

Housing for the independently living elderly : theoretical backgrounds

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Housing for the independently living elderly; Theoretical backgrounds

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Preface

This report contains a description of a literature search that was performed during the first eight months of a Ph.D. project on housing for the independently living elderly. This four year project, that started in October 1993, is supported by the Institute for Gerontechnology (Eindhoven University).

This report focuses on the theoretical backgrounds of the interaction between the elderly individual and his/her home environment. Based on this literature search, decisions were made concerning the direction and goals of the research project. The sequel to this work was a paper that was presented at EDRA 1995. The title of this paper, consisting of a theoretical discussion and a description of the first pilot study, was 'Adaptation, problem solving and design of the home environment by elderly people'.

Housing for the Independently Living Elderly

Theoretical backgrounds

Preface	1
1.1 Introduction	5
1.2 The importance and meaning of home	7
1.3 Theory	9
1.4 Theories of needs	10
1.4.1 Support - autonomy dialectic	12
1.4.2 Personality, lifestyle and dispositions	14
1.5 Satisfaction	17
1.6 Adaptation	19
1.7 Some specific theories on ageing and the environment	21
1.7.1 Lawton's ecological model of ageing	22
1.7.2 Kahana's Congruence Model of Person-Environment Interaction	24
1.7.3 Carp's Complementary/Congruence Model	25
1.8 Conclusion	27
References	29

1. Theoretical backgrounds

This chapter contains a report on the literature search that was conducted at the start of the study on housing for the independently living elderly. After considering the importance and meaning of the home, we will understand the importance of this research. Theoretical backgrounds of the study are discussed. The theories that were examined stem from three basic origins: theories of needs, theories on satisfaction, and finally theories on adaptation. After a discussion of these three categories of research, some specific theories on ageing and the environment are presented. The chapter ends with a conclusion.

1.1 Introduction

In 1993, more than 10% of the Dutch population was aged between 65 and 79 (more than 1.5 million), and another 3% were age 80 and above (456.391 persons). Trends in demographic data show that the number of people of 65 years and older will grow to 15% between 1993 and 2010. The number of elderly aged 85 years and over will grow to 3.7% (616.137 people) in this period. The Elderly are a rapidly growing group of people, with only one thing in common: they have been around for more years than most of us. For now, I will not even venture to say how many years more. Beside this, there are very few statements to be made, valid for the entire group. According to the title of this project, the goal of this study is enhancing independent living for older people. Ultimately though, the goal is enhancing the quality of life, the wellbeing and satisfaction of the ageing individual.

Our opinion is that the environment is a very important factor in the wellbeing of people. Both age and physical health intervene in transactions between person and environment. Some people may be surprised by the fact that this study doesn't explicitly start with an assessment of the decreasing capacities and competence during the process of ageing. Many studies actually start this way. Our view of the ageing population though, is not primarily focused on what they can't do, but on what they can do. Only too often have we seen stigmatising studies of the elderly, merely focusing on disabilities and decreasing functioning. Our view of the elderly is very different from this one. That is why we, when describing the kind of housing elderly need, start with a study on all the important needs, wishes and characteristics of the ageing individual, his/her environment and the interaction between person and environment. *"understanding their salient traits, the relevant characteristics of their environments, and the nature of the person-environment transactions in their daily lives can enlighten efforts to improve life quality and reduce institutionalization"* (Carp & Carp, 1984).

Only too often, the elderly are viewed as a group of needy people, with nothing left to offer to our society, or even as a burden on society. In describing them, aspects like handicaps and decrease in physical and cognitive capacities are very common. *"..later life continues to be regarded mainly in terms of retirement, or disengagement, from the mainstreams of social and industrial life. This is a negative*

view, in that it defines later life in terms of what society does not expect of people. What is needed is a positive statement which prescribes what society does expect of its older members" (Bromley, 1988). The first thing we need to do is to realize that the elderly are a very diverse, heterogeneous group of people. People at age 75 are even more different than when they were five years old. This is also reflected in the statement 'ageing is universal but not uniform': "It reflects environmental factors as well as intrinsic ageing processes. Ageing processes most directly affected by environmental insults result in relatively greater variability in older persons because of differences in exposure and the interactions of disease and ageing" (Fozard, Metter, Brant, Pearson, & Baker, 1992).

Many of us think that the majority of the elderly is living in homes for the elderly or nursing homes. Fortunately this is not the case. Of all the Dutch elderly (55+) up to age 75, 97% is still living independently. Of the people between age 75 -85, 87% is still living at home. Of people over 85, only 45% is living independently (Stichting Consument en Veiligheid, 1992). According to Koehler & van der Pennen (1988) though, about one fifth of the elderly is living in houses that are not suited to their needs. The majority of the elderly try to live in their old homes for as long as possible, until they are finally forced to move to a care facility. The Dutch government is also stimulating intramural care to be substituted by extramural care.

Recently, new kinds of housing facilities, with varying levels of provided care are being built. The idea behind this is that as the need for care reaches a certain level, the elderly individual can move to a new housing facility that better 'fits' the present need. This however would call for the elderly to move several times during their old age, being confronted every time with new housing, new people, a new neighbourhood. *"As soon as the need for assistance has reached a certain level, the elderly person has to move to a new type of housing, where assistance can be provided more efficiently."* (Houben, 1987) What is needed is more flexible kinds of housing, in which the elderly individual can live fairly independently for as long as he or she prefers. This calls for flexible, adaptable housing and a flexible provision of care. *"..disconnecting housing and care, enables the staff in some care homes to differentiate their services. This implies a wider target group. In these homes, residents are not compelled to move when they grow more dependent on assistance. [...] The realization that there will be no need to move in case of an augmented need for assistance makes people feel secure"* (Houben & van der Voordt, 1993). Béland (1984) stresses the fact that help (assistance services) could only be efficacious if the housing conditions and the support network are already satisfactory. *"To make a policy intended to encourage remaining in the home and discourage institutionalization effective, it must be concerned first with the physical and social conditions of the homes of elderly persons rather than with direct assistance services, which can only be peripheral"* (Béland, 1984).

This brings us to the concept of adaptability and flexibility: The housing to be built for the elderly individual should be suited to his/her individual needs and preferences. This is the first reason for flexible and adaptable housing. *"An imposed setting is unlikely to be a home environment, although it may become*

one through ways (...) of increasing congruence (or reducing incongruence) with needs and preferences.... Congruence with latent functions, [...] with symbolic landscapes, with symbols defining place and social identity, and so on needs to be considered. Environments designed as open-ends may make congruence much easier. By understanding the elements for which congruence is most critical, it may be possible to fix certain elements of the physical design" (Rapoport, 1982). The second reason is that during the many changes people are faced with, especially in old age (retirement, physical decline, bereavement), the house should be adaptable to changing needs. And third, as people grow older, they typically spend more time in their immediate surroundings. A flexible and adaptable house could be very stimulating for the person who is forced to spend more and more time at home. It is important to note though, that an optimal use of adaptable housing is not only dependent on the design of the house, but also on the attitude of the resident.

1.2 The importance and meaning of home

The first question to be raised when discussing the importance and meaning of the home is: "what exactly is 'home'?" In the physical sense, we could limit our study to the house itself, but this would be a too narrow view. We will focus on the house, its immediate surroundings and services in its neighbourhood. This however does not answer the question: "what is home?".

In a publication of the Dutch government (Werkgroep woonmilieu, Ministerie van VRO, 1971), the home is said to have several functions:

- protection,
- utility (possibility to perform pleasant and useful activities),
- domain (to provide a territory, privacy),
- communication (conditions to make social contacts),
- and symbol (home as a symbol of who we are or want to be, status).

