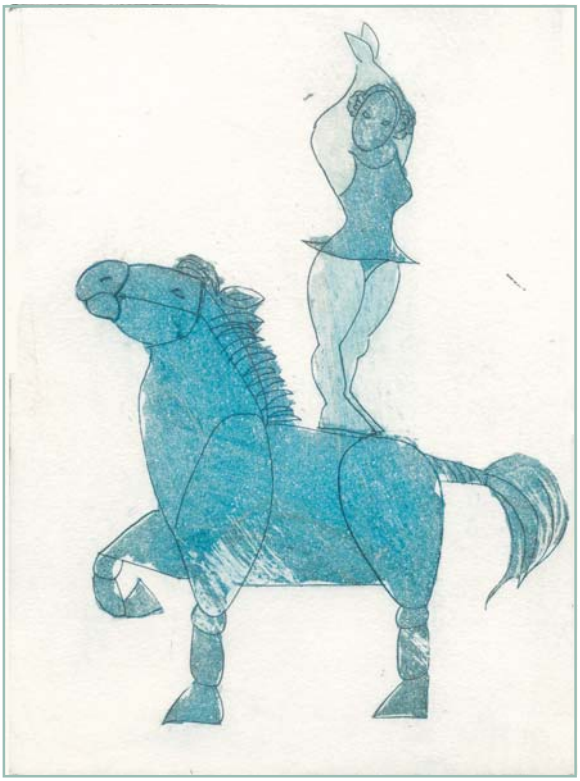
JYVÄSKYLÄ STUDIES IN EDUCATION, PSYCHOLOGY AND SOCIAL RESEARCH
276

Virpi Uotinen

I´m as Old as I Feel

Subjective Age in Finnish Adults



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UNIVERSITY OF JYVÄSKYLÄ

JYVÄSKYLÄ 2005

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ABSTRACT

Virpi Uotinen
I'm as old as I feel. Subjective age in Finnish adults
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The aims of the study were to explore the patterns of subjective age among Finnish adults and to examine whether subjective age would be associated with indicators of health, well-being and functioning. Further, the aim was to investigate potential cross-cultural differences in subjective age. Subjective age was defined as the dimension of age that reflects age as experienced by an individual. The study, reported in four original articles, was part of the Evergreen project, a longitudinal and multidisciplinary research programme, based on samples that were drawn from the inhabitants of Jyväskylä, Finland. In studies 1-3 the participants were aged 65 to 84 years. They were interviewed in their homes in 1988 (N = 1,224) and 1996 (N = 663), and their mortality was followed up for 13 years. The participants of study 4, conducted in 1992, were aged 25 to 64 years (N = 1,355) and answered a mailed questionnaire concerning attitudes towards ageing. The participation rates in studies 1-3 were 80%-88% and in study 4 total of 61.5%. Subjective age was indicated by feel age, ideal age, mental age, and physical age. Additional questions concerned age weighing, the onset of old age, and willingness to live 100 years. In studies 1-3 information on participants' physical and mental status and social situation was gathered. The results showed both stability and bi-directional change in subjective age. Men and women did not differ in their feel age but women reported higher ideal age in all age groups. The associations found between subjective age and indicators of health, well-being and functioning were in line with previous studies, suggesting that subjective age is a valid measure of the personal ageing experience. The association found between subjective age and mortality in study 3 suggests that older subjective age may be an early indicator of worsening health in older people. Cross-cultural comparison conducted in study 4 between Finnish and North-American age groups, showed that Finns typically had higher feel and ideal ages than their North-American counterparts. This suggests that socio-cultural context needs to be taken into account in research on subjective age.

Key words: subjective age, age identification, aging experience, follow-up study, Evergreen project

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Jyväskylä, October 2005 Virpi Uotinen

CONTENTS

LIST OF ORIGINAL PUBLICATIONS

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Uotinen, V., Suutama, T. & Ruoppila, I. (2003). Age identification in the framework of successful aging: A study of older Finnish people. *International Journal of Aging and Human Development*, 56, 3, 173-195.

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1 INTRODUCTION

1.1 Multidimensional age

The subject of this study is age as experienced by an individual. Typically age is employed as an index of length of life. However, it is often used when explaining behaviour: for example, "she gets easily tired because she is eighty years old". Age, in this case, implies several expectations as to the biological state, fitness and functioning of the person in question. Age also structures our social existence and binds us to society: we proceed from day care to school, achieve legal adulthood, enter working life and finally retire, all at prescribed ages. Several rights and obligations are tied to particular ages and defined by law such as, for example, entering school, the right to vote, or the right to apply to a driver's licence. Age also contains a number of unofficial norms and agreements that define what is possible and what we can expect in different life phases (Marin, 1996; Neugarten & Neugarten, 1987; Nikander, 1999; Riley, Foner & Waring, 1988; Tikka, 1991; 1994).

Certain concepts referring to age, such as 'puberty age' or 'menopausal years', are good examples of the multidimensional nature of age (Laslett, 1989; Marin, 1996; Rantamaa, 2001; Tikka, 1991; 1994). These terms refer to age-related changes and life course transitions that are not only biological and maturational but also psychological and social in nature. According to Laslett (1989; 24) "An individual may be thought of as having several ages, though not entirely distinct from each other, and related in slightly confusing ways, because they differ somewhat in character: a chronological age, a biological age, a personal age, a social age or even ages, and a subjective age". Each of these dimensions offers somewhat different ontological approach to age. This multidimensionality implies that we do not age only physically (biological age), but also in relation to our social world (social age) and to our personal goals and intentions (personal age) as well as in relation to what we feel we are on the 'inside' (subjective age).

Meanings that are attached to different age phases and life course transitions are socially and culturally constructed. They are transmitted in social interaction through language. As individuals, we use cultural information about the normative transitions expected at the certain points in the life course, not only

when interacting with other people but also when constructing our identity. In most cultures age and gender are crucial social categories that people use when they interpret and evaluate their lives (Fry, 1988; Laslett, 1989; Rantamaa, 2001). This very linkage that exists between age and identity makes the concept of age very interesting from the point of view of psychology. Identity, in this context is understood as a multifaceted and dynamic system of interpretative structures that regulate and mediate behaviour (Herzog & Markus, 1999).

The awareness of age as well as the experience of growing older are inherent components of the self in adulthood (Keith, Fry, Glascock & al., 1994; Peters, 1971; Ryff, 1991). In the context of gerontology, the concepts 'subjective age' (also termed 'perceived age', 'self-perceived age', or 'self-perception of age') or 'age identification' are used as a conceptual framework when studying individuals' personal perceptions of the ageing process. Both of these concepts are used in empirical studies to refer to self-perceptions of age. Theoretically, however, a distinction should be made between these concepts. Subjective age refers to the construct of age as experienced by an individual, whereas age identification points to processes of identity (self-concept) in the life-course in relation to age (Barak, 1987). Overall, these terms offer access to the ageing experience, an area of research that is relatively new in psychogerontology (Steverink, Westerhof, Bode & Dittmann-Kohli, 2001).

1.1.1 Chronological dimension

Chronological age or calendar age is a numerical index of the length of life typically measured in years since birth (Laslett, 1989; Marin, 1996). It is also the most dominant dimension of age and is often present in the other age dimensions as well (Hoikkala, 1993; Rantamaa, 2001). Chronological age is typically used in institutions such as those related, for example, to education, research, family and work. Overall, attitudes towards chronological age among people living in Western societies are said to be ambivalent (Palmore, 1990; 2001). On the other hand chronological age is seen as a very personal matter but it is also often treated as a matter of public interest, as in the case of mentioning the chronological ages of celebrities (Laslett, 1989).

In our society, the fine line between late middle age and old age is often set at the age of 65 years. However, nowadays the vast majority of people have already retired before that age. Current cohorts reaching this chronological age are also healthier and have better functional capacity compared, for example, with their parents at the same age. According to longitudinal findings, a significant variation exists in the timing and quality of the changes that occur in late adulthood for example in cognitive functioning (Schaie, 2004). Although chronological age is typically used as a background variable in empirical studies, at least in the context of epidemiological studies focusing on the health, well-being, and functioning of ageing people, increasing interest has also been shown in age concepts complementing those of chronological age (Barnes-Farrell & Piotrowski, 1989; Kuper & Marmot, 2003).

