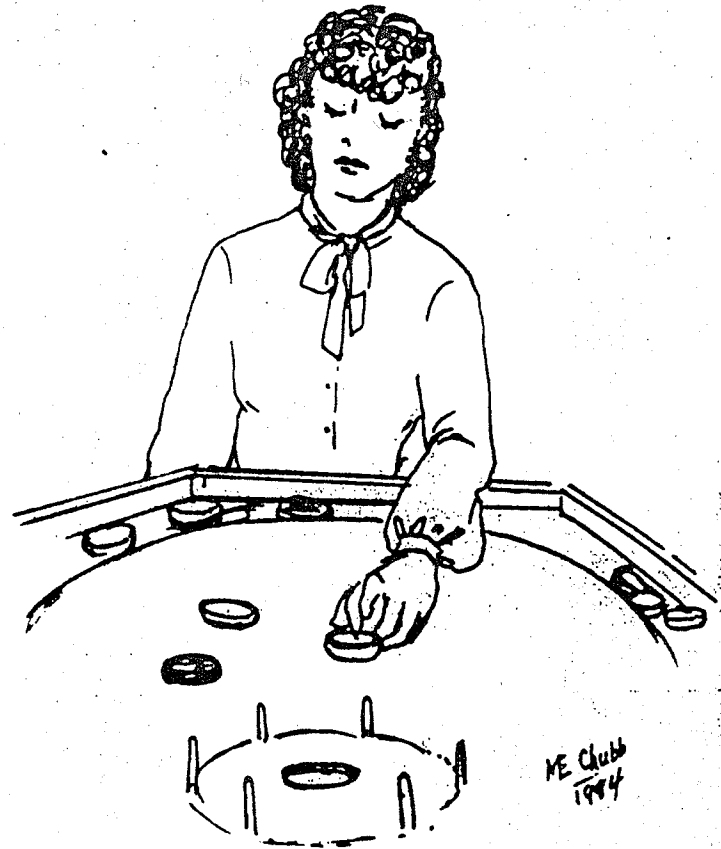
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1904







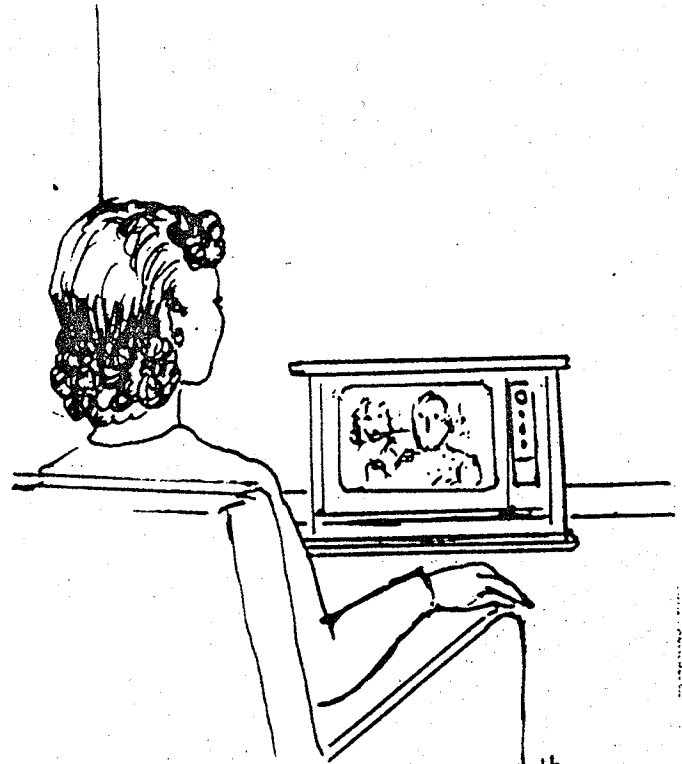
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1994