According to Van Leeuwen (1980, cited in Heijs, 1992), our home is the place where we stay, more or less permanently, a place from which we explore and experience the world and to which we return time after time.

It is important to note that the home is not merely a place to afford physical wellbeing, but psychological wellbeing as well. Pineau (1982) studied these psychological aspects among women in France. Important aspects were: personalization of the home, the choice between social contacts and being alone, inside the home as well as towards its surroundings, space to perform activities and physical and psychological warmth. Phillips (1967, cited in Heijs), adds to this a certain degree of control and flexibility. Ittelson, Franck, & O'Hanlon (1976) also state that a feeling of home mainly comes from personalization and identification, as well as a feeling of property and control. This multifaceted character of housing complicates its evaluation.

From the transactional point of view, the home is a holistic unity; it is defined by, incorporates, and gains meaning through the psychological and interpersonal events that occur in it. Neither the physical settings of the homes nor the psychological and social processes with which they are associated can be disentangled from each other. *"Two key assumptions in this perspective are that people and their environments are an integral and inseparable unit.. Second, temporal qualities are intrinsic to people-environment relationships, so that homes are conceived of as a dynamic confluence of people, places, and psychological processes"* (Werner, Altman, & Oxley, 1985). The concept of transaction implies a dynamic relationship between person and place. Home experience is constantly changing as the needs and circumstances of the resident change. When studying the essential meaning of ageing and its implications for home experience, Sixsmith (1991) reported that participants suggested a number of themes of change: bodily ageing, social ageing, life changes, remembering and place, and awareness of death. Bodily ageing entails an environment that is supportive or that at least does not place too high demands on the resident. Social ageing requires not only keeping in contact with the outside, but also maintaining social roles. Life events can impact the individual's experience of home at an instrumental as well as a social level. The relationship between memories and home also has a number of facets, and finally, awareness of death may change the goals and values of elderly individuals. All these themes can have a major impact on the individual's experience of home. Therefore they all have implications for the design and management of the house.

Several researchers have studied meaning symbolism and other aspects of the environment, in the context of the elderly. Sixsmith (1986) studied the importance of elderly people's homes, both symbolically and instrumentally, in affording independent life. He fosters a transactional view of the individual and his environment, especially the home-environment. *"The person and environment form a unified whole, with the individual as the locus of environmental experience. 'Home' is essentially a transaction between person and place where the different aspects of home experience, such as privacy or security, all reflect the intentions of the dweller within the material context of the home"* (Sixsmith & Sixsmith, 1990). This transactional unity of person and environment implies a dynamic equilibrium of interdependent elements. Changes in any part will have implications for the whole system. His findings suggest that the home is an integral dimension of independence. *"The home is a material part of being independent and independence in later life cannot be fully understood without reference to the home"* (Sixsmith, 1986). In his view, the home is a mediator between the self and others. The home also confers a sense of identity on the dweller. Symbolically, a person's home is an assertion of independence and a confirmation of the 'I' as distinct from others. (Pennartz, 1981) also stated that people obtain their identity from their homes and living environment and feel comfortable there.

J. A. Sixsmith showed that home takes on greater significance in later life both in terms of usage and the subjective experience of place. *"Understanding home experience in later life must also account for an increased emotional attachment to the home, especially towards people who have been bereaved"* (Sixsmith & Sixsmith, 1990). Attachment to the home will also be greater because older people have

usually lived in their homes longer than the average person (Lawton, 1989). Cohen and Weisman (1991) state that for many people, the home represents their life accomplishments, it is almost always the environment of choice for as long as possible. Rapoport (1982) argues that the importance of latent and symbolic aspects still needs to be stressed. He states that meanings of the environment and its parts and the importance of symbolic and communicative aspects of the environment are generally important and may be of special importance for the elderly. In order to include symbolism into models and theories, he argues that the concept of lifestyle may be useful. *"First, both the symbolic and sociocultural models are concerned with people as members of groups and what these groups might be, that is, the criteria and characteristics of groups and the way people thus see themselves (and are seen by others) as being distinct. What are the world views, values, lifestyles, and activities of such cultures and subcultures, and what are their specific ways of doing things?"* (Rapoport, 1982). Again, this is a significant reason for considering personality and lifestyle in studying the elderly. Windley (1982) proposes environmental dispositions as a way to combine personality psychology and environmental psychology. *"If we consider the house-settlement system, we find different importance attached to the dwelling versus the neighbourhood by different groups. Thus it is necessary to define groups, look at them cross-culturally in terms of lifestyles, culture, and personality"*.

1.3 Theory

"Each of us lives and carries out life's activities in a world that we experience as being separate from us" (Ittelson, 1982). Still, in order to understand and predict the behaviour of man in his environment, we need to understand man, his environment and the relationships between them. Theories on environment and behaviour have had many faces over the years. *A dichotomous view of the self and the environment underlies the history of thinking in the behavioral sciences, where the primary emphasis has been on the effect of environmental variables on behaviour* (Ittelson, 1982). This concept is often called environmental determinism: behaviour as strictly a function of the environment, $B = f(E)$. Partly in reaction to this extreme, the opposed view developed, claiming behaviour to be solely dependent on the person: $B = f(P)$. The view most commonly shared nowadays is that behaviour is a function of environment and man, $B = f(P, E)$, and often of an interaction term as well: $B = f(P, E, P*E)$. We could regard this function as a uni-directional process, but observing the process more critically, we must conclude that behaviour itself influences the environment and even man. We could try to envision this as a cyclical process. An even more extreme view is that of transactionalists, which treats environment and man as a holistic transactional unity, inseparable from each other. The concept of transaction implies a dynamic relationship between person, place and time.

Environmental psychology's problem is that of uniting these two domains [man and environment] by creating a complete model in which the two aspects are as integrated as they are in real life" (Levy-Leboyer, 1982). In most theories, behaviour does not only have a physical, but also a psychological

aspect. The term environment has repeatedly been defined differently, sometimes indicating the social and interpersonal environment, sometimes the environment as it is internally represented, sometimes as a discrete set of stimuli. In environment behaviour studies, the environment has also been looked upon as a source of information, as a set of limits or constraints, as a set of behavioral opportunities, as a setting within which behaviour occurs, and in a variety of other ways (Ittelson, 1982; Bell, Fisher, Baum, & Green, 1990). Rarely we find the term environment meaning the total combination of the physical, natural, social and organisational environment.

Three basic questions of Environment-Behaviour Relations are (Rapoport, 1985):

- What characteristics of people influence how built environments are shaped?
- What are the effects of the built environment on behaviour, well-being, mood, etc.?
- What mechanisms link people and environments in this mutual interaction?

In the following paragraphs, we will discuss some theories that address these three questions.

In paragraph 1.4, we will discuss the needs/wishes people have in relation to their environment, as well as the characteristics of people that might influence or predict these wishes. According to several theories of (housing-) needs, needs have to be met by the environment before a person can have a satisfying and fulfilling life. In the next paragraph satisfaction-theories are discussed. These theories focus on the criterion satisfaction instead of needs and investigate the different aspects that influence this affective response. In paragraph 1.6 adaptation-theories are discussed. These study the interaction process between house and inhabitant.