1.1.2 Biological dimension

Age is often treated as an index of capacity in various domains. Biological age or physical age reflects an individual's physical status and is based on changes in health, fitness, functioning, and appearance (Laslett, 1989; Rantamaa, 2001; Tikka, 1991; 1994). It rests on an assumption that years since birth coincide with successive states of body functioning and that individuals' physical functions are measurable in relation to age (Laslett, 1989; Rantamaa, 2001). Biological age is thus measured by indices that depict the physiological state of a person. Also, the term of functional age is used when emphasising the measurability of biological functions in relation to age (Era, 1981; Finkel, Whitfield & McGue, 1995). In addition, information about biological age is obtainable from an individual's own perceptions of his or her functioning or appearance in relation to a particular age (Kastenbaum, Derbin, Sabatini & Artt, 1972; Tikka, 1991; 1994). Different individuals, born in the same year, may vary a great deal both in their clinically assessed and self-perceived physical and health status and functioning. It is also notable that different criteria are often used when estimating biological age for men and women (Aapola, 1999; Julkunen, 2003). A facet of biological age that focuses on an appearance is termed look age (Barak & Schiffman, 1981; Kastenbaum et al., 1972). As with biological age, different criteria are often set for men and women (Lipka, 1987; Sontag, 1979).

A person may have several biological ages. Old people may, for example, describe their arteries as old but their eyes as young (Johnson & Barer, 1997; Krauss Whitbourne & Primus, 1996). From the psychological point of view this is a good example of the resilience of the ageing self, as it shows that people select and reorganize their criteria for biological ageing.

The concept of 'psychological age' is used to refer to phases of an individual's psychological development in various domains such as cognitive functioning, personality traits, or behaviour (Graham, Minitski, Mogilner & Rockwood, 1999; Rantamaa, 2001). There are, however, different interpretations of this age concept. Laslett (1989; 25) states that "psychologists of ageing distinguish psychological from biological age, here considered as one, and add functional age which I find difficult to distinguish from psychological." I would argue that understanding psychological age as only a subcategory of biological age is rather a narrow interpretation of the concept. Rather, I would see psychological age as a broader dimension that covers such mental representations that link age with different psychological constructs.

1.1.3 Social dimension

According to Riley (1996), age operates in complex and subtle ways to locate people of every age in society. It operates directly through laws and contracts but also indirectly, in association with other factors such as biological state (e.g. sexual maturity, menopause). For example, after a certain age a person is allowed to vote or get married. Biological states, in turn, impose limits on functions, for example menopause limits motherhood, or declines in muscle strength or vision exclude

people at a certain age from certain occupations. Social age reflects various norms and expectations that are related to age and define the ways in which men and women are expected to behave, look, present themselves and communicate with other people. Social age (or public age) refers both to the life phase of a person and to the social status he or she occupies in a given society (Laslett, 1989; Rantamaa, 2001). The social dimension of age often becomes visible only when people behave in a manner that violates the existing age norms and expectations.

Overall, awareness of the social roles attached to different life phases helps us to structure our lives (Riley & al., 1988). A person can be of several social ages, typically seen in the social roles he or she occupies. For example, somebody is, at the same time, a middle-aged mother and a young researcher. The concepts the 'third age' and the 'fourth age' (Laslett, 1989; Tikka, 1991; 1994) also describe the social dimension of age and refer simultaneously to social and to functional age. These age concepts divide later life into two distinct periods that depict the relationship between an individual and his or her social environment. The third age is described as a period of opportunities and freedom from obligations related to work and family whereas the fourth age is seen to include serious losses in health and functioning and increasing dependence on the help of others (Laslett, 1989; Tikka, 1991; 1994).

1.1.4 Subjective and personal dimension

Laslett (1989) coined the terms 'personal age' and 'subjective age' to describe age as a personal experience. Personal age is defined by Laslett (1989) as an individual's personal project or a certain moment in the life course which she or he judges to have been reached in relation to personal aims. Subjective age, as Laslett (1989) defines it, opens up an even more personal and existential point of view on age than that of personal age. Subjective age has a succession of events within it but no passage of time. Although a person can feel that personal, social and public ages change, subjective age may remain constant. Laslett suggests that awareness of subjective age often occurs in later life. Laslett's (1989) definition of subjective age may refer to the same phenomenon that is known as the 'ageless self' by Kaufman (1986) or as 'the mask of ageing' (Featherstone & Hepworth, 1993) pointing at the experience of people who report strong stability in the sense of a self that is unchangeable in spite of the age changes that occur in the body.

According to Tikka (1991; 1994), the difference between personal and subjective age is that latter refers to self-related issues in the deep psychological sense whereas personal age can be seen as tied more closely to the individual's immediate socio-cultural situation. Personal age and social age differ in that the latter is socially constructed, implying an idea of chronological time (Tikka, 1991; 1994). Personal age is reflecting more clearly an individual's experience of the self, the activities and relationships he or she is having in a given culture. It is also notable that personal age does not necessarily imply an idea of chronological ageing. According to Tikka (1991; 1994), the difference between personal and social age is that the latter is bestowed as defined by society and implies an idea of chronological time. Personal age, in turn, emphasises the individual's personal

experience, actions and relations within the culture, and doesn't necessarily include a chronological dimension.

In empirical research focusing on personal perceptions of age, meanings often quite different from those of Laslett's have been attached to the concepts of subjective age and personal age. In most cases, the terms subjective age and personal age are used as synonyms referring to an individual's personal perception of his or her age. The concept of personal age was originally presented by Kastenbaum and colleagues (1972) in an attempt to measure subjective perceptions of age in survey studies. 'The Ages of Me' (Kastenbaum et al., 1972) consists of a set of questions concerning the various facets of age. Later, these questions were elaborated by Barak and Schiffman (1981) and labelled 'cognitive age'.

In my view, subjective (or personal) age, in this context, first and foremost reflects age as an individual experience. As such, it is the opposite of a construction of age that is tied to 'objective' indexes of age such as length of life, or date of birth. The concept under study is often defined simply as "self-perceived age or the age that one feels" (Galambos, Kolaric, Sears & Maggs, 1999; 310). Some definitions include an evaluative dimension such as "personal assessment of one's relative position in an age-graded system" (Hendricks, 1995; 34) or "a reflection of the way people view their roles in society, based on their own positions in the life cycle" (Henderson, Goldsmith & Flynn, 1995; 448).

Ideal age (also termed desired age) should be mentioned among the age concepts that reflect age as a subjective experience. Ideal age depicts the age a person would like to be (Barak, 1998; Barak & Gould, 1985; Hubley & Hultsch, 1994; 1996) and thus describes representations of the ideal self in time. As such, ideal age reflects a possible self (Markus & Nurius, 1986) that guides and motivates the individual's behaviour. In empirical studies, ideal age is typically treated as a component of subjective age (Hubley & Hultsch, 1994; Kaufman & Elder, 2003; McCann, Kellermann, Giles, Gallois & Viladot, 2004).

Although the conceptualization of age as a multidimensional construct (Laslett, 1989) contributes to the conceptual framework of my study, I have nonetheless employed the concept of subjective age in line with the tradition in subjective age research (Barak, 1987; Kastenbaum et al., 1972). This research tradition emphasises subjective reflections an individual's age in contrast to indicators that are not defined by the person himself or herself. Subjective age is thus understood as a concept that reflects cultural and personal meanings that a person relates to his or her age. This also implies that information about the other age dimensions is attainable via the concept of subjective age. For example, the study of self-perceptions of age in terms of health and functioning can be seen to reflect biological age from the point of view of the subjective dimension of age (Kastenbaum et al., 1972).

Overall, Western cultures have been said to celebrate youth and to devalue old age (Fry, 1996; Palmore, 2001; Pasupathi & Löckenhoff, 2002). This has also been found to be reflected in expressions of subjective age while from middle age onwards adults have been shown to resist their chronological age and report a discrepancy between their actual and subjective ages (Barak, 1987; Westerhof & Barrett, 2005).