ME Chubb
1994



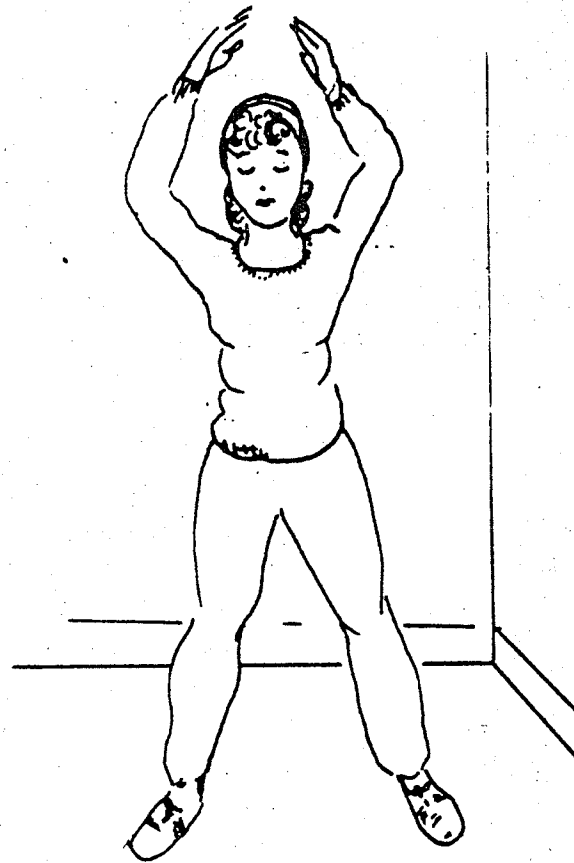
M.E. Chubb
1994



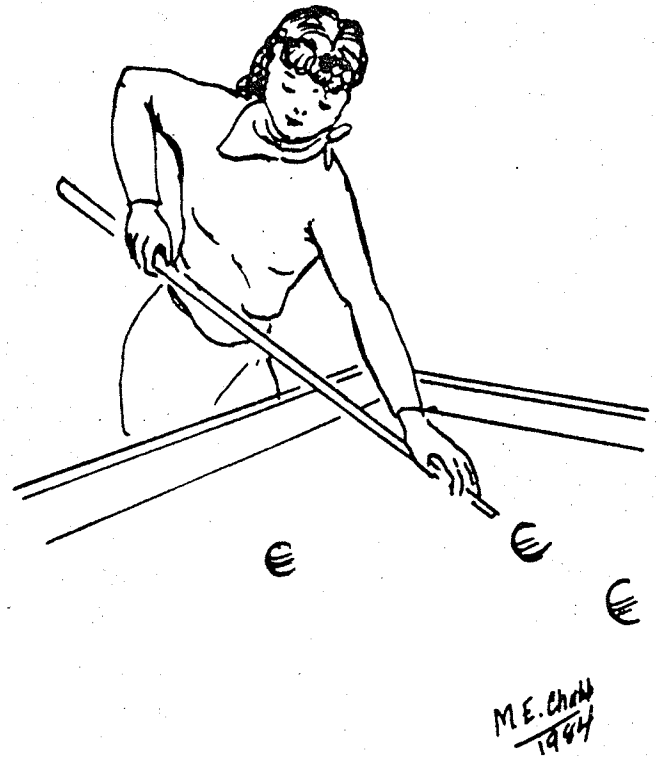
M.E. Chubb
1994

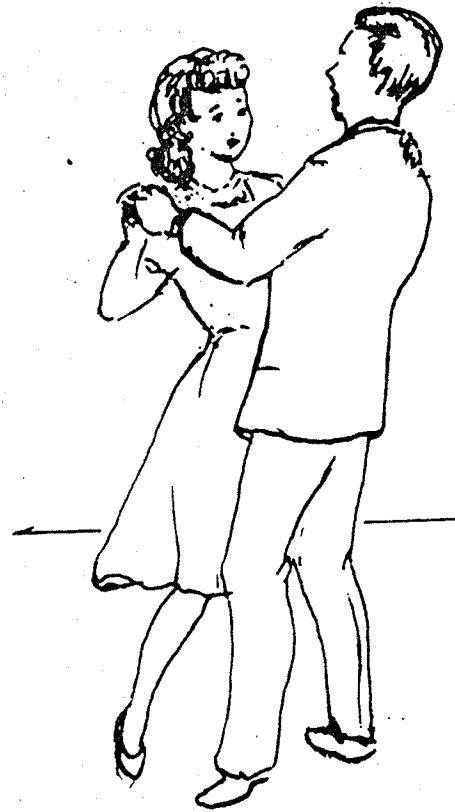
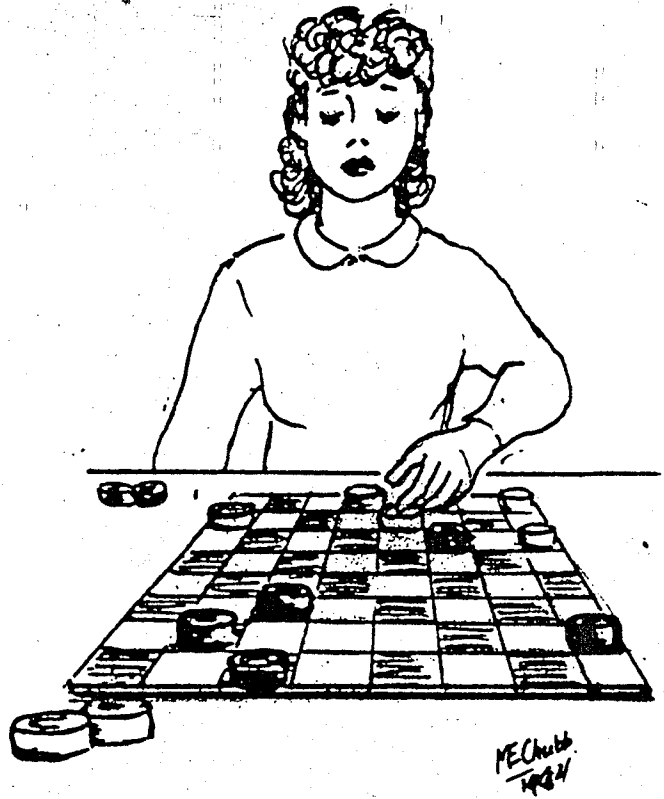


ME Chubb
1984



ME Chubb
1984









M. Chubb
1994



M. Chubb
1994

TEST



ME Chubb
1994

TEST



ME Chubb
1994

113

TEST



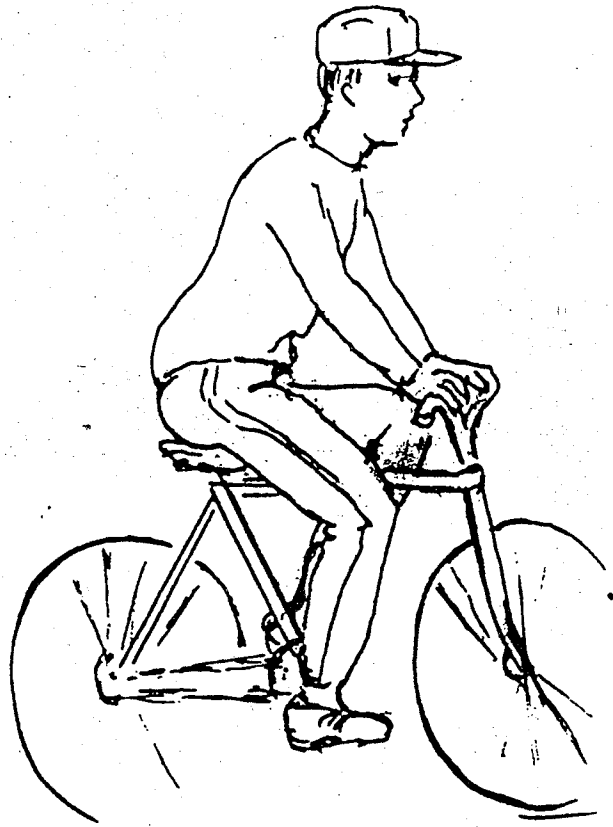
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1984