1.4 Theories of needs

In 1954 Maslow presented a hierarchy of universal and fundamental, personal needs in his book *Motivation and Personality*, that consisted of five categories: physiological needs, need for safety, need for belongingness and love, need for esteem, and the need for self-actualization. The idea was that well-being depends on appropriate satisfaction of needs by the environment. Maslow states that only after a lower-order need has been fulfilled to a certain degree, the next 'higher' need becomes manifest and evolves to be the most dominant need influencing behaviour (Priemus, 1984). Since then, several related theories, classifications and hierarchies of needs have been formulated. Nowadays, hierarchies of needs are not regarded as rigidly as they used to be. For instance, so called lower-order needs are not thought to disappear after they have been fulfilled, but are regarded less influential. The thought that so called higher-order needs only come into focus after lower-order needs have been fulfilled is also withering. The hierarchical relationship between categories of needs has only seldom been supported empirically (Wahba and Bridwell, 1976; Liebrand, 1977, both in Gall, 1983). A major problem with these theories is that it is very hard to relate specific tangible needs to the higher-order needs in the hierarchy.

Wahba and Bridwell (1976 in Gall, 1983) divided Maslow's five groups of needs into two groups: maintenance needs (physiological and safety) and 'growth needs'. For the fulfilment of the first group of needs we are mainly dependent on others, but the second group of needs are focused on active functioning and a degree of control over the environment by the individual. Cullen and Moran (1992) suggest an alternative categorization: "*In view of the elderly, we can basically discern two kinds of needs: needs related to overcoming problems and needs related to realising opportunities. It is particularly important to bear in mind this dual focus when considering the needs of the elderly*". Most elderly are faced with at least some decline in some functions. These functional declines are stressful in themselves, but they can also hinder the realisation of positive goals. "*On the other hand, it is important not to adopt a narrow, problem-oriented view of the elderly and to place more emphasis on positive development as a goal, per se*" (Cullen, 1992).

In most classifications of the needs of the elderly, the first kind of needs, related to overcoming problems, are abundantly present, the second kind though, needs related to realising opportunities, are much harder to detect. For instance Cullen and Moran (1992) themselves define four kinds of needs: social needs, medical needs, needs related to ADL and security needs. A classification that comprises this dual focus more pronounced is the one suggested by McRae (1975, in McRae, 1989), consisting of six basic categories of needs of the elderly as directly affected by the physical environment, with independence and self-reliance as the most important. The categories are: independence and self-reliance; neighbourhood life boundaries; social interaction; proximity to resources; personal space and privacy; and sensory stimuli and orientation. A recent overview of a classification of consumer (not necessarily elderly) needs was formulated by Engel, Blackwell, & Miniard (1990): physiological needs; safety; affiliation and belongingness; achievement; power; self-expression; order and understanding; variety seeking; and attribution of causality.

The last categorisation I would like to mention is the one formulated by Rapkin and Fisher in 1992. They studied the life goals of elderly individuals. Their Life Goals Inventory consists of ten different goals/needs: active improvement; maintenance of social values and relationships; disengagement; energetic lifestyle; safety and security; stability; increased reliance on services; easy life; reduced activity; and independence in living situation. These are only a few examples of the categorisations of needs presented in the past. Every categorisation is formulated for a special purpose, which results in a huge range of classifications, some differing distinctly, some only in detail.

The basic thought behind studies on housing needs is that a good housing situation is a situation that fits the needs of the inhabitants as close as possible (Burie, 1972). After discerning the basic categories of needs, most investigations are focused on composing detailed lists of needs and wishes. When studying homes for the elderly, a very broad field of needs should be considered, because the home is the base from which people live their lives and the repository of central and cultural processes. "*They [homes] are important centres for the development and manifestation of central psychological meanings*" (Altman &

Werner, 1985). This goes especially for the elderly, who are more and more confined to their homes and who have lived there for many years, resulting in more close bonds with everything in and around the house. We should realize that psychological aspects are very important in the housing needs of the elderly (Houben, 1987). A decisive aspect for instance is the fear and expectations of future need for help. There is also a major difference between the objective and subjective need for help. Houben also found that the elderly, when asked for their wishes for future living situations, tend to formulate them in terms of the existing housing types. *"It is striking that the series of housing types with a descending degree of independence are viewed by a majority of the elderly as a road they are forced to follow. These people are facing a negative housing-career"* (Houben, 1987).

1.4.1 Support - autonomy dialectic

A phenomenon often mentioned for the elderly is that different needs may (seem to) be opposed to each other. The most renowned dialectic is that of autonomy versus support/security. Parmalee and Lawton (cited in Fozard, Metter, Brant, Pearson, & Baker, 1992) argue that in designing environments for the elderly, two human needs deserve extra attention: needs for autonomy (which comprise stimulation, challenge and mastery) and needs for security (which comprise dependability, comfort and support). Finding the right balance between these two needs is crucial in designing the 'perfect' environment. Again we should realize that this balance is different for every individual, depending on his/her capacities, preferences, etc. How to accomplish the (individual) optimum balance between these needs is probably one of the hardest problems to solve, for the researcher, designer, but also for the elderly individual him/herself.

The need for independence or autonomy is a need that is shared by a large section of the elderly (COSBO, 1990). This does not imply that these people have the need or desire to live without any help from other people or technology. How particular kinds of housing or technology are assessed, may strongly depend on the individual's interpretation of autonomy and independence. Therefore we must discuss the meaning of these concepts and understand the different views.

Erikson (1959, cited in Altholz, 1989) believes that autonomy indicates a wish to be self-reliant and self-determining, and autonomy and pride come from a sense of self-control without a loss of self-esteem. Self-control is not just control over one's inner impulses, but also control over the environment, including the people in the environment. Like Erikson, Moos (1976, cited in Altholz, 1989) believes we innately strive toward autonomy. According to Moos, there is an inherent tendency toward increasing self-determination and mastery, to resisting external forces that control a person and to bringing the physical and social environment under one's control. In applying autonomy to adults, he includes the adult functions of making decisions, assuming responsibility for oneself and regulating one's behaviour. The

maintenance of autonomy is dependent upon one's actual existing capacity, as well as one's sense of capacity to interact effectively with the environment.

Often independence is defined in terms of self-determination: "*..independence is a state of self-determination whereby the individual, with or without the assistance of others and regardless of disability, is able to dictate the path that his or her life should take. It is a state that is determined both by personality and the individual's social and physical environment*" (Fisk, cited by Cullen, 1992). Striking is that independence according to Fisk is not necessarily the same as being able to do things without assistance. Self-determination means having the resources to exercise an acceptable level of control over one's life. Relevant resources include individual characteristics as well as features of the physical, social, and institutional environment.

Béland (1984) studied the decision of elderly people to leave their homes. It was found that while independent living and autonomy are often seen as synonymous, in fact many elderly people choose to move to an environment where some protection is available, thus enabling them to preserve their personal autonomy. Something similar was found among elderly still living independently by Lawton (1985), who suggests that there are two basic but seemingly rivalling needs among the elderly: the need for support and the need for autonomy. Simultaneous meeting of both these needs is achieved by what he calls 'multiplexing the environment', which means that the feeling of autonomy is upheld, even when receiving help. His subjects were gratifying both needs (autonomy and support) simultaneously, through partitioning the context in which these needs were satisfied.

In a study among elderly, A. Sixsmith (1986) asked his subjects what they thought independence meant. He found that their opinions could be categorized into three groups: "*..first, independence meant being able to look after yourself, that is not being dependent on other people. Participants also saw independence as the capacity for self-direction, that is the freedom to choose what they do. Thirdly, the idea of independence was linked to feelings of obligation, of being beholden to others*". He also studied the relationship between subjects' homes and independence. "*People's understanding of the relationship between home and independence also reflected these modes, but also involves a symbolic and instrumental demarcation between the self and others. .. That is to say, the home is a material part of being independent and that independence in later life cannot be fully understood without reference to the home*" (Sixsmith, 1986). For many older people, home can be a factor in maintaining a sense of independence, even in the context of disability.