1.2 Linking the concepts of subjective age and self

Examining age as a subjective experience focuses attention on psychological constructs such as *identity* and *self-concept* that are used when referring to selfhood in time (Herzog & Markus, 1999; Krauss Whitbourne & Primus, 1996). In this context identity is thought to form an organizing schema through which an individual interprets all his experiences – including those related to age and ageing. The term self-concept is often used instead of identity in studies focusing on social cognition and ageing (Blanchard-Fields & Abeles, 1996). Perceptions of personal ageing are also linked to the concept of the *possible self,* which is a representation of the self in the future (Markus & Nurius, 1986; Ryff, 1991). Possible selves provide an evaluative and interpretative context for current views of self and contribute to interpretations of personal progress or decline over time (Ryff, 1991).

Identity is often divided into *personal* and *social* (Deschamps & Devos, 1998; Helkama, Myllyniemi & Liebkind, 1998). Personal identity refers to the unique characteristics of a person that distinquish him or her from other people. Social identity, in turn, refers to feelings of similarity that a person has with other people or groups, and contains information about the relevant group memberships of a person (Deschamps & Devos, 1998; Helkama et al., 1998). Group memberships are often described by social categories typical of a given culture such as, for example, 'a woman', 'a worker' or 'a middle-aged'.

When focusing on the linkage between subjective age and identity, it is necessary to take a closer look at the various conceptions of identity that exist. According to Hall (1992) three different conceptions prevail. The first of these, the 'enlightenment subject', is based on a view of the human being as a fully unified individual whose 'centre' consists of an inner and inborn core. The self is seen as relatively autonomous, self-sufficient, and less prone to changes. The second conception, labelled the 'sociological subject', reflects the growing complexity of the modern world. The self is seen to be formed in relation to significant others who mediate the values, meanings and symbols of the culture. Identity, according to this view, is formed in interaction between self and society. Although a subject has an inner core, it is formed and modified in dialogue with symbolic worlds 'outside' of the identities they offer (Hall, 1992). Finally, there is a 'post-modern subject' that is conceptualized as having no fixed or permanent identity. Identity, according to this view, is continuously formed and transformed in relation to the ways a person is addressed in the surrounding cultural systems.

Although I have greatly simplified the conceptual distinction of self explicated by Hall (1992), the way it opens up the potential linkages between self-construal and social context is useful when focusing on the formation of subjective age over the life course. When studying age identification, conceptualizations of identity that are based on an idea of self that is both flexible and socially and culturally constructed are helpful. In this context the self is seen as a system that is simultaneously a social construction and a social constructor that is "intimately

involved in the negotiation of the life span", as described by Herzog and Markus (1999; 229). This means that people not only incorporate individualized meanings in their self-systems but also construct the world using the social and cultural categories available to them (Oyserman & Markus, 1993). According to this research tradition the self is understood as multifaceted, dynamic, selective, and creative system of interpretative structures. This system regulates and mediates behaviour as well as reflects and incorporates what others think of the person, how the person is treated, who the relevant others are, and what the person makes of all this (Herzog & Markus, 1999).

The processes of change and stability of identity can be described by the concepts of 'assimilation' and 'accommodation' (Brandtstädter, 2002; Krauss Whitbourne & Primus, 1996). Assimilation enables the maintenance of identity. A person may, for example, select information that supports his or her self-schema and avoid such information that may threaten it. The process of identity accommodation, in turn, involves changing one's identity in response to various identity-relevant experiences. As the interpretation of age identification typically relies on the reasoning that more negative than positive views are attached to ageing process, the relationship between subjective age and self construal opens from the viewpoint of assimilation and adaptation; the way we define ourselves in terms of age should not threaten our self-concept.

Self conceptions are formed on the basis of comparisons: comparisons with one's former self (temporal comparison) or comparisons with actual or imaginary others (social comparison). Chronological age referents are often used in social comparisons. For example, findings on self-perceived health suggest that older people define their current health status more often in relation to age referents than their former health status (Helin, 2000; Jylhä, 1994; Leinonen, 2002). As subjective age reflects the expectations and perceptions that people have of the changes that typically accompany ageing, negatively biased age stereotypes may, paradoxically, even be seen to help an ageing individual to maintain a positive self-concept. While overestimating developmental losses in various life domains age stereotypes provide information that allows a person to see him/herself as better-off in comparison with same-aged peers. Indeed, social comparison, particularly social downgrading (comparing oneself with less fortunate others), has been shown to increase in the later half of life (Heckhausen, 1992; 2002; Heckhausen & Brim, 1997; Heckhausen & Krueger, 1993; Schulz & Fritz, 1987; Sherman, 1994).

Self concept in relation to age implies reference to mental representations of ageing that include the events and attributes that mark particular life stages and life course transitions (Furstenberg, 2002). One line of research in this area has examined culturally shared age norms that affect the way people time various life events (Settersten, 1997; Settersten & Hagestad, 1996a; 1996b). These findings suggest that there are culturally shared timetables for transitions in various life domains such as work, education and family. However, these timetables may be more flexible than earlier studies indicated (Neugarten & Hagestad, 1976; Settersten, 1997; Settersten & Hagestad, 1996a; 1996b). Studies focusing on culturally shared beliefs about changes in personal qualities across the adult life span suggest that adults regardless of chronological age have more similarities

than differences in the ways they see the timing, desirability, controllability, and temporal ordering of changes in personal qualities across adulthood (Heckhausen, Dixon & Baltes, 1989). Overall, the later years of life are seen to include developmental losses more often than gains. The findings suggest that adult age groups sharing a similar cultural background also have similarities in their cognitive model of development over the life-course.

Studies on individual beliefs and experiences about one's own ageing contribute to the knowledge of the self concept related to age (Furstenberg, 2002; Ryff, 1991). For example, Steverink and colleagues (2001) suggested in the context of the 'German Ageing Survey' that the personal experience of ageing in the second half of life is both multidimensional and multidirectional in nature. The study was based on a home interview and a questionnaire focusing on the personal ageing experience among 4,034 Germans aged 40 to 85 years. The notion of multidimensionality was based on the findings that the ageing experience was expected to be framed not only in terms of physical decline, such as the loss of vitality and health, but also in terms of continuous growth in personal development. The third dimension related to losses in the social domain, such as no longer being needed by others or decreased respect from others. The notion of multidirectionality was based on findings that suggested the ageing experience to be characterized by both gains and losses. Seeing ageing as continuous growth, was associated with a respondents' younger age, better subjective health, a higher income, less loneliness, and a higher educational level. The chronological age of the respondent influenced the three dimensions of the ageing experience rather strongly. Only a few resources had a stronger impact on the dimensions of the ageing experience than actual age: subjective health on the experience of physical decline, a high level of hope on seeing ageing in terms of continuous growth, and experienced loneliness and a low level of hope on the experience of ageing in terms of social loss.

Another recent study conducted in the context of the 'German Ageing Survey', also informs of the content of the personal ageing experience. Timmer, Steverink, Stevens and Dittmann-Kohli (2003) examined the content of the personal concepts of stability in the second half of life and of issues that people typically combine with the idea of no-change. Participants, whose age range was 40 to 85 years (N = 2,934) completed a sentence completion instrument. Content analyses of their answers indicated that two thirds of the statements of no-change referred to the maintenance of the status quo in relation to resources (health, being able to live on one's own, and physical and mental well-being) and life-style (attributes, behaviour, living patterns or life in general). The rest of the statements of no-change pointed to continuation of projects yielding gains (work and achievement, travelling and new experiences, and commitment to others). The anticipated gains, however, were thought clearly to diminish with age in the most of the content areas.

Finally, one might ponder whether developmental changes in the self-definitions of old and very old people may be seen in self-perceptions of age as well. Freund and Smith (1999) in the Berlin Ageing Study examined the potential differences in self-definitions among groups aged 70 to 84 years and 85 to 103

years. Although health was a more central theme of self-definition among the older age group and they mentioned the domains of family and relatives less often than the younger group, more similarities than differences were found in the content of self-definition between these two groups. Heikkinen (2004), in turn, studied the experienced ageing over a ten-year period by using a narrative method. The persons involved were 80 years of age in the first phase of the study (Heikkinen, 1992-1993). Her findings contradicted to some extent those reported in the cross-sectional study by Freund and Smith (1999) while showing that most of the narrators seemed to have grown accustomed their 'bodily burden' and rarely had any complaints. Their perspective on the future had changed and they felt that they had already crossed the line into old age during the past ten years. It is likely that differences between these two studies can partly be explained by the different methods used. From the perspective of age identification, however, such findings on the content of experienced ageing 'in the course of old age' may open up interesting and challenging research agendas. One can well expect the relationship between age and identity to be both individually and culturally constructed.