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MECH
1984
SHEPHERD

TEST



MECHAM
1994

TEST

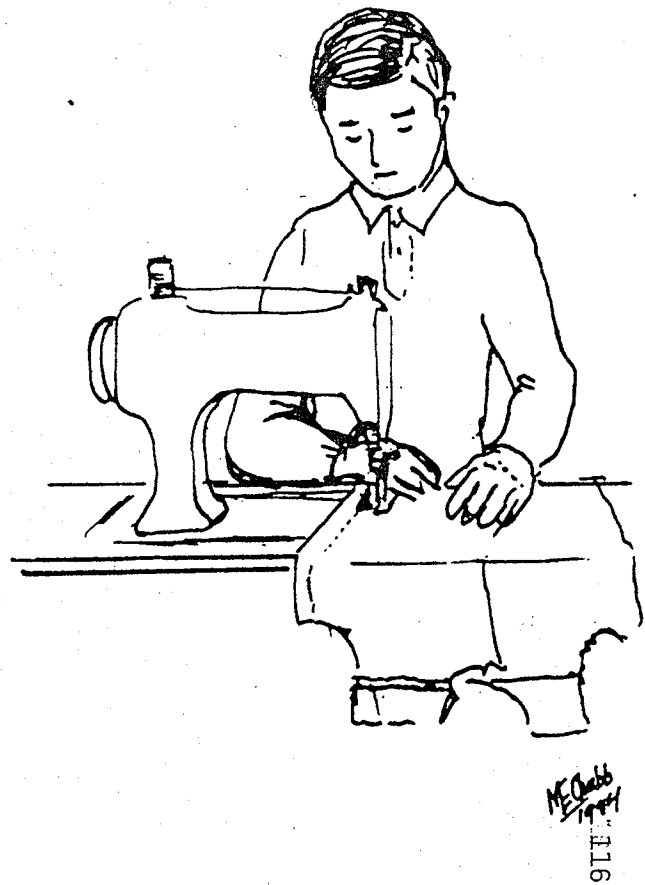


MECHAM
1994

TEST



TEST

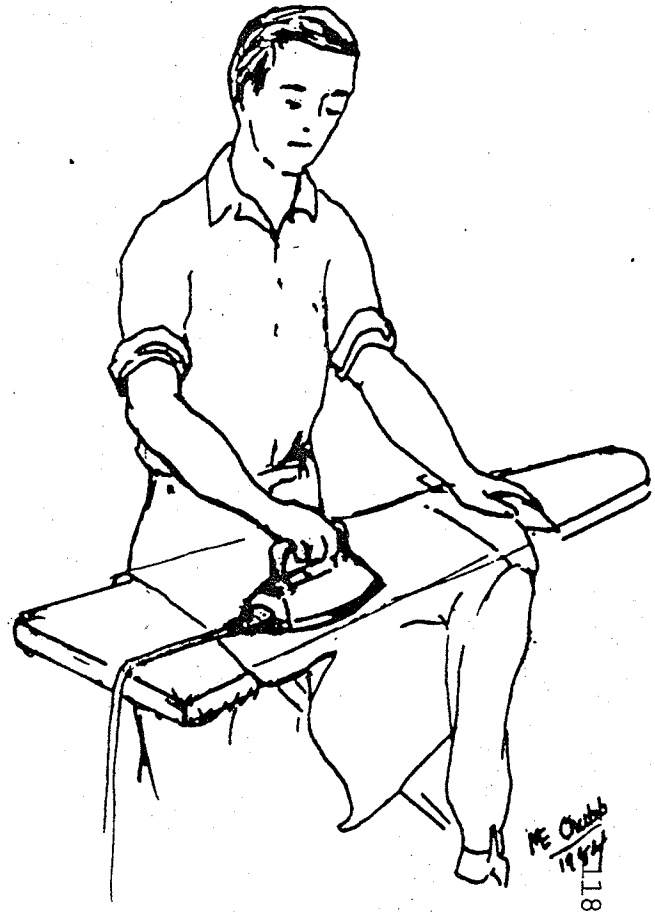