Independence and autonomy can have different implications for different groups of elderly. For many elderly, living in their own house is vital to uphold the feeling of independence (Houben & van der Voordt, 1993), even if this means having to adapt the house and having care givers visit them frequently. Others prefer to live autonomously in housing types, where assistance and emergency help is available, when required. We must realize that both the importance and the meaning of being independent are

personal and can be associated with receiving help, using technology and/or symbolic meanings. The importance of meeting these needs should not be underestimated: "*While we lack much in terms of our knowledge about what autonomy and competence are in ageing, there seems to be a shared belief that environments which do not allow opportunities for these can lead to depression, helplessness and apathy in the elderly*" (Altholz, 1989). Mertens (1991) also states that attitudes to dependency are central to the maintenance of self-esteem and wellbeing. In his study on the wellbeing of elderly movers to nursing homes, he found that the only predictor variable that was significant in predicting major changes in the difference score on personal wellbeing was attitude towards dependency. "*Only knowledge about attitude towards dependency allows us to predict increase or decrease in level of personal wellbeing one-and-a-half to two years later correctly*" (Mertens, 1991).

Beside the need for independence, there are other important factors that can have an important impact on the wellbeing of every individual. Meeting these needs in the homes of the elderly is essential in enhancing their wellbeing. The needs and wishes discussed above are very broad and general in nature. For this study, they should be limited or translated to needs/wishes related to the home. As mentioned before, this gets more complicated as we discuss 'higher' needs.

1.4.2 Personality, lifestyle and dispositions

I would like to stress the fact that the elderly should first and foremost be regarded as individuals, with their own specific needs, desires and goals, their capacities and resources. When thinking about needs and wishes of the elderly though, the term 'personality' is hardly ever heard. Nor is the concept of 'lifestyle'. In order to produce the right technology and especially to design the right houses though, these two aspects seem to be essential. According to Bromley (1988), focusing on the diversity within the group of elderly may also reduce stigmatising: "*Indeed, there might be some benefit in emphasizing the wide range of differences between older people, so as to counter the prevailing negative stereotype*".

In 1982, Levy-Leboyer commented on the low level of attention given by researchers to the relation between personality and perception/evaluation, and to how lifestyle influences perceptions, needs, preferences and behaviour. Whereas Kaplan formulated three universal environmental needs (the environment must make sense to those who inhabit it, it must provide novelty, challenge, and uncertainty, and it must permit choice, the ability to decide) i.e. needs that are the same for everybody (cited in Levy-Leboyer, 1982), Levy-Leboyer formulated 7 categories of needs that can differ among people, dependent on for instance personality or lifestyle.

1. *security (physical security as well as family roots to produce feelings of a firm social base).*
2. *the way in which the environment is evaluated: intrinsic values (quietude, beauty, integrity, harmony) - functional aspects (proximity to work, communications).*

3. *importance the environment is deemed to have (importance of expression, status, versus more importance on success, work, etc.).*
4. *care for integration (conformity and the freedom of choosing one's social contacts).*
5. *dependence upon community and its services.*
6. *importance of social life, either based upon the family or externally oriented.*
7. *need for participatory activities/ contribute actively to the planning of the environment. (Levy-Leboyer, 1982)*

Costa and McCrae (1992) have studied personality traits during the ageing process. Their basis was the five factor model (first articulated by Tupes and Christal, 1961, cited in Costa and McCrae, 1992), which includes five broad and pervasive factors or dimensions: Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C). They are convinced of two facts: Personality traits are real and they are remarkably stable in adulthood. *"Trait models of personality all suggest that individuals have pervasive and enduring characteristics that influence their thoughts, feelings and behaviours and that distinguish them from other people. ... Our findings contradicted popular theories that called for stages of adult development, a midlife crisis, or disengagement or that predicted increasing rigidity or wisdom, mellowing or crankiness, depression or denial with approaching old age"* (Costa & McCrae, 1992). Nevertheless, individuals' life structures may (will) change as they age, due to changes in work activities, environmental circumstances, and important life events, even though their dispositions may remain much the same. Still, in understanding the values, attitudes and opinions of the elderly individual, personality traits may be essential. The importance of personality traits, especially locus of control, in relation to wellbeing, activity level and interaction with the environment is mentioned by several researchers: *"In the life, and therefore in the housing needs of the elderly, invalidity and sickness are extremely important. Because of the fact that actual or potential need for help are a major part of housing needs, personality characteristics can be of major influence. How will one react to invalidity, retirement and other important life events?"* (Houben, 1987). Researches by for instance K. L. George and H. Ormel also point out the major influence of personality characteristics on wellbeing and coping behaviour (in Houben, 1987).

These traits are strongly related to needs as well. In a joint analysis performed by Costa and McCrae, they found that the dimensions underlying Murray's (1938) needs seemed to be the same five found in analyses of trait adjectives and personality scales. In formulating needs and desires of the elderly, we should always realize that the elderly are a very heterogeneous group. Personality traits are an important aid in recognizing differences between individuals. Another useful instrument in dealing with the diversity within the group of elderly may be the concept of lifestyle. Engel, Blackwell, and Miniard (1990) define lifestyles as *"the patterns in which people live and spend time and money. They are a function of consumer's motivations and prior learning, social class, demographics, and other variables. Lifestyle is a summary construct reflecting the values of consumers. Values are relatively enduring; lifestyles change more rapidly"*.

In their study on over 600 elderly men and women over 60 Taylor and Ford (1981) state: "*Like many researchers who have set out to investigate normal ageing we were immediately struck by the apparently vast range of different lives our respondents led and the wide range of variations of 'success' manifested within this diversity. If we examine the contents of their lives, the diversity is seemingly endless*". Based on a study of literature concerning primary group contacts, interests, hobbies and associational life and typical daily activities, they constructed a number of vignettes which they felt described the essence of several possible 'types' of elderly. Then they went back into the field to see which of the vignettes 'made sense' to their elderly sample. They arrived at a list of ten items which their subjects seemed to recognize as sensible descriptions of different orientations towards life.

With an increased appreciation that the elderly are a diverse segment of our population, more attention is now being given by marketers as well to identifying ways to segment the elderly into meaningful groupings. Although segmentation on the basis of chronological age is simple and may be useful for some products, more sensible segmentations are suggested by for instance French and Fox (1985): theirs is based on motivations and adjustments orientation. In their scheme the elderly are first divided into three major segments (healthy adjustment, fair adjustment, and poor adjustment). With three further divisions in each of these major categories, the segmentation consists of a total of nine subsegments (reorganizers, focused and disengaged; constricted, holding-on, and succourance seekers; and angry, apathetic, and self-blamers).

A third means of handling the heterogeneity of the elderly, which combines ideas from the field of personality psychology and environmental psychology are environmental dispositions. These are defined as the unique but relatively stable ways people relate to the man-made and natural environment. "*Dispositions include the configuration of people's attitudes, beliefs, values, and sentiments in regard to the physical environment. Dispositions also imply a trait-like behavioral potential - a predisposition to respond and behave in a consistent fashion in the environment*" (Windley, 1982). Several sets of dimensions or factors have already been formulated (e.g. McKechnie, 1974; Sonnenfeld, 1969; Little, 1968; Windley, 1972; all cited in Windley, 1982). *McKechnie (1974) constructed an inventory of 184 items evaluating eight named personal dispositions: pastoralism, urbanism, environmental adaptation, stimulus-seeking, environmental trust, 'antiquarianism', need for privacy, and mechanical orientation* (Levy-Leboyer, 1982). In his unpublished dissertation (1972, cited in Windley, 1982) Windley formulated the following set of dispositions for elderly individuals: need for privacy, preference for complexity, preference for environmental stability, and need for environmental manipulation.