1.3 Findings on subjective age

Subjective age has been studied by psychologists (Barnes-Farrell & Piotrowski, 1989; Braman, 2003; Henderson & al., 1995; Hubley & Hultsch, 1994; Knoll, Rieckmann, Scholz & Schwarzer, 2004; Montepare & Lachman, 1989), sociologists (e.g. Barrett, 2003; Kaufman & Elder, 2003; Markides & Ray, 1988; Puohiniemi, 2002), epidemiologists (Kuper & Marmot, 2003), scholars in communication studies (McCann & al., 2004), and consumer researchers (Barak, 1998; Stephens, 1991). Consequently, a number of various potential correlates of subjective age have been explored, reflecting the particular interests of the discipline under question.

The vast majority of studies on subjective age are based on cross-sectional data. This is surprising considering the fact that the concept in question reflects a dynamic and time-linked process, i.e., ageing. Another observation that can be made after reviewing the empirical research on subjective age, which has been conducted since the 1960s, is that the explanatory framework is based, first and foremost, on sociological theories. Although psychological constructs such as positive and negative affect (Chua, Cote & Leong, 1990; Hagen, Fricke, Oswald & Rupprecht, 1999; Westerhof & Barrett, 2005), personality traits (Hubley & Hultsch, 1994; Knoll & al., 2004), and locus of control (Baum & Boxley, 1983; Hubley & Hultsch, 1994; Linn & Hunter, 1979) have been examined in studies focusing on subjective age, far fewer attempts have been made to base the findings on theories drawn from psychology. It would almost seem that theory and empirical research in this field have been grown in different directions.

Barak and Stern (1986) have divided the potential correlates of subjective age as follows: 1) biological and physiological correlates (i.e., objective health status or self-perceived health) 2) demographic correlates (i.e., gender, marital status,

socioeconomic status), 3) psychographic and social psychological correlates (i.e., life satisfaction, emotional health, morale), and 4) behavioural correlates (i.e., consumer behaviour, leisure time activities). The relationship between subjective age and various factors indicating health and well-being have especially been the focus of interest in the more recent work (Barrett, 2003; Kuper & Marmot, 2003; Tepas & Barnes-Farrell, 2002).

Next, I shall focus on four issues: first, the measures used to elicit subjective age in the context of survey studies, second, the empirical findings on the characteristics of subjective age over the life-course, and third, the research on the relationship between subjective age, well-being and functioning especially in older adults. Finally, I shall present some theoretical and empirical observations on the societal and cultural factors that may provide insights on age as a subjective experience.

1.3.1 Examining subjective age

Generally, subjective age has been in most cases examined by employing a cross-sectional design. Single or multi-item questions or statements not referring to any particular context have most often been used in examining subjective age (Barak, 1987; Barak & Stern, 1986; Cutler, 1982; Hendricks, 1995). Adjective check-lists, semantic differentials, or self-selected descriptions have been used much less often.

As noted earlier, self-evaluations, such as those in terms of age, have been based on social and temporal comparisons (Braman, 2003). Subjective age measures can also be divided either into person-oriented measures or primarily context-oriented measures, whether they involve explicit comparisons with specific reference groups or not (Cleveland & Shore, 1992). Subjective age measures that are primarily person-oriented do not imply any specific comparison. For example feel age (Barak, 1987), which is one of the most widely used subjective age questions, is typically elicited by the question "What age do you feel on the inside?" with no reference to context. Context-oriented subjective age measures, in turn, involve a specific comparison with another individual or group (e.g. a response to a statement "I am older than most people in my work team"). Cleveland, Shore and Murphy (1997) found that although considerable correlations existed between the answers given to person-oriented and context-oriented subjective age questions, those given to the former showed more stability over time.

In studies conducted in the 1980s and earlier, the identity age measure was often used in studying subjective age. Subjects were asked to identify themselves with age-referent groups such as "middle-aged", "elderly", or "old" (Barak & Stern, 1986). Identity age is a somewhat problematic subjective age measure because it employs cultural age categories that are often confusing, for example, regarding the start and end of a certain age phase (Fry, 1976). There is also variation between studies in the exact wording of the response options.

Table 1 contains a summary of the age measures used in studies published between the years 1990 to 2004. The list of studies was drawn from PsycINFO in April 2005 by employing search phrases 'subjective age' and 'age identification'.

This overview, although not complete, allows some observations of the frequency with which the various subjective age measures have appeared in the recent literature on age identification. In addition the table provides information on the quality of data these studies have been based on.

As shown in Table 1, the cognitive age measure (Barak & Schiffman, 1981) or modified versions of it (Galambos & al., 1999; Montepare & Lachman, 1989) have often been used to indicate subjective age. The advantage of this measure is that it captures several facets of subjective age while focusing on feel age (the age a person feels), look age (the age a person thinks she or he looks), do age (the age a person perceives him/her self to act), and interest age (the age a person perceives to reflect his/her interests). A respondent is asked to specify for each age dimension an age decade that describes his or her subjective age. The sum score is computed by averaging the midpoint of the measure's four age dimensions. This subjective age measure can be traced back to the 'Ages of Me' questionnaire originally coined by Kastenbaum and coworkers (1972).

Often feel age has been the only subjective age measure used or it has been complemented by some other age question or questions such as look age, do age, interest age, or ideal age. To all of these age questions, the answers are elicited in years, not in age decades. These age measures allow calculation of a discrepancy score that reveals of the way subjective age is related to the chronological age of the person under study (e.g. Barrett, 2003; Hubley & Hultsh, 1994; Knoll et al., 2004). A variety of terms have been used to describe age discrepancy, for example subjective age perception (SAP, a discrepancy between actual age and feel age) and chronological age satisfaction (CAS, a discrepancy between actual age and ideal age) which were coined by Hubley and Hultsch (1994; 1996). Other age discrepancy measures used are mental age and physical age, elicited by the questions "Do you feel mentally/physically younger, the same, or older than your real age?" (Hagen et al., 1999).

Ideal age (or personal ideal age, Barak, Stern & Gould, 1988) is typically elicited by the statement "If I could be any age I wanted right now, I would like to be… ". Another ideal age measure, desired age (Barak & al., 1988) resembles the cognitive age measure except that the wording of each sub question is of the format "I would like to feel…".

Other single item indicators of subjective age can also be found in the literature such as 'the onset of old age' where a respondent is asked to define the age he or she thinks old age to begin either personally or in general (e.g. Kaufman & Elder, 2003; Kuper & Marmot, 2003). I would, however, argue that when examining subjective age, for example, by a question such as "What age do you think most people leave middle age?"(Kuper & Marmot, 2003), it is possible that the answers given reflect socio-cultural conceptions of age more than personal perceptions.

TABLE 1 Summary of the subjective age measures and samples used in studies published between the years 1990 to 2004.