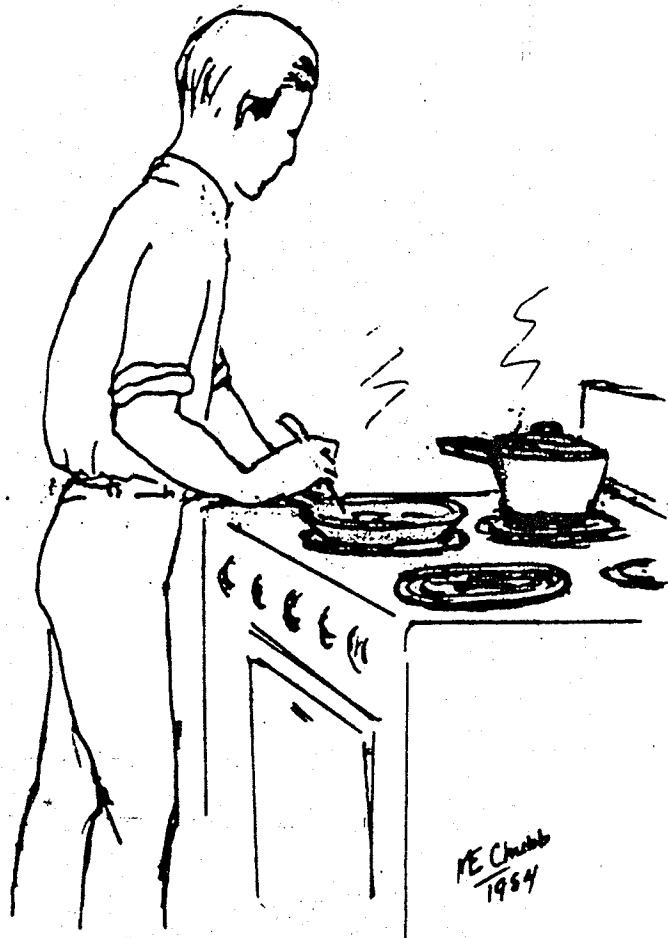


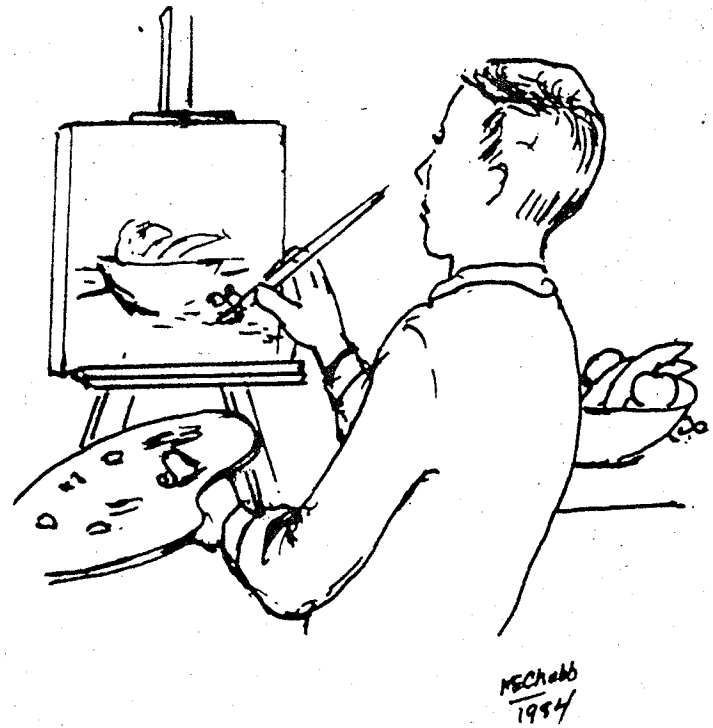
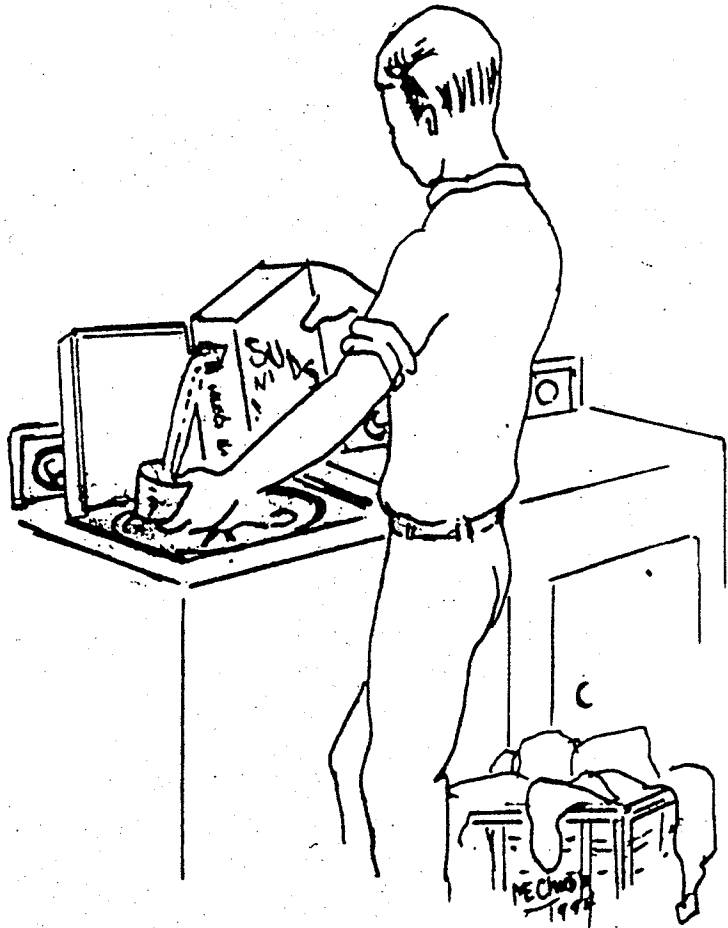
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1994