The strength of environmental dispositions in view of this research is that it specifically deals with how individuals relate to, communicate with and act towards the physical environment. Of the three subjects discussed here - personality traits, life style and environmental dispositions - the last one is most likely to be closely related to the needs and wishes individuals have with respect to their environment. In addition, environmental dispositions include individuals' reported uses and modifications of the physical

environment (as reflected by questions in established personality inventories). A major disadvantage however is that these dispositions are seldom mentioned in research related to this one. Using personality or lifestyle characteristics will probably lead to less difficulties in integrating research from various fields.

1.5 Satisfaction

Although theories of (housing-) satisfaction are also based on the idea that needs have to be met by the (housing-) environment, the essential thought is that a good housing-situation is a situation that provides a degree of housing-satisfaction as high as possible (Burie, 1972). The factor housing-satisfaction is seen as the criterion in these theories, instead of needs, because people are often said not to be aware of them and because, according to economists, they are endless.

In the line of job-satisfaction theories, Burie formulated a theory of housing-satisfaction in 1972. Job- or work-satisfaction is often conceived of as an attitude. According to Dawes and Smith (1985, in Vogelaar, 1990) definitions of attitudes can be categorized into two groups. One group of definitions are the so-called tripartite-definitions, in which at the same time, elements of cognition, affect, and behaviour are included. The other group consists of definitions that interpret attitudes as purely affective. Definitions of job-satisfaction mainly fall into this last category: they define job-satisfaction as the affect towards or global evaluation of the work and work situation. These correspond to the definitions of attitudes as stated by for instance Fishbein and Ajzen (1975).

Housing-satisfaction is defined as the affective orientation of a subject in relation to the housing-situation in which he happens to be (Burie, 1972). Housing-satisfaction is considered to be an attribute with a fairly latent character. The value of satisfaction can vary on a range from positive (satisfied) to negative (dissatisfied). Analogous with job-satisfaction, Burie states that housing-satisfaction is dependent on the:

- satisfaction with situations other than the housing situation,
- satisfaction with parts of the housing situation (weighted average),
- discrepancy between the housing situation and the aspiration level,
- image of housing situations of comparable others,
- former housing situation,
- housing situation as a child.

In 1985, Weideman and Anderson discussed a conceptual framework for residential satisfaction. Their integrated model was based on several concepts and ideas. Their first question was 'How do individuals respond to their housing environment?'. Ajzen and Fishbein (1981, in Weideman & Anderson, 1985) refer to the 'age-old trilogy' and point out that people display three general categories of responses to any social object: affective, cognitive, and behavioral. Affect is the emotional, the feeling response. In addition, it is an evaluative response. *"It is in this way that we conceive of residents' satisfaction with*

where they live. It is the emotional response to the dwelling the positive or negative feeling that the occupants have for where they live" (Weideman & Anderson, 1985). Their model is also based on the model of Marans and Spreckelmeyer (1981) which describes relationships between objective conditions (environmental attributes), subjective experiences (perceptions and assessments of objective conditions), residential satisfaction, and residential behaviour. Satisfaction can be seen as either a criterion for evaluating the quality of the residential environment, or as a predictor of behaviour. Weideman's integrated model contains all these elements as well as behavioral intentions, and is divided in differing levels of scale (room, unit, development, neighbourhood, community). An important aspect of this model is that it explicitly includes the objective environment.

After a discussion on the different definitions of and theories about satisfaction, Gall (1983) concludes that *"a judgment of satisfaction is developed through ways of comparing the present situation with the level of aspiration, which is mainly determined by previous and present experiences en social comparisons"*. In his dissertation he discriminates satisfaction from (feelings of) wellbeing: *"Wellbeing can be considered as satisfaction with life in general. ... [but] the degree of satisfaction could be too little affective and too cognitive, because of the role of the aspiration level and social comparisons. ... Satisfaction could be more of a judgment than a feeling. Wellbeing can be operationally defined as the experiencing of positive feelings and not-experiencing of negative feelings"* (Gall, 1983). In this sense, we can think of satisfaction as a subjective measure of congruence/consonance between the present situation and the desired situation (aspiration image).

We should be very careful in defining and measuring satisfaction among residents: *"In the literature there is a disparity between various operational measures of the same theoretical construct. Also, researchers have used different methods of gathering information and have used various analytic procedures for dealing with information"* (Weideman & Anderson, 1985). Among elderly residents we should even be more cautious: *"Elderly generally provide highly positive evaluations of their housing... Thus it is the extent of covariation of satisfaction with other variables rather than the level of satisfaction that should be the focus of those who wish to learn what attribute are predictors of, or related to, residents' satisfaction with their homes"* (Weideman & Anderson, 1985). Lawton (1987) describes the recurrent finding that older people's degree of expressed satisfaction with a number of domains of everyday life, but especially their housing, is higher than that expressed by other age groups. Possible explanations for this mechanism may be familiarity, progressive shopping (which enabled older people to approximate a match between their own needs, their assessment of what is possible, and their actual residential situation), acquiescence or sensitivity for social desirability, lower aspirations and ignorance of alternatives or ego defensiveness (Campbell, Converse, & Rodgers, 1976; Carp, 1984, Lawton, 1987). Many others have pointed at the difficulties in this kind of research, for instance Pastor (1973, cited in Priemus, 1984): *"In interpreting the survey results we should realise that people's judgments of certain aspects of a living situation will be more positive if these aspects are also present in their own living situation: people tend to wish what they already know or have and this often results in a consolidation of the status quo"*. "The

situation in which one lives, may not be decisive for satisfaction, but the pattern of wishes often is influenced in favour of the elements that are a part of the present situation" (Burgers, 1976 in Priemus, 1984). "Typically, people tend to express satisfaction with their home environments, and "misfits" may be "solved" via some of the other mechanisms and strategies already discussed - modifying the home environment, changing life-style and behaviour, changing expectations, reducing cognitive dissonance in other ways, moving again and so forth" (Rapoport, 1985).

Rapkin and Fischer (1992), studied the relationship between life satisfaction and older adults' personal goals. They examined how goals correlate with satisfaction, whether elders maintain satisfaction by accommodating goals to past losses, and how correlation between satisfaction and key predictors differ among groups with different goals. *"Life satisfaction is considered an outcome of an evaluative process, involving a comparison between current circumstances and personal standards or ideals. ... Our premise is that personal goals are a critical aspect of the frame of reference older adults use to evaluate their lives"*. As Holahan (1988) discussed, a number of trends in gerontological thought converge to the perspective that elders revise their goals to reflect possibilities and limitations for achievement and maintenance. Similarly, Brim (1986, cited in Rapkin & Fischer, 1992) posited that individuals naturally seek their level of just manageable difficulty (JMD), the point at which they feel challenged given their current competencies and resources (see Lawton, to be discussed later). *"When older adults' capacities change, they necessarily need to realign their goals"* (Rapkin & Fischer, 1992). The general thought is that elders respond to internal and external change by modifying their goals in ways that maximize satisfaction. Campbell, Converse & Rodgers (1976) also suggested this in their description of goals and aspirations as psychological shock absorbers that change to cushion the impact of stressful events. In the study of Rapkin and Fischer, current goal content was correlated with past life events, whereas satisfaction measures were not. In contrast, recent life events were associated with satisfaction measures, but not with current goal content.