Sources	Samples	Subjective age measures
Knoll & al. (2004)	Germany, N = 134 38-92 years	Feel age (age discrepancy)
McCann & al. (2004)	Laos, Thailand, Spain, Australia, USA, N = 544, university students, aged 17-30 years, 70% females	Feel age, Ideal age, Activity age,
Kaufman & Elder (2003)	USA, N = 666, grandparents with a grandchild in high school, aged 51-92 years	Feel age, Ideal age, Onset of old age, Desired longevity
Westerhof, Barrett & Steverink (2003)	Germany, N = 3,331 USA, N = 2,006, aged 40-74 years	Feel age (age discrepancy)
Barrett (2003)	USA, N = 2,864, 25-74 years	Feel age (age discrepancy)
Cleaver & Muller (2002)	Australia, N = 356, aged 56-93 years	Modified version of Cognitive age (Barak & Schiffman, 1981)
Kaliterna, Prizmic Larsen & Brkljacic (2002)	Croatia, N = 118, aged 18-58 years, health care workers	Cognitive age, Desired age
Barnes-Farrell, Rumery & Swody (2002)	Brazil, Croatia, Poland, Ukraine, USA (health care workers), N = 118-250, mean ages 32-43 years, 85% female	Feel age (age discrepancy), Look age (age discrepancy), Activity age (age discrepancy), Ideal age (age discrepancy)
Bobko & Barishpolets (2002)	Ukraine, N = 250, aged 18-68 years, health care professionals	Feel age (age discrepancy), Look age (age discrepancy), Activity age (age discrepancy), Ideal age (age discrepancy)
Guiot (2001)	France, N = 225 women, aged 50-83 years	Cognitive age
Galambos & Tilton-Weaver (2000)	Canada, N = 209, aged 10-18 years	Modified version of Cognitive age (Montepare & Lachman, 1989)
Galambos et al. (1999)	Study 1. Canada, N = 75, aged 15 years Study 2. Canada N = 226, aged 9-17 years (3,5 year follow-up)	Modified version of Cognitive age (Montepare & Lachman, 1989)
Turner, Runtz & Galambos (1999)	Canada, N = 44, girls aged 12-19 years	Modified version of Cognitive age (Montepare & Lachman, 1989)
Clark, Long & Shiffman (1999)	USA. N = 376, women aged 65+ years	Cognitive age
Barak & Rahtz (1999)	USA, N = 668, mean age 71 years (age range 60-94 years)	Cognitive age, Perceived Youth, Feeling old
Hagen et al. (1999)	Germany , N = 375, N = 179 mean age 79.5 years at baseline, 5 year follow-up	Mental age, Physical age
Cleveland et al. (1997)	USA, 415 employees, 279 managers, aged 43 – 49 years at baseline, 2-year follow-up	Feel age, Look age, Interest age, Ideal age
Sato, Shimonaka, Nakazato & Kawaai (1997)	Japan, N = 1,842, aged 8-92 years	Feel age (age discrepancy), Ideal age (age discrepancy)
Hubley & Hultsch (1994; 1996)	Study 1, Canada, N = 241, aged 55-75 years Study 2, Canada, N = 355, aged 55-85 years	Feel age (age discrepancy score), Ideal age (age discrepancy score)

continues

Staats, Heaphey, Miller, Partlo, Romine & Stubbs (1993)	USA, N = 250, aged 50-91 years	Ages of me (Kastenbaum & al., 1972)
Cleveland & Shore (1992)	USA, N = 334+81 male and female employees, 249+30 managers, aged 443-49 years	Identity age
Logan, Ward & Spitze (1992)	USA, N = 1,139, aged 40-80+ years	Identity age
Goldsmith & Heiens (1992)	USA, N = 607, mean age 45 years (SD = 16.0)	Cognitive age
Montepare (1991)	USA, N = 115, university students aged 17-21 years	Modified version of cognitive age (Barak & Schiffman, 1981)

Note. The list was based on the original research articles found by employing search phrases 'subjective age' and 'age identification' in PsycINFO in April 2005. It should be noted that the list is incomplete while consisting of all the articles that were available to the present author.

1.3.2 Subjective age in the life course

Awareness of age was studied by Lallukka (2003) among Finnish children aged six to twelve years. She noted that rather than simply 'child', her informants preferred other expressions such as 'sort of a child' or 'in between a child and a young person' when defining themselves in terms of age. When asked their preferred or ideal age, the majority (65%) of the young informants wished to be older than their actual age. Overall, subjective age has been studied less often among children.

Adolescence and young adulthood seem to be periods when people either experience no age discrepancy or they report feeling older than their age (Galambos & al., 1999; 2000; McCann & al., 2004; Montepare, 1991). Although there is much less variation in subjective age in adolescence and early adulthood than thereafter, older subjective age in adolescence seems to be linked with negative behavioural outcomes. Turner et al. (1999) found that sexually abused girls (aged 12-19 years) were more likely to be early maturers and to feel significantly older than were their non-abused age-mates. In another study, Galambos and Tilton-Weaver (2000) noted that self reported problem behaviours, studied by several different measures, were associated with subjective age even after controlling for chronological age and pubertal status. Among boys, especially, this relationship followed a curvilinear pattern; boys who felt markedly older reported the highest levels of problem behaviours. These results suggest that subjective age is a good indicator of perceived maturity among adolescents.

Although a discrepancy between chronological age and subjective age is common at any age, certain trends can be noticed. A common notion, based on age group comparisons, is that from early middle age onwards an increasing proportion of adults, regardless of the age measure used in a given study, report a youthful subjective age (i.e. Barak, 1987; Barak & Rahtz, 1999; Barnes-Farrell & Piotrowski, 1989; Barrett, 2003; Goldsmith & Heiens, 1992; Hubley & Hultsch, 1994; Kaufman & Elder, 2002; Logan et al., 1992; Montepare & Lachman, 1989; Staats & al., 1993). For example, Goldsmith and Heiens (1992) found a youthful subjective age among 25% of the participants in their 30s, 54% of those in their 40s, and 69% of those in their 50s. A similar trend was reported by Barnes-Farrell and Piotrowski (1989) who noted that the age of respondents affected both the magnitude and the

direction of the age discrepancies reported (see also Barak, 1987; Kaufman & Elder, 2003). Of the people culturally defined as 'elderly' or 'old', about 40% to 80% have been observed to feel or act younger than their years or choose a younger subjective age category such as 'middle-aged' (Baum & Boxley, 1983; Hagen & al., 1999; Hubley & Hultsch, 1994; Knoll & al., 2004).

Given the fact that age norms are more or less gendered (Ginn & Arber, 1993; Hooyman & Kiyak, 1996), it is somewhat surprising that in most studies, no association has been found between participants' gender and their subjective age ratings (Barak & Rahtz, 1999; Barak & Stern, 1986; Baum & Boxley, 1983; Bultena & Powers, 1978; Henderson & al., 1995; Hubley & Hultsch, 1994). However, some contradictory findings also exist, all based on North-American data. Montepare and Lachman (1989) found in their study based on 18 - 83 –year-old people that, especially in women, the discrepancy between subjective and chronological age become pronounced with advancing age. Peters (1971) and Ward (1977), in turn, suggested the opposite. Recently, Keith (1997) found no age-group or gender differences for ideal age among middle-aged men and women, suggesting that less variation existed in ideal age after mid-adulthood. However, Kaufman and Elder (2003) reported that ideal age was on average five years higher among women than among men. Their data was based on 666 elderly North-Americans. It seems obvious that before drawing conclusions about the potential association of subjective age with gender, more effort should be put not only into the data collection but also into the theoretical framework within which the results are interpreted.

Although cross-sectional studies suggest that a youthful subjective age becomes more common as people age (Barnes-Farrell & Piotrowski, 1989; Barnes-Farrell & al., 2002; Goldsmith & Heiens, 1992; Montepare & Lachman, 1989), only a few studies have focused on the development of subjective age over time by following up the same individuals. Neither has much attention been paid to the potential differences arising out of birth cohort that may also explain differences in subjective age between age groups.

Hagen and colleagues (1999) examined mental and physical ages five years apart among Germans aged 75-93 years at the baseline (N = 375). During the follow-up (N = 179), mental age, which was twelve years less than actual age at the baseline, increased by three years. Physical age which was eleven years lower than actual age at the baseline, increased by 4.5 years during the follow-up. At both time points, physical age was significantly higher than mental age. Unfortunately, the study contains no information on individual changes in subjective age during the study period.

Bultena and Powers (1978) noted that at the baseline of their study of older persons in Iowa, (N = 235), some 65%of respondents aged sixty-five years or older, identified themselves as 'middle-aged' rather than 'elderly' or 'old'. Ten years later, of those who had reported themselves middle-aged at the baseline (n = 154), 43% remained in that category, 39% had changed their self report to 'elderly' and 18% to 'old'. Of those in the 'elderly' group at the baseline (n = 43), 33 % had changed to an older and 9 % to a younger subjective age category. In the 8-year prospective study by Markides and Ray (1988, see also Markides & Boldt, 1983)

among persons aged sixty years and over at the baseline (N = 245), 41% retained youthful ('young' or 'middle-aged') and 23% retained old ('old' or 'very old'), while 26% changed to an older and 10% to a more youthful age category. The findings of these prospective studies suggest that although many older adults maintain a youthful subjective age over time, changes are common, both towards an older as well as a more youthful subjective age. It should be noted, however, that both Bultena and Powers (1978) as well as Markides and Ray (1988) used verbal age categories that may be understood differently by different individuals.