FE Chubb
1994

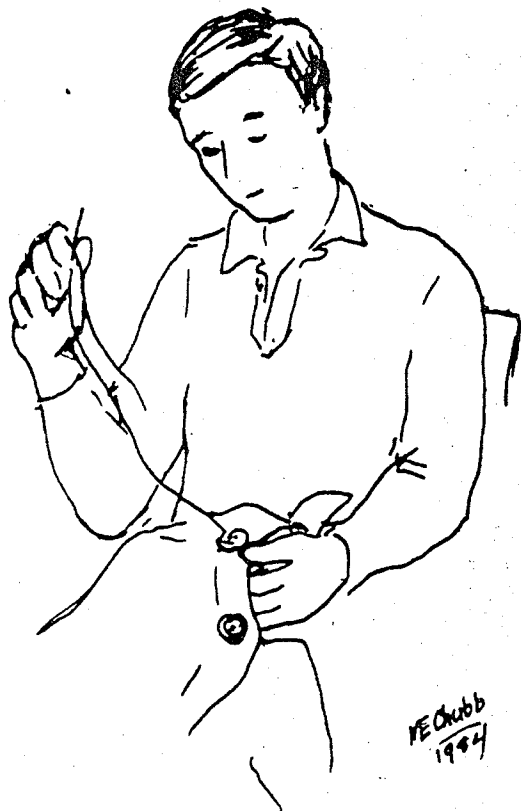




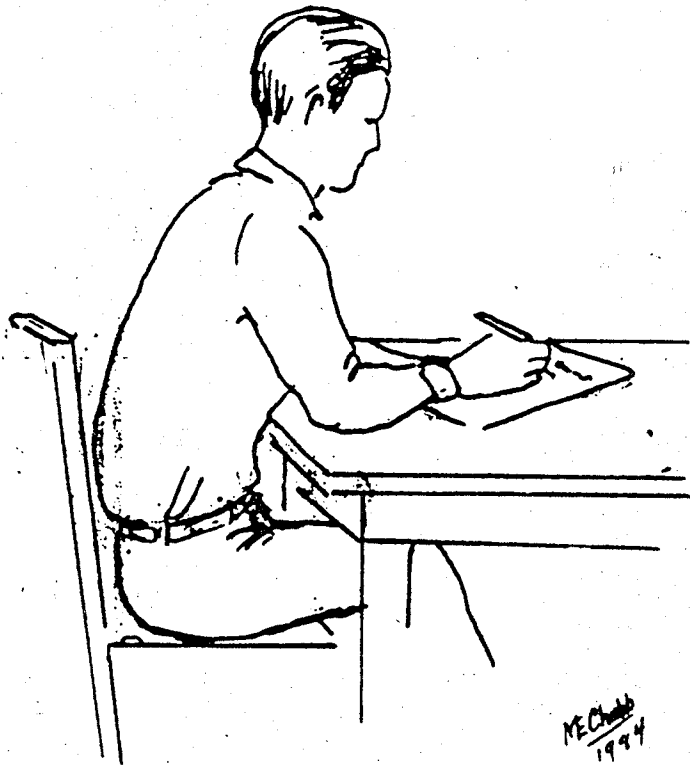




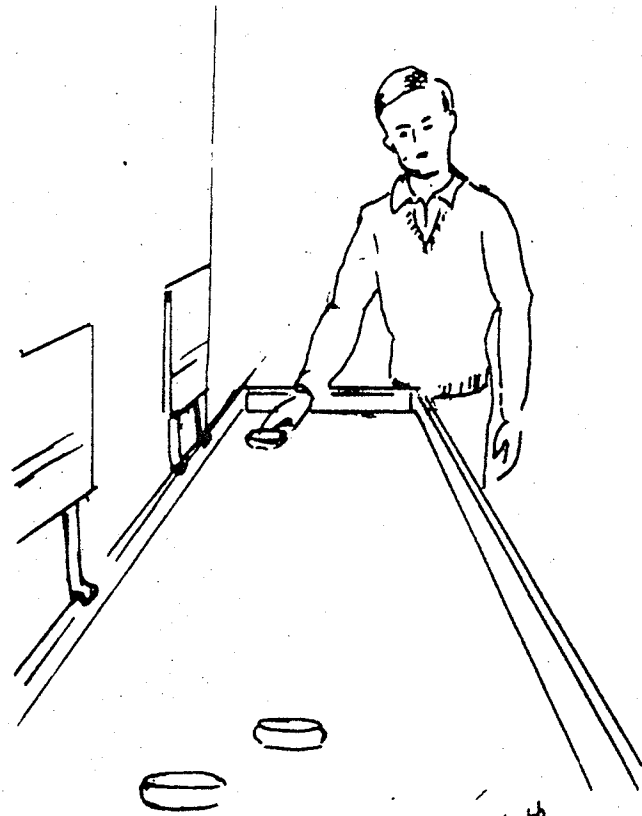
RE Chubb
1984



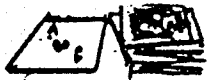
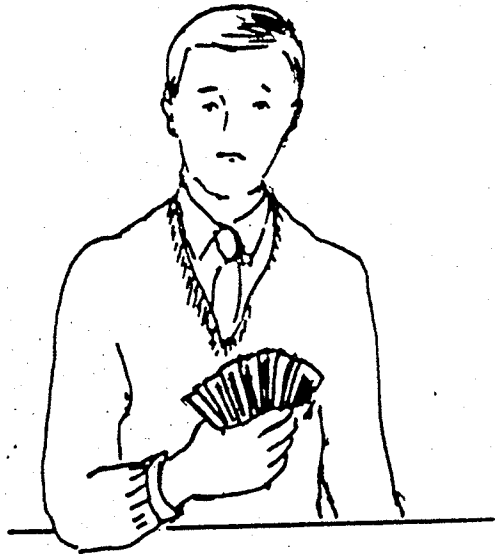
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1984



ME Chubb
1984

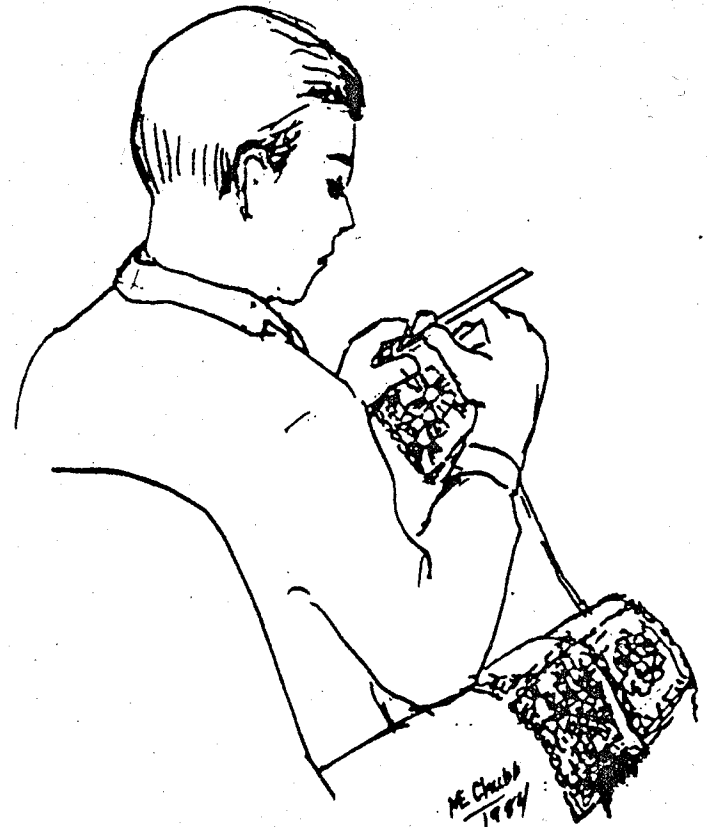
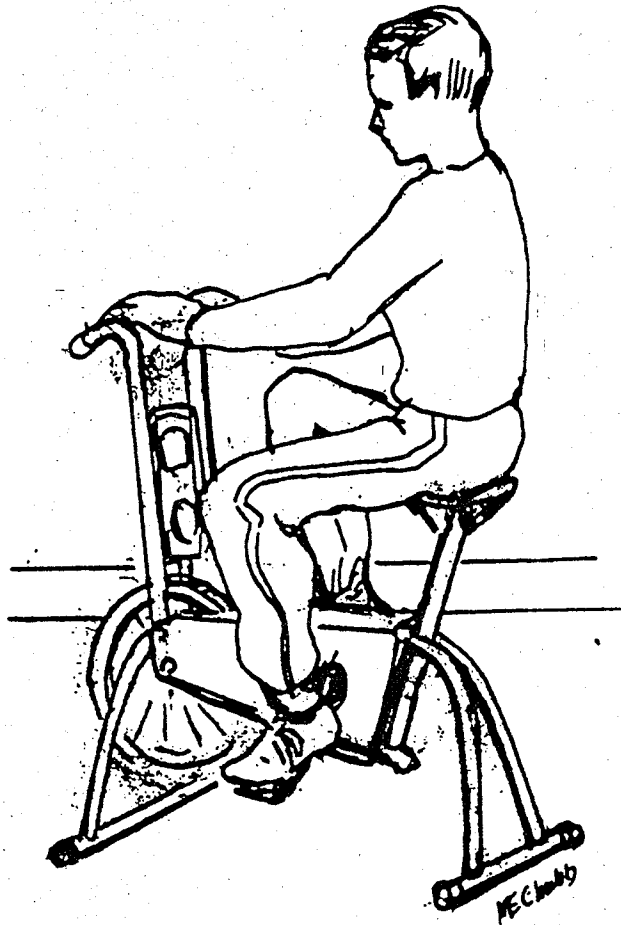