1.6 Adaptation

In 1968, Priemus developed a general theory of dwelling: dwelling - creativity and adaptation. According to him, people are constantly striving for a satisfying living environment. Satisfaction exists, when the (perceived) housing situation is equal to the person's aspiration level. In order to reach this aspiration level, the dwelling process is very dynamic, with constant adaptations. Priemus (1984) discerns five different methods of adaptation:

- adaptation through moving (to a new house),
- adaptation through refurbishing (adapting the house to meet wishes),
- adaptation through change of use (adapting usage to meet wishes),
- adaptation through change of perception/evaluation (cognitive adaptation),
- no adaptation.

Satisfaction with the living environment can be reached in the first four ways mentioned above. The more option five is used, the more likely we are to find the outcome 'unsatisfied' in satisfaction research. Still, the kind of satisfaction accomplished by active adaptation (alternative 1 and 2) is of a different kind than the one reached by inactive adaptation (alternative 3 and 4). According to Priemus (1968) a satisfying living environment can only exist when the aspiration level and the present housing-situation are in harmony, reached primarily by means of active adaptation. The above shows how a simple satisfaction research can lead to erroneous interpretations: persons who have chosen option four will probably report to be satisfied with their living-situation, while a deeper investigation could reveal problems occurring in the home. *"To be able to give more meaningful interpretations of satisfaction-research outcomes we need a better understanding of the different mechanisms of adaptation"* (Priemus, 1984).

This theory of dwelling has its roots in the more general 'theory of cognitive dissonance', launched by Festinger (1957, in Priemus, 1984) and based on the following two hypotheses:

- a. *The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce the dissonance and achieve consonance.*
- b. *When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance.*

Dissonance is defined as the existence of non-fitting relations among cognitions. According to this theory *"the presence of dissonance gives rise to pressures to reduce or eliminate the dissonance. The strength of the pressures to reduce the dissonance is a function of the magnitude of the dissonance"* (Festinger, 1957 cited in Priemus, 1984). There are two possible ways of reduction:

- changing a behavioral cognitive element,
- changing an environmental cognitive element.

About this alternative Festinger states: *"This of course, is much more difficult than changing one's behaviour, for one must have a sufficient degree of control over one's environment"*.

The theory of dwelling of Priemus is also in accordance with the theory of mental incongruence (Tazelaar, 1983): Congruence exists if an actual experience, called cognition, corresponds to the demand, wish, goal or norm towards this experience. Incongruence exists if this is not the case. *"Inkongruenzen im mentale System sind notwendige und hinreichende Bedingungen dafür dasz ein Verhalten überhaupt stattfindet"* (Münch, 1972 in Gall, 1983). Tazelaar (1983) differentiates between three behavioral alternatives with which an individual can eliminate the incongruence:

- change the standard (towards the cognition)
- change the cognition without changing the actual situation (cognitive trickery)
- change the cognition by changing the situation

Incongruencies are not always eliminated, if this would lead to incongruencies between other standards and cognitions, depending on the importance of these 'secondary incongruencies'.

According to the theories of Priemus, Tazelaar, and Festinger, individuals innately strive for congruence or consonance between the image of their living situation and their aspiration level ('image'). Basically there are two ways to achieve this: through active (environmental) or passive (cognitive) adaptation. Before adaptation will take place, a certain level (threshold) of incongruence/dissonance or stress has to be reached. Only then passive or active adaptation (or both) will occur in reaction to or anticipating changing differences between aspiration and present situation-image. As mentioned before, Priemus states that any kind of adaptation (passive or active) will lead to satisfaction. We should examine this statement further though, as Levy-Leboyer (1982) states: *"It is quite possible that the subjective adaptation to the environment which is essential if the individual is to survive and be comfortable is achieved only at some psychological cost, and therefore at a genuine social cost. In other words, the fact that an environment is perceived as adequate by those who live in it does not mean that they do not suffer harmful effects in the long or short run"*.

Brandtstädter and Renner (1990), in accordance with the theories discussed above posited two complementary coping mechanisms of older adults to maintain life satisfaction, involving accommodation of goals to losses and obstacles ('*accommodative coping*'), as well as active modification of the environment in the service of ongoing goal attainment ('*assimilative coping*'). *"These two modes of coping are not mutually exclusive but may operate simultaneously in concrete situations"* (Brandtstädter & Renner, 1990). Although both these mechanisms were associated with higher satisfaction in a sample of adults ranging from 34 to 63 years, older cohorts tended to report higher levels of goal accommodation to losses. *"This difference need not be attributed to ageing or development. Rather, the choice to pursue or modify personal goals may reflect differences in the kinds of losses experienced or the availability of supportive resources"* (Rapkin & Fischer, 1992). In studying the adaptations made to home environments by elderly people, Wister (1989) also found that older people would sooner adapt psychologically, than adapt the physical environment to their needs.

1.7 Some specific theories on ageing and the environment

In this paragraph I will describe some recent theories dealing specifically with the ageing individual in his environment. The subjects discussed in the paragraphs above (e.g. adaptation, satisfaction, needs) will frequently reappear in these descriptions. The first theory is Lawton's ecological theory of ageing. This well-established theory primarily deals with the environment as a concept which imposes press on individuals as subjects with differing competences. The main focus is the adaptation of the individual to environmental press. Kahana discusses the concept of congruence between individuals' needs and preferences and environmental demands and resources. This theory is needs- or satisfaction-based rather than adaptation-based. The same holds for Carp's theory, discussed in paragraph 1.7.3.

1.7.1 Lawton's ecological model of ageing

In the chapter Competence, Environmental Press, and the Adaptation of Older People (1982), Lawton presented his ecological model of ageing. In this model, the major predictive components of personal behaviour are competence and environmental press. Competence is defined as the upper theoretical limit of capacity of the individual to function in the areas of biological health, sensation-perception, motoric behaviour, and cognition. Theoretically, these areas should be purely intra-individual, but the more complex the processes, the more competence becomes a transactional characteristic. The term environmental press was adopted from Murray (1938, in Lawton, 1982) and defined as "*stimuli possessing some motivating quality to activate a cognate individual need*". They are thus environmental characteristics with some demand quality for the individual. This demand quality can be objective (*alpha press*) or construed by the individual (*beta press*).

This results in the ecological equation: $B = f(P,E)$

The term competence in this model represents a very limited range of all possible characteristics of the person. Personal characteristics (needs, traits and personal styles) are not incorporated because of their non-evaluative character and/or static quality. This is one of the most important deficiencies of the model. Why these characteristics of the individual are, in my view, essential will be discussed later. The term press has an obvious similarity to the concept of stress. "*Press, however may be positive, neutral, or negative, while stress implies only a potentially negative environmental demand*" (Lawton, 1982).