Information on the patterns of subjective age among Finnish adults is available from two attitude surveys. Palosuo (2003) conducted a comparison study in health, health-related behaviour and attitudes between adults aged 16-64 years living in Helsinki (n = 824, 56% women, response rate 71%) and Moscow (n = 545, 55% women, response rate 29%). A postal survey, gathered in the year 1991, included a set of questions concerning attitudes towards ageing, old age and dying. Subjective age was elicited by a question "What age phase do you regard yourself as belonging to at the moment?". Participants chose one of alternatives (youth, young adulthood, early middle age, middle age, late middle age, early old age, old age, difficult to say, other). Finns, not counting the youngest age group, reported themselves as younger than the age phase typically associated with their chronological ages. For example, 41% of women aged 40-49 years identified with a younger age category than 'middle age' whereas the respective percentage was 28% among men. Overall, identification with a youthful subjective age category was somewhat more typical among the Finnish than the Russian respondents. Among the Russians, the tendency to choose a younger age category was most prevalent among the group aged 40-49 years. The Finnish women reported somewhat younger subjective age than men whereas the opposite was noted among the Russians. According to Palosuo (2003) it is likely that somewhat different meanings are attached to different terms referring to various life phases in the Finnish and the Russian cultures. It is likely that not only the cultural difference but also the fact that the response rate was quite low among the sample drawn from Moscow makes the interpretation of these results somewhat problematic.

Another Finnish study conducted by Puohiniemi (2002) described the features of subjective age (feel age) among Finns aged 15 to 74 years in the context of a large societal value and attitude survey. The survey took place in the years 1999 (N = 1,204, 50% women, response rate 69%) and 2001 (N = 1,402, 50% women, response rate 74%). The findings, based on the two samples, suggested that after the age of 30 years the discrepancy between chronological age and subjective age increases. The mean discrepancy was 3.7 years among 45-44-year-olds, 6.1 years among 55-64-year-olds, and 7.6 years among persons aged 65-75 years. The proportion of persons feeling younger than their actual age increased from 14% to 70% when proceeding from the youngest (15-24 years) to the oldest (65-74 years) group. As found in earlier studies, the proportion of participants who reported feeling older than their age remained low (2-6%) after the age of 25 years. Also the fact that men and women did not differ in their subjective ages was in line with previous international findings. Youthfulness after the age of 50 years was

associated with healthier life styles indicated, for example, by diet and by physical activity.

1.3.3 Subjective age, well-being and functioning

Sherman (1994) used qualitative data analysis when studying self perceptions of age among middle-aged and older people. She found four themes on the changes that led people to feel older: self-other comparisons, views people thought others hold of them, comparisons of one's former self as well as a new self-awareness that had occurred over time. The most common reason for starting to feel older was change in health, whereas such events as widowhood or retirement were mentioned much less often. In a sample of 131 North-American respondents with an average age of 79 years, Braman (2003) examined what parts of their lives people thought of when they were asked to specify their subjective ages. Also in this study the informants used both temporal (assessment of oneself against past selves) and social comparisons (assessment of one's status in comparison with other people) when depicting their subjective age. According to the results, physical markers such as health and energy level were the dominant underpinnings of subjective age decisions. These studies were in line with many others suggesting that from young adulthood onwards persons with better health status typically have a more youthful subjective age (i.e. Barrett, 2003; Baum, 1983-1984; Kaufman & Elder, 2003; Markides & Boldt, 1983; Westerhof & al., 2003). This pattern has also been shown by multivariate studies in which potential confounders have been controlled for (Barak & Rahtz, 1999; Barak & Stern, 1986; Logan & al., 1992).

Markides and Pappas (1982) evaluated the power of subjective age and subjective health to predict survivorship among older people. Their study was based on four-year longitudinal data on older Mexican Americans and Anglos (N = 460, 61% women) aged 60 and over. Those who died before the follow-up (n = 59) not only had older subjective age but also a shorter life expectancy at the baseline, as well as worse subjective and objective health than the survivors. The findings suggested that subjective age might be at least as predictive for survival as life expectancy. However, only a few later attempts have been made to explore the potential association between subjective age and survival in older people.

Kuper and Marmot (2003) examined the association between perceived age of leaving middle age (the onset of old age) and future health outcomes such as fatal or not fatal coronary heart disease in the context of the Whitehall II study (Marmot, Smith, Stansfeld & al., 1991). Their findings showed that over the seven-year follow-up, the perceived age of leaving middle age predicted fatal and less fatal health outcomes. The authors proposed that the perception of the age of leaving middle age might be seen as a general summary of the perceived rate of ageing, thereby predicting future health outcomes. In spite of the fact that the study conducted by Kuper and Marmot (2003) was not based on a direct subjective age measure, their findings support the idea that the potential link between subjective age and objective health outcomes such as survival deserves further attention.

Recently, subjective age has been examined in the context of well-being at work and the ageing work force by exploring potential associates such as work stress and work demands (Tepas & Barnes-Farrell, 2002). Data were based on surveys among health care workers in Poland (Iskra-Golec, 2002), Kroatia (Kaliterna & al., 2002), Ukraine (Bobko & Barishpolets, 2002) and the United States (Barnes-Farrell & al., 2002). Participants' mean age varied from 32 to 43 years while the age ranges in all samples typically covered the early twenties to mid-sixties. Subjective age was elicited by feel age, look age, do age and ideal age. Results indicated that especially feeling old relative to one's chronological age was positively associated with several indicators of job-related strain across several countries.

The fact that both self-perceived and clinically assessed health and functioning have been found to correlate with self-perceptions of age probably reflects the cultural conceptions of ageing that stress the centrality of bodily changes in the ageing experience (Furstenberg, 1989; Helin, 2000; Hurd, 1999; 2000; Laz, 2003; Woodward, 1995; Öberg, 1994; Öberg & Tornstam, 2003). Interestingly, Hurd (2000) noted that although older women in her study exhibited the internalization of ageist beauty norms, they simultaneously stressed that health was more important to them than physical attractiveness. These findings indicate that while older people espouse negative evaluations of their ageing bodies, they also show resistance to a correspondingly negative evaluation of self. According to Hurd (2000) this may reflect the shift that occurs in priorities as people reach old age; the emphasis on attractive appearance in the eyes of other people is replaced by one on health. Health in this case was often described in relation to others and in terms of freedom from disease, chronic illness and declining energy. In the light of these findings the context in which the ratings of subjective age are made by older people consist of complex relations between cultural, often gendered age norms, personal perceptions of attractiveness, health status and the functioning of one's ageing body (often in relation to real or imaginary age referents), as well as an attempt to maintain a positive self concept.

Besides the factors related with health, better psychological functioning has also been shown to be associated with a youthful subjective age. For example, such constructs as positive affect (Barak & Gould, 1985; Chua & al., 1990; Hagen & al., 1999; Linn & Hunter, 1979; Peters, 1971; Westerhof & Barrett, 2005), and internal locus of control (Baum & Boxley, 1983; Hubley & Hultsch 1994; 1996; Linn & Hunter, 1979) have been linked with a youthful subjective age. Hubley and Hultsch (1994; 1996) found that of personality traits, examined by NEO-PI, extraversion and openness to experience were related to a youthful subjective age, which was indicated by the discrepancy between chronological age and feel age.

Knoll and colleagues (2004) examined the potential interplay of feel age with health, functional limitations, and personality. Data were collected by using questionnaires at three measurement points during a 6-week period before and after the cataract surgery. Also in this study personality was indicated by the factor model of personality. Of the five factors, the study focused on Conscientiousness. The results showed that the more conscientious participants felt younger before and after surgery more often than the less conscientious. Their functional status

was also less dependent on health. These findings suggest that health-related pathways contributing to the construction of subjective age may be differentially predicted by inter-individual differences in personality.

According to Barrett (2003), especially among the oldest age groups health may be the factor that mediates the effects of other factors such as socioeconomic and educational status on subjective age. She examined health inequality as a potential explanation for socioeconomic differences in age identity. The study was based on a representative sample of non-institutionalized people aged 25 to 74 years (N = 2,864). The results showed that older identities were reported by the less socio-economically advantaged, who had both worse health and less favourable predictions of future health in comparison to their wealthier peers. Differences in age identity by education and perceived financial well-being were the greatest among older adults. However, health only partially accounted for these patterns. It is very likely that other factors, such as, for example, social support may also act as a mediator in the relation between functional status and quality of life in old and very old adults (Newsom & Schultz, 1996). As such, it is quite likely that factors of this kind may mediate the potential relationships between health, well-being and subjective age. It is also possible that these associations may be different among different age groups in later life.