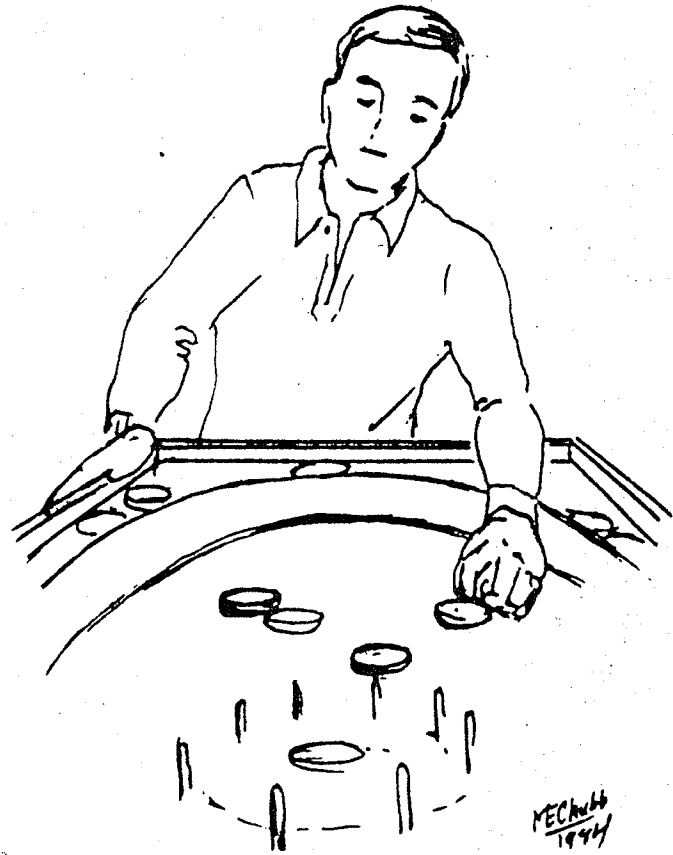
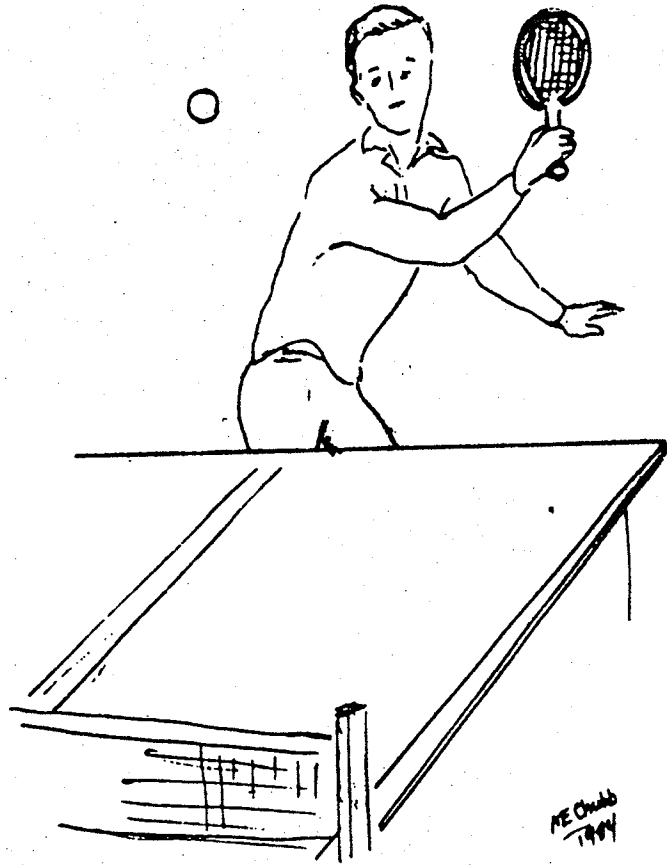
ME Chubb
1984



KE CHAN
1994

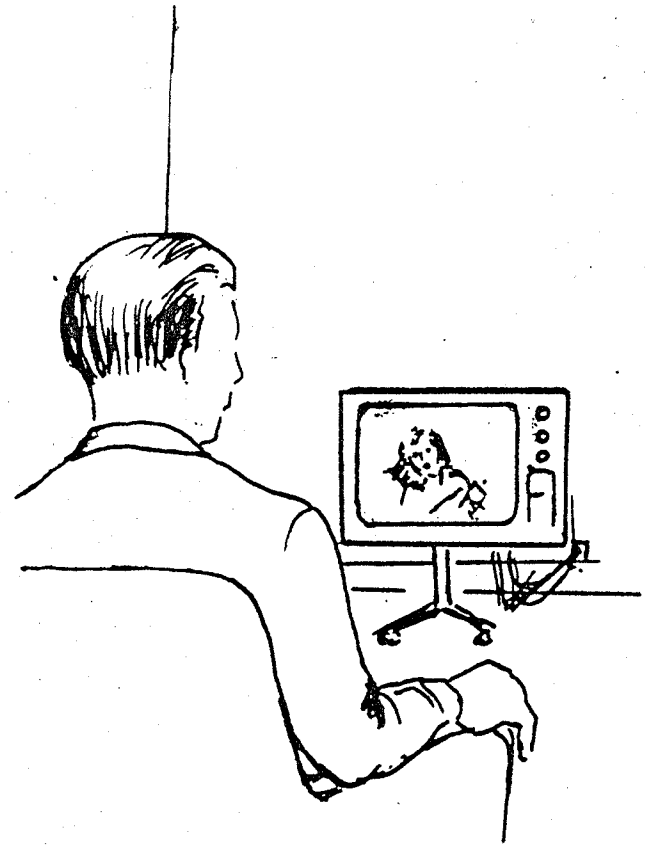




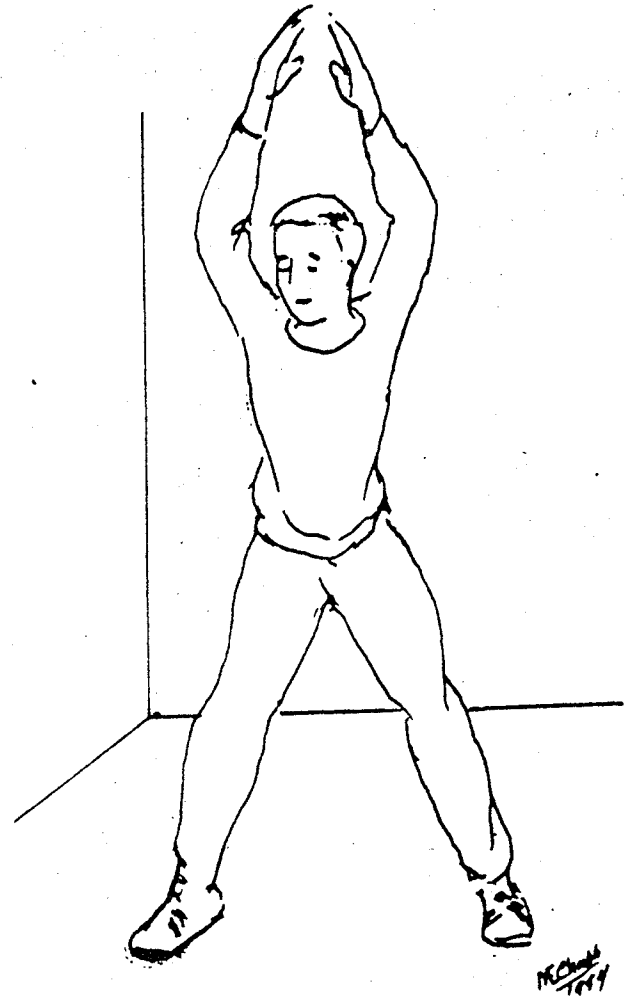
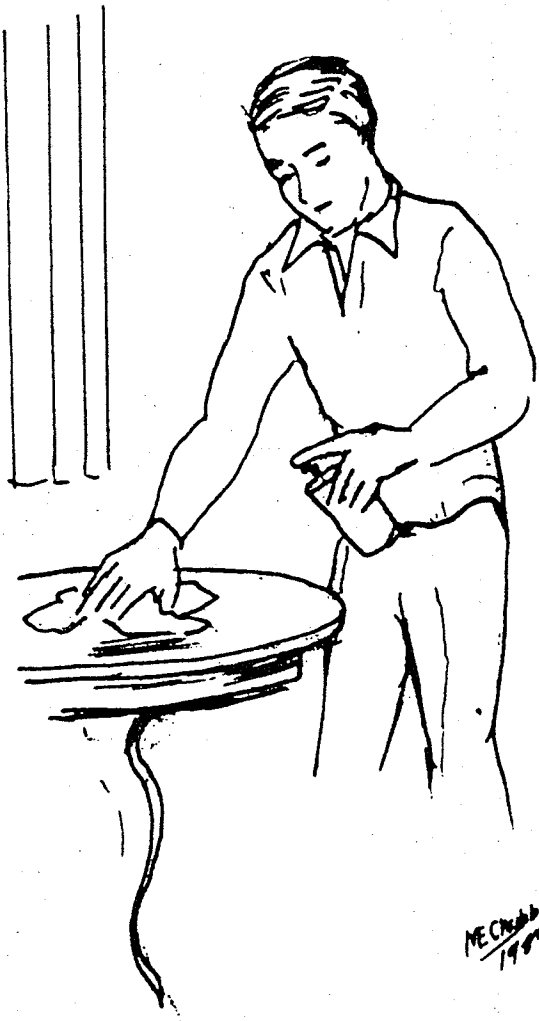