In figure 1, behaviour is characterized as falling in the range of adaptive through nonadaptive, and the affective response is evaluated as positive or negative. The model incorporates the concept of adaptation level (Helson, 1964, in Lawton, 1982), "*which represents a state of balance between the level of external stimulation and the sensitivity of the individual's sensory, perceptual and cognitive state*". The individual tries to adapt to the stimulation so as to decrease the awareness of the stimulus. Adaptation level is the point at which sensation is minimal. Lawton (1982) poses the environmental docility hypothesis, originally formulated in 1970, which suggests that high competence is associated with relative independence of the individual from the behavioral effects of environmental press, while low competence

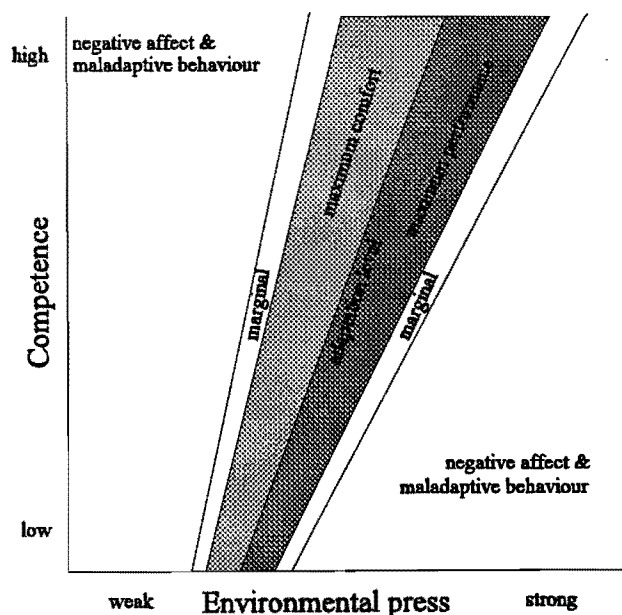


Figure 1: Press-competence model (Lawton, 1982)

implies heightened vulnerability to environmental stress. In general, the hypothesis suggests that the lower the competence of the individual the less he is able to adapt to varying environmental stress. Lawton (1982) suggests that the interaction term $P * E$ should be incorporated in the ecological equation, but neither the way this should be done, nor the use of this term is discussed extensively.

In his Kleemeier Lecture, 'Environment and Other Determinants of Wellbeing in Older People' (1983), Lawton presents a new classification of behavioral-competence categories. He states that "*all behaviour is capable of being located along a hierarchy of complexity and evaluated in terms of its normative competence*". The classification comprises the categories of health, functional health, cognition, time use and social behaviour.

In 'The Elderly in Context' (1985), Lawton argues: "*In response to justified criticisms of the docility hypothesis by Carp and Carp (1984), Lieberman and Tobin (1983), and others, I have suggested the environmental proactivity hypothesis, which states that environmental resources are likely to be better used by people of higher competence*". Proactivity is displayed when the person attempts to change himself or herself or when the person creates an environment to facilitate a desired behaviour. It is important to note that older people engage in proactive behaviour as well as others. Lawton found clear evidence for this statement in a pilot study in the Philadelphia Geriatric Center: "*It was found that virtually every impaired person had created some variant on a "control centre", whose result was most surely a bolstering of the sense of autonomy. [...] Where the relocated institutional residents reduced their social space for primarily psychological reasons, the impaired community residents reduced their space largely for physical health reasons. The community residents by this constriction reserved for themselves a larger social space, primarily psychological - represented by the idea that they still occupy their long-standing home, that they live in their old neighbourhood, that they are autonomous people living in the community, not in a dependent situation*" (Lawton, 1985). Wister (1989) reports that older people would sooner adapt themselves psychologically, than adapt the physical environment to their needs. "*The most striking finding is the tendency for older elderly to engage in psychological processes of adaptation to a greater extent than altering the physical or social characteristics of the home environment*". He recommends extending the Lawton model to include a wider range of subjective attributes of the individual.

In a later article, Lawton (1989), suggests three functions of the residential environment: Stimulation, Maintenance and Support. "*While these functions characterize the use of residential environments by all people, they are especially cogent to older people because biological and social ageing may cause redefinitions of personal needs and corresponding realignments of the transactions among person and the environment*" (Lawton, 1989). Maintenance is the state, presented by the environment at adaptation level. Stimulation is the state in which the environment demands more, or new activities from the person: "*Stimulation represents on the environmental side a departure from the usual, a novel array of stimuli, a problem to solve. [...] Activity and often autonomy thus characterize the person in a stimulating environment*" (Lawton, 1989). Support also involves a departure from the maintenance state. "*Support*

is an extended process which is characterized on the one hand by relative lack of variation and on the other by the easy availability of the resources necessary to maintain life" (Lawton, 1989). The ideal environment presents to the individual a mix of these three functions. An important conclusion of this theory is that too little stimulation is as dangerous as too much stimulation. It is thus especially incumbent upon both environmental planners and service deliverers to be sensitive to the risks of overreacting to the impairments associated with ageing or with illness by restricting press level too much.

Lawton's ecological model of ageing is widely accepted by gerontologists and environmental psychologists. *"The applications of knowledge have been particularly useful in compensating for behaviours impaired by the physical illnesses that become more prevalent with ageing. Some research has also documented environmental transactions made with the intent of choosing, creating or shaping environments that increase need fulfilment" (Lawton, 1990). The view presented by this model is too narrow though, in that it solely accounts, or at least heavily emphasises the competence of the elderly individual. Personal characteristics are not included in the model. This demonstrates the fact that the elderly are still often viewed as a homogeneous group of people with decreasing competence. Still individuals may react very differently, even if their competence and the environmental demands are similar. "In this sense, older people with similar health statuses or functional disabilities may exhibit variant behavioral responses depending on their conception of their residential environment" (Wister, 1989). The model to be developed here should incorporate competence as well as other attributes of the ageing individual.*

Other researchers have also identified some weaknesses in Lawton's ecological model. Carp and Carp (1984) indicate that the press-competence model has not adequately dealt with people's needs and preferences, and that the environment is characterized by resources as well as demands. Also, environmental press are still very poorly conceptualized and operationalized (Lawton, 1982). Further, Rowles and Ohta (1983, cited by Wister, 1989) argue that researchers should adopt a more holistic approach to person-environment transaction rather than limiting their work to a single element, such as design of the dwelling. Wister (1989) states that one of the consequences of this approach has been the adoption of an implicit assumption that there is an ideal environment given any set of competencies. *"This has led to the omission of other factors, especially those that capture the active role that the individual assumes, such as attitudes, knowledge, preferences, and perceptions" (Wister, 1989). A model that does stress both individual needs and preferences is Kahana's (1982) model of P-E congruence.*

1.7.2 Kahana's Congruence Model of Person-Environment Interaction

In 1975 Kahana developed a congruence model of person-environment (P-E) fit as a basis for studying the dynamics of adjustment of older people to particular residential or therapeutic environments. Her model, like Lawton's, also has roots in Lewin's notion that behaviour is a function of the relationship between the person and his environment and in Murray's need-press model of human behaviour. She

suggested that neither E nor P characteristics themselves predicted morale or wellbeing, but rather the fit between individual needs and characteristics of the environment. "*All of these studies reflect the recognition that one must go beyond asking the question: Which environments contribute to the wellbeing of older people? We must ask not only 'is it good?' but also, 'good for whom?'*" (Kahana, 1982). No congruence between press and need will lead to modification of the press or to the individual's leaving the field in a free choice situation.

Since in older age the free choice range is likely to be reduced due to reduced income, health and social roles, the older person may have more problems in maintaining or finding an environment in keeping with his preferences. According to Kahana (1986), adaptive strategies may serve to reduce mismatch either by changing needs or by changing the environment. Since opportunities for the second alternative may be diminished in old age, the elderly may more frequently engage in changing their needs. Wister's (1989) findings correspond with this assumption. He reports: "*The most striking finding is the tendency for older elderly to engage in psychological processes of adaptation to a greater extent than altering the physical or social characteristics of the home environment*". As was discussed earlier, environmental adaptation requires a certain degree of freedom and of control in the individual. This suggests that in order to stimulate environmental adaptation instead of cognitive adaptation, we have to increase environmental control/mastery among elderly residents.