Recently, Westerhof and Barrett (2005) investigated the relationship between age identity and subjective well-being among nation-wide samples drawn from Germany (N = 3,331) and the United States (N = 2,006). Their findings suggest that feeling younger than one's actual age is a self-enhancing illusion that contributes to subjective well-being even beyond factors predicting age identities, such as health and socio-economic status. The results supported the view that identifying with younger ages promotes subjective well-being, especially in cultures that are more youth-oriented.

Overall, the relationship between the ageing self and well-being can be analysed from different directions (Herzog & Markus, 1999). First, a dynamic and multifaceted self, for example, in later life may be adaptive in itself. It may lead to well-being because it allows an individual to draw on different schemas in dealing with a complex environment. Second, it is possible that certain schemas may play a crucial role in maintaining well-being such as the self-schema of competence (self-efficacy, sense of control). Also the social schema, reflecting social acceptance and social engagement, seems to be linked with well-being. The third view of the linkage between the self and well-being suggests that the nature of the self acts as a moderator of the impact of problems or stresses on well-being (Herzog & Markus, 1999). For example, a person whose self-schema is strongly related to work performance may be more prone to stress on retirement than a person whose selfhood is less related to work. The fourth approach links well-being to the processes to which self-perception is submitted. For example, a person may use selective social comparisons, such as a downward comparison, or self-relevant temporal comparisons, such as those of a satisfying past or a promising future, when attempting to maintain well-being in stressful situations. In addition, manipulating the discrepancy between ideal and current selves through modification of the ideal self may sustain well-being (Brandtstädter & Greve, 1994;

Heckhausen, 1992; Heckhausen & Baltes 1991; Heckhausen & al., 1989; Heidrich & Ryff, 1993a; 1993b; Helin, 2000; Herzog & Markus, 1999; Krueger & Heckhausen, 1993; Suls, Marco & Tobin, 1991).

As the above indicate, subjective age reflects mental and physical well-being and functioning in adults of various ages. It seems, however, that the majority of observations are based on cross-sectional studies and data that have been drawn from North-American samples. Consequently, I shall take a closer look at the theoretical and empirical observations regarding the role of social and cultural context in the ways people see themselves in terms of age.

1.3.4 Subjective age in social and cultural context

The underlying assumption in subjective age research is that social and cultural systems shape the meanings people ascribe to life events as well as to various role transitions in the life-course (Westerhof & al., 2003). Sociological theories suggesting this idea are the modernization theory (Cowgill & Holmes, 1972), age stratification theory (Riley, 1996; Riley & al., 1988), and life course perspective (Neugarten & Hagestad, 1976). They share a common interest in the ways societal norms structure the roles that are available to different age groups. Consequently, these theories focus on such concepts as norms (shared rules about appropriate behaviour), roles (set of behavioural expectations constituting a particular societal status), and socialization (the process by which norms and values of society are learned) (Passuth & Bengtson, 1988)[1]. In subjective age research, several ideas drawn from these theories can be identified; following the line of reasoning in modernization theory, it is assumed that countries that have had a similar course of development share the feature that youth is clearly more valued than old age. The analogy between age and social class is derived from the age stratification model. The view drawn from the life course perspective is that age norms and the timing of adult role transitions play an important role in self construal.

Several studies suggest that social roles explain differences in subjective age (Brubaker & Powers, 1976; Bultena & Powers, 1978; Kaufman & Elder, 2003; Logan & al., 1992; Mutran & George, 1982). For example, Logan and coworkers (1992) found that among middle aged people, being a parent was associated with a middle-aged rather than young identity, and being no longer married (due to widowhood or divorce) was associated with labelling oneself as old rather than middle-aged. Recently, Kaufman and Elder (2003) noted that becoming a grandparent earlier than usual was associated with an older subjective age.

1 In a nutshell, the modernization theory (Cowgill & Holmes, 1972) argues that the status of the aged is inversely related to the level of societal industrialization. The theory presumes that after industrialization, the societal power of elderly people has diminished because they have become a less important source of societal tradition and information (Passuth & Bengtson, 1988). The age stratification model (Riley, 1996; Riley & al., 1988) emphasizes that the age structure of roles organizes the society into a hierarchy much like social class. As a consequence, an individual's location within the age structure due to his or her birth cohort greatly influences his or her opportunities for societal power. The life course perspective (Neugarten & Hagestad, 1976) stresses the importance of age norms in shaping behaviour and the timing of adult role transitions (Passuth & Bengtson, 1988).

However, participants who enjoyed of being a grandparent felt younger than the others. They also set the onset of old age later and wished to live longer when compared to the others.

Another theoretical framework drawn from sociology in subjective age research is symbolic interactionism (Mead, 1934; Passuth & Bengtson, 1988) according to which individuals develop a sense of self through interpreting the way other people react to their behaviour. It is assumed that a reciprocal and interdependent relationship exists between an individual's self and the society in which he or she is living (Hooyman & Kiyak, 1996; Marshall, 1995; Passuth & Bengtson, 1988). Theories, such as the activity theory (Havighurst & Albrecht, 1953), labeling theories (Kuypers & Bengtson, 1973) and the reference group theory represent this theoretical framework. For example, the activity theory argues that a greater satisfaction in life is associated with active participation in the roles occupied by a person (Havighurst & Albrecht, 1953; Passuth & Bengtson, 1988). Although only a few studies on subjective age have explicitly referred to the activity theory, a common assumption is that activity is associated with well-being and that both are manifested in a youthful subjective age (Barak & Stern, 1986; Baum & Boxley, 1983; Clark & al., 1999).

It is assumed that the way the others react to a person and define or 'label' him or her, affects his or her self-concept (Hooyman & Kiyak, 1996; Kuypers & Bengtson, 1973). This may indicate, for example, that a person whose self-concept is already vulnerable because of losses experienced in old age, is labelled by the social environment as dependent, and because of that adopts an incompetent and dependent self-concept. This, in turn, may lead to further vulnerability. This reasoning can be seen in subjective age studies when attempting to explain why many older people avoid being labelled as 'old' in favour of a younger and a less stigmatized age category. According to Baum (1983-84), reasoning on the basis of the labelling theory should rather be that older persons accepting the category 'old', show realism and as such, are psychologically better adjusted than those who deny their actual age category. Empirical findings, however, do not support this view. The most consistent finding is that participants reporting an age discrepancy towards feeling older, also report more health problems and also behave 'older' than participants who report a more youthful subjective age (Barak & Stern, 1986; Hagen & al., 1999; Logan & al., 1992; Staats & al., 1993).

Bultena and Powers (1978) in a study based on participants aged 70 years or older, hypothesized that the greater the similarity between the respondents' perceived life situation and those of same-aged peers, the more likely they would be to adopt an older age identity. Ward (1977), in turn, noted that peer comparisons but not comparisons on health, family nor finances, were related to age identity. These studies imply the idea, drawn from the reference group-theory that self definition occurs in relation to various real or imaginary reference groups and that age referents form a focal reference group to identify with.

Of the variables used to indicate socio-economic status, those of educational status and income have been negatively associated with subjective age (Bastida, 1987; Bultena & Powers, 1978; Markides & Boldt, 1983; Markides & Ray, 1988; Stephens, 1991). However, there are also other findings according to which no

systematic relations exist between subjective age and different indicators of socioeconomic status (Henderson et al., 1995; Hubley & Hultsch, 1994). These contradictory findings may in part be explainable via the effect of chronological age, which has not been properly controlled for in all studies (Henderson & al., 1995).

Barrett (2003) noted that differences in age identity by education and perceived financial well-being were the greatest among older adults when compared to younger age groups. According to Barrett, this was explainable not only by the actual conditions of life but also by the less favourable predictions of their future selves (i.e. future health) among people with lower socio economic status when they were compared with their wealthier counterparts. As the association between socio economic status (SES) and health is well-known (Rautio & Heikkinen, 2000; Rautio, Heikkinen & Heikkinen, 2001), one could, indeed, assume that older people with lower SES, compared to their higher SES age referents, actually experience a more temporally compressed life course. This may be due to earlier timing of life transitions as well earlier experienced physical decline.