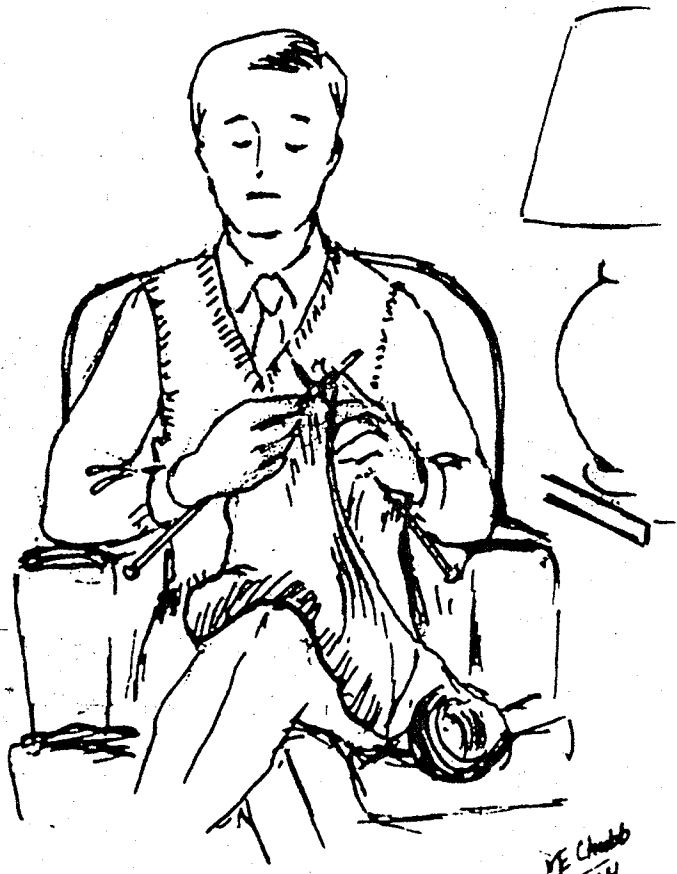


McChubb
1994

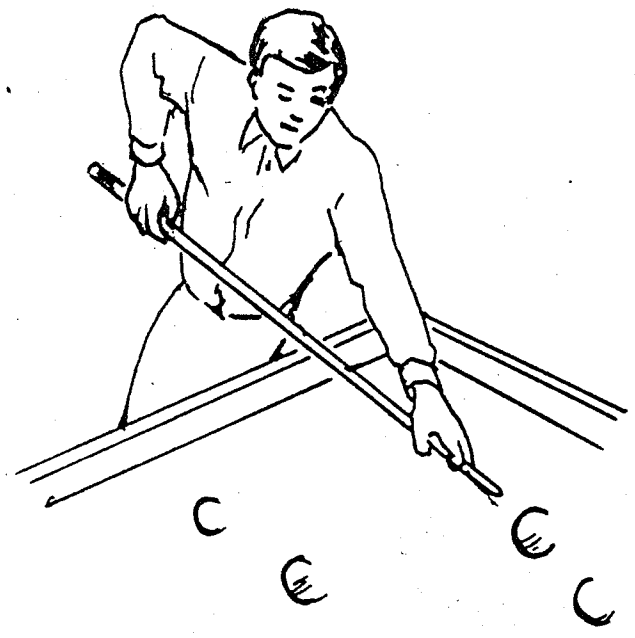


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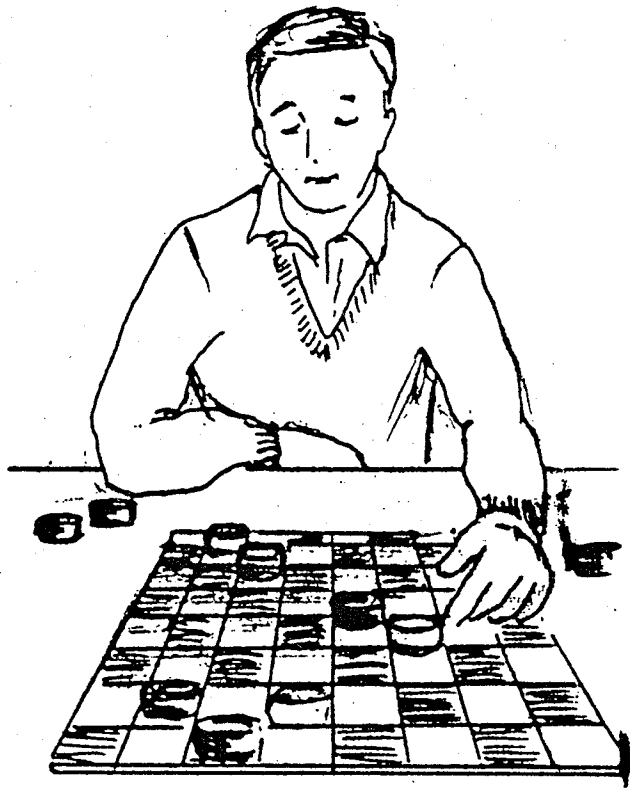