The concept of congruence is used frequently in discussing satisfaction of the elderly with their environment. Rapoport (1982) states: "*Congruence is an extremely broad concept and may, in fact, act as almost a metamodel if seen in this way. Congruence involves matching needs, desires, and so forth with environments, involving various human characteristics and fitting environments to them*". The model presented by Kahana could be very useful in this research. I would like to suggest some alterations though. In the first place, Kahana's dimensions of congruence are based on institutional living environments. For independent housing, some dimensions may have to be altered. Secondly, Kahana's model seems to neglect the case of congruence with the symbolic and meaning aspects of the environment (Rapoport, 1982). Especially in designing housing for the elderly, the (symbolic) meaning of home should not be disregarded. And thirdly, since there are so many changes in the life of the elderly, a model of congruence between P needs and E characteristics should be more dynamic. Congruence between needs/desires and the environment may decrease gradually. Questions then arise such as at what point do individuals reach a threshold whereby they are motivated to adapt their social or physical environment or their own needs?

1.7.3 Carp's Complementary/Congruence Model

In Kahana's model, person and environment characteristics all influence behaviour (or wellbeing) indirectly, via the concept of congruence. There will be certain person or environment characteristics though that influence behaviour and wellbeing directly, as formulated in Lawton's model. These ideas are

not necessarily mutually exclusive. There is the possibility of combining the ideas of these two models into one. A similar suggestion was made by Carp & Carp (1984).

The model distinguishes between two categories of needs: lower-order or life-maintenance needs and higher order needs. The kind of relationship between the environment and the individual is different for these two categories:

- with lower order needs, the environment has to be complementary (compensatory) to the competence of the individual, important person variables are the competence to perform activities of daily living, environment characteristics that are important here are mainly the demands put on the competence of the individual (Lawton's model)
- with higher order needs, the environment has to be congruent (similar) to the needs of the individual, important person variables are these **higher order needs and personality traits** relevant to the environment, environmental characteristics that are important here are her resources to meet the needs/desires of the individual.

The possible outcomes of the interaction between the person and his/her environment are behaviour in, perception of and satisfaction with the environment, life satisfaction and mental health and continued (independent) living.

In the first part of the model, on the lower order needs, the person and environment characteristics themselves play the most significant role in affecting the outcomes. These characteristics have positive-negative valences. In the second part of the model, on the higher order needs, relevant person and environment characteristics do not necessarily have positive-negative valences, but the degree of fit between the two is considered to have the major influence on the outcomes. A major strength of Carp's model is the inclusion of objective environmental attributes: *"If a study is to produce results useful in improving environments, and to clarify theory regarding P-E transactions, one set of independent variables must be the attributes of the physical world which can be measured independently of the resident"* (Carp & Carp, 1984). The inclusion of P*E congruence into theoretical models has often been hindered because of the lack of commensurability between measures of P and E. Due to the requirement of measuring P and E on common scales, objective characteristics of the physical environment could not be included. Carp assumes the following though: *"Our assumption is that the necessity is not measurement of P and E on common scales, but empirical tests of relationships hypothesized on the basis of a conceptual model, using measures of P and E obtained independently of each other"*. She suggests the use of multivariate regression analysis, in which the congruence term is added after P and E. Empirical evidence demonstrating effects of person by environment congruence on wellbeing is still scarce (Christensen, Carp, Cranz, & Wiley, 1992). Although in 1984, Christensen did find significant congruence effects involving the psychological needs for order and privacy. He argues that alternative formulations of person, environment, congruence, and/or outcome variables may yet produce positive findings.

1.8 Conclusion

If we view the research on ageing people in their home environment there are some very intriguing findings:

- elderly people tend to give high satisfaction-scores,
- elderly people tend to engage in cognitive adaptation rather than environmental adaptation,
- the elderly are a very heterogeneous group of people,
- there has been little empirical evidence of a relationship between congruence (between needs/wishes and the environment) and wellbeing or life satisfaction.

Due to these and other findings, the use of the theories discussed above may not lead to valuable new results. We have already discussed the problems that arise when we try to make an inventory of all the needs of elderly people. While these studies may be useful on a regional, national or higher level, for something as personal and close as the home, the heterogeneity of needs and wishes and the dynamical character of these wishes has led us to believe that trying to build the perfect house that is congruent with every need is sheer absurdity. Apart from this fact, we have to ask ourselves whether we would want to provide the elderly with the perfect solution to every problem they are faced with, without them having to undertake some action for it. This in view of research findings on hospitalisation and learned helplessness.

Satisfaction research among the elderly may also lead to problems. Although findings from these investigations may seem very positive, tentatively a large group of people agree that reality may not be as rosy as these outcomes make us believe. High satisfaction scores may be due to a longer process of getting used and attached to a situation, to reduction of cognitive dissonance, past life events, the former living situation, adaptation or other obscure processes. But in spite of these high measures of satisfaction, problems of the elderly in their housing situation are a known fact. Therefore we should be careful in considering these positive outcomes.

Adaptation theories do provide a lot of interesting material as to what possible adaptation strategies people use and sometimes they can even give some indication of why people choose a certain strategy. Still, they do not explain why older people would sooner engage in passive than active adaptation. In order to study this, we need a new approach to these processes. What is missing until now is a dynamic view of the adaptation process. The dimension of time is an important aspect here.

Let us try to view the individual in his environment as a dynamic system, in which the individual is constantly striving for balance. Interruptions or changes in the system have to be reacted to in order to find the right balance again. These interruptions may originate in the (physical or social) environment or in the individual. Several regulatory actions (adaptation strategies) are possible. It is up to the individual to choose and undertake the proper one.

What I have described so far is a universal process: every individual is constantly striving for balance within the person-environment system. In earlier research however we have seen that regulatory actions undertaken by the individual differ with age: younger people tend to engage more in environmental, versus older people more in cognitive adaptation. Questions that arise then are:

1. Are people/individuals always at the same level able to save the balance between needs and affordances within the person-environment system, or is there a change/decrease with age. (For instance we can imagine that as regulatory processes take more time and changes in the system happen more frequently, occurrence of imbalance is more likely).

And if there is a change or decrease in regulatory competence:

2. What regulatory actions are/have to be taken more often?
3. Can we influence/train regulatory actions? (How can we increase regulatory capacity/competence among the elderly?)
4. Which possibilities for flexibility/adaptability have to be built in in the environment?

We have to drop the idea of building the 'ideal' housing environment for an (ageing) individual. Among other things, heterogeneity and dynamics urge us to investigate the adaptation process more carefully for our target group. Because of the dynamic character of this process, we have to study it over time. Looking at the outcome of adaptation processes at a given moment in time will never give us the kind of information to be gained when studying the process as a whole: from the moment on which the interruption occurs, until the regulatory activities have been executed and balance is restored.

If we are able to discover the answers to the questions raised above and the determinants of the adaptation process, then maybe we can enable elderly people to adapt actively and more successfully to changes taking place in their lives. Enabling them may have implications for both person and environment:

- train or educate the individual,
- provide the right flexibility/adaptability in the environment.

The concept of control is a very important aspect here: control may influence wellbeing indirectly via the kind of adaptive strategy (active or passive) chosen to reach congruence or consonance, but directly as well (Gall, 1983; Houben, 1987; Altholz, 1989). These relationships may be uni- or bidirectional, but cyclical or rather spiralling relationships are conceivable as well. For instance an individual who chooses to adapt the environment and is successful will probably have a stronger feeling of control and is more likely to choose this alternative again, whereas individuals who adapt their wishes may 'lose touch' with the environment, feel less in control over the environment etc. Additional research on these relationships is necessary.

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