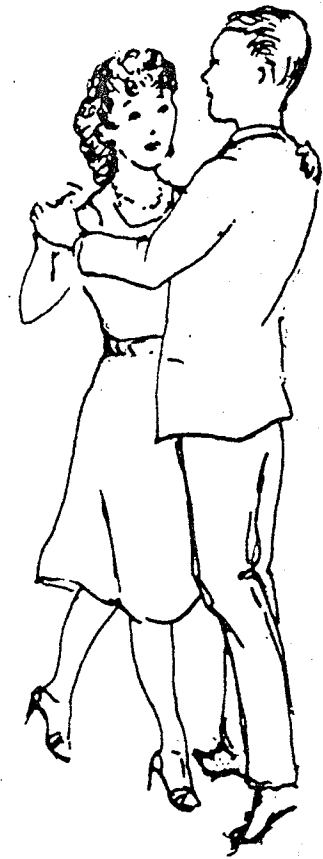
YE Chubb
1904



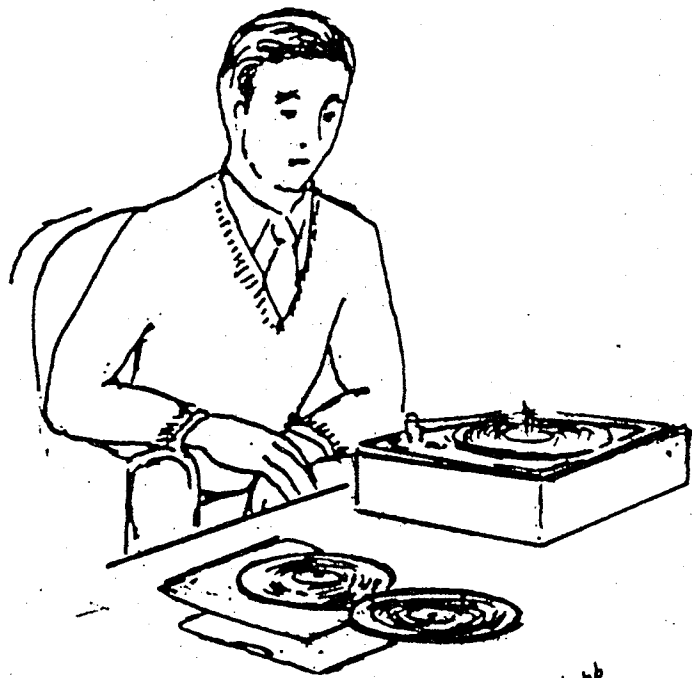
YE Chubb
1904



ME Chubb
1984



ME Chubb
1984
129



FE Chubb
1904



ME Chubb
1904
130



McCrumb
1994



McCrumb
1994

Appendix F

Paired Comparisons

Paired Comparisons

Relationship between environment and activity: Presentation of pairs of pictures to participants.

<u>TRIAL</u>	<u>ACTIVITY CARD NUMBER</u>
1	1 and 30
2	2 and 29
3	3 and 28
4	4 and 27
5	5 and 26
6	6 and 25
7	7 and 24
8	8 and 23
9	9 and 22
10	10 and 21
11	11 and 20
12	12 and 19
13	13 and 18
14	14 and 17
15	16 and 1
16	17 and 2
17	18 and 3
18	19 and 4
19	20 and 5
20	15 and 16
21	21 and 6
22	22 and 7
23	23 and 9
24	24 and 8
25	25 and 10
26	26 and 11
27	27 and 12
28	28 and 13
29	29 and 14
30	30 and 17
31	15 and 18
32	2 and 20
33	3 and 21
34	4 and 22
35	5 and 23
36	6 and 24
37	7 and 25
38	8 and 26
39	9 and 27
40	10 and 28
41	11 and 29
42	12 and 30
43	13 and 16
44	14 and 15
45	1 and 19

Appendix G

Questionnaire for Participants

Questionnaire for Participants

Relationship between environment and activity.

Participant Number _____

A-Do you like to _____ ?

B-Do you _____ here where you live?

ACTIVITY	CARD #	A		B		NOTES
		LIKES TO DO		DOES		
		YES	NO	YES	NO	
SETTING A TABLE	1					
WASHING DISHES	2					
VACUUMING THE FLOOR	3					
IRONING CLOTHES	4					
COOKING FOOD	5					
WATERING PLANTS	6					
DOING THE LAUNDRY	7					
PAINTING PICTURES	8					
LIQUID EMBROIDERING FABRICS	9					
SEWING BY HAND	10					
WRITING ON PAPER	11					
PLAYING SHUFFLEBOARD	12					
PLAYING CARDS	13					
DOING PUZZLES	14					
RIDING AN EXERCISE BIKE	15					
CROCHETTING WITH YARN	16					
PLAYING PING PONG	17					
PLAYING CROKINOLE	18					
SITTING IN A CHAIR	19					
WATCHING T.V.	20					
DUSTING FURNITURE	21					
DOING EXERCISES	22					
KNITTING WITH WOOL	23					
PLAYING POOL	24					
PLAYING CHECKERS	25					
DANCING WITH A PARTNER	26					
LISTENING TO RECORDS	27					
READING BOOKS	28					
VISITING WITH SOMEONE	29					
TALKING ON THE TELEPHONE	30					

Appendix H

Record of Participant Preferences

Record of Participant Preferences

Relationship between environment and activity:

Participant Number _____

- indicates preference

CARD Number	ACTIVITY CARDS Picture Numbers	CARD Number	ACTIVITY CARDS Picture Numbers
1	1 _____ 30 _____	24	24 _____ 8 _____
2	2 _____ 29 _____	25	25 _____ 10 _____
3	3 _____ 28 _____	26	26 _____ 11 _____
4	4 _____ 27 _____	27	27 _____ 12 _____
5	5 _____ 26 _____	28	28 _____ 13 _____
6	6 _____ 25 _____	29	29 _____ 14 _____
7	7 _____ 24 _____	30	30 _____ 17 _____
8	8 _____ 23 _____	31	15 _____ 18 _____
9	9 _____ 22 _____	32	2 _____ 20 _____
10	10 _____ 21 _____	33	3 _____ 21 _____
11	11 _____ 20 _____	34	4 _____ 22 _____
12	12 _____ 19 _____	35	5 _____ 23 _____
13	13 _____ 18 _____	36	6 _____ 24 _____
14	14 _____ 17 _____	37	7 _____ 25 _____
15	16 _____ 1 _____	38	9 _____ 26 _____
16	17 _____ 2 _____	39	9 _____ 27 _____
17	18 _____ 3 _____	40	10 _____ 28 _____
18	19 _____ 4 _____	41	11 _____ 29 _____
19	20 _____ 5 _____	42	12 _____ 30 _____
20	15 _____ 16 _____	43	13 _____ 16 _____
21	21 _____ 6 _____	44	14 _____ 15 _____
22	22 _____ 7 _____	45	1 _____ 19 _____
23	23 _____ 9 _____		