Recent research has focused on cultural variation in subjective age. McCann and colleagues (2004) compared subjective age between young adult samples drawn from the United States, Laos, Thailand, Japan and Australia. The results, based on a scale consisting of 13 items eliciting personal perceptions of age, showed modest cultural variations in subjective age in young, relatively educated adults. The least difference was noted between samples drawn from Laos and the USA whereas Japanese respondents were less youth-oriented than the others. They accepted less often than the others the idea that old age incurs a loss of social status. Middle-aged and older adults from the United States and Germany, aged 40 to 74 years were compared by Westerhof et al. (2003). Both national samples reported feeling younger than their age but the discrepancy was larger among the North-Americans. In both countries, persons with better health had younger subjective age. Overall, these and other findings based on different national samples (Barnes-Farrell & al., 2002; Bobko & Barishpolets, 2002; Hagen & al., 1999; Iskra-Golec, 2002; Kaliterna & al., 2002; Ota, Harwood, Williams & Takai, 2000; Waid & Frazier, 2003) suggest that although a youthful subjective age is a common feature across cultures, and related to health and well-being, it is somewhat more typical among North-American than among European or Asian samples.

Quite recently Westerhof and Barrett (2005) sought an explanation for cultural differences in the expression of subjective age and the relationship between subjective age and well-being in differences in cultural orientation, individualism and collectivism. Their assumption was that youthful age identities are more often used as a compensatory strategy in cultures that are oriented towards individualism instead of collectivism. Another assumption was that age identity is more important predictor of subjective well-being in cultures that value youth. Their comparison study was conducted between samples drawn from Germany and the United States. It was expected that in Germany, which is a corporatist welfare state where health care and social security are more the concern of the state than the individual, people would show a lower tendency to self-enhancement, seen as a youthful subjective age, than those living in a youth-

oriented culture such as North-America, where older persons are at risk of losing their self-worth when their economic self-sufficiency or autonomous functioning in daily life declines. Another expectation was that the self-enhancing strategy of identifying with younger ages would more effectively promote well-being in a culture that is more strongly youth-oriented. The results supported both of these expectations. In the light of these findings it is obvious that culture needs to be included more explicitly in research on the experience of aging, including studies on age identification.

1.4 Aims of the study

The purpose of this study was to explore the patterns of subjective age among Finnish adults (Studies I - IV), and to examine whether the ratings of subjective age would be associated with indicators of well-being and functioning (Studies II-III). The third aim of the study was to investigate potential cross-cultural differences in subjective age (Study IV). The research questions were set down in the four original research articles as follows:

1) What are the patterns of subjective age among different Finnish age groups?

A discrepancy between chronological and subjective age seems to characterize the ratings of subjective age in adults from early middle-age onwards. A tendency to feel younger or to wish to be younger than one's actual age has been shown to be even clearer among older adults. Thus, I hypothesized that a discrepancy between actual and subjective age would be a common feature among the Finnish people studied and probably more so among the participants in the oldest age groups. In addition, I assumed that in general, men and women would not differ in terms of subjective age.

2) Is subjective age associated with indicators of well-being and functioning in older people?

According to several previous studies, a youthful subjective age is linked with better subjective and objective health and with indicators of well-being. Consequently, these links were also expected in this study.

3) Does the cultural context affect the way people describe their subjective age?

A common assumption is that a youthward bias characterizes people living in Western societies. Generally, it was expected that there would be more similarities than differences in the features of subjective age between the Finnish respondents and those reported in international, mostly North-American, studies. However, bearing in mind that each culture has also unique cultural characteristics, it was reasonable to expect the Finnish respondents to show some unique features that would characterize their subjective age.

2 METHOD

This study is a part of the multidisciplinary Evergreen project that has been carried out in Jyväskylä, central Finland since the 1980s (Heikkinen, 1998). The main aim of the project has been to describe the state of health and functioning and their predictors in elderly people. Of the number of samples collected in the project (Heikkinen, Heikkinen, Kauppinen, Laukkanen, Ruoppila & Suutama, 1990; Suutama, Ruoppila & Laukkanen, 1999), studies I - III were based on an 8-year follow-up structured home interview data on persons aged 65 to 84 years at the baseline. Participants were interviewed in the years 1988 and 1996. Study IV was based on a postal attitude survey collected in the year 1992 from 25- to 64 -year-old people living in Jyväskylä.

Participants in the 8-year follow-up consisted of two random samples of home-dwelling Jyväskylä residents born between the years 1904 and 1913 (N = 800) and 1914-1923 (N = 800), drawn from the local population register (Table 2). At the time of the baseline interview, the participants were 65-84 years old. About 80% (n = 1,224) of them participated in the home-interview in the year 1988. The death dates of these people were obtained from the official register of the province of Central Finland and followed over thirteen years (Study III). In 1996, a total of 760 men and women were available for the follow-up interview. Of these people 88% (n = 663) were interviewed. The home interviews, carried out by trained interviewees, lasted about 2 x 2 hours (Kauppinen & Tyrkkö, 1999). The structured questionnaire dealt with living conditions, life history, health, physical, mental and social functioning, and well-being. The modified version of Beck's Depression Inventory (Beck, Steer & Garbin, 1988; Raitasalo, 1995), consisting of 13 items, was used to indicate depression. Mini-D (Erkinjuntti, Laaksonen, Sulkava, Syrjäläinen & Palo, 1986) was used to examine a likelihood of dementia.

The data used in Study IV was collected by a postal questionnaire in the year 1992. A random sample of 2,200 Jyväskylä residents aged 25 to 64 years was drawn from the population register. The participation rate was 61.5% (N = 1,355) and consisted of 559 men and 796 women. For the further analysis the participants were divided into three age groups: 25-39 years (n = 446), 40-54 years (n = 482), and 55-64 years (n = 427). Females outnumbered males in all three age groups (58

to 60%). In the further analysis, this data was compared with North American data with corresponding age groups (n = 169, n = 187, n = 222) reported by Barak and colleagues (1988).

I have summarized the samples, variables and methods of analysis in the four studies in Table 3. Studies I-III are based on the structured home interviews conducted in the years 1988 (phase 1) and in 1996 (phase 2). Both interviews consisted of a set of questions eliciting subjective age. In both phases of the study questions eliciting subjective age were situated after those eliciting social relationships. However, there was some variation in between the two phases of the study. Answers were asked in the proximity of five years to the following three questions: "How old do you feel you are?" (feel age, phases 1 and 2), "How old would you like to be?" (ideal age, phases 1 and 2) and "What age do you think you look?" (look age, only in phase 2). In addition, the following subjective age questions were included in the questionnaire: "Do you feel mentally younger, the same, or older than your real age?" (in phase 2 the question was ended "…than other people of your age?"). Besides mental age, a following question on physical age was used: "Do you feel physically younger, the same, or older than your real age?" (in phase 2 the question was ended "…than other people of your age?"). In addition, in order to observe the interaction between participants' chronological age and feel age as well as chronological age and ideal age, two new age discrepancy variables, subjective age perception (SAP) and chronological age satisfaction (CAS) were created in studies I and II following the procedure reported by Hubley and Hultsch (1994).

Other age questions included in the structured interview questionnaire were: "Have you felt age weighing on you?" ('yes', 'no'). The participants who answered 'yes' to the question were asked to specify at what age they began to feel that way (age weighing, phases 1 and 2), "At what age do you think old age begins?" (the onset of old age, phases 1 and 2), and "Would you like to live to be 100 years old?" (phases 1 and 2).

Study IV was based on a postal attitude survey collected in the year 1992. The questionnaire consisted of a survey on attitudes towards elderly people. Subjective age was elicited by two questions. The feel age question was framed as "How old do you feel at the moment?" and ideal age was elicited by "How old would you like to be?" Answers were given in numbers of years to both questions.

TABLE 2 Participation and drop-out rates in 1988 and 1996 for men and women born in 1904-13 and 1914-1923 (n, %).

	Interview in year 1988							Interview in year 1996						
	Total		Men		Women				Total		Men		Women	
Born 1904-1913	n	%	n	%	n	%		Born 1904-1913	n	%	n	%	n	%
Sample	800		242		558			Sample	285		70		215	
Eligible	743	(100)	222	(100)	521	(100)		Eligible	281	(100)	69	(100)	212	(100)
Interviewed	589	(79)	179	(81)	410	(79)		Interviewed [b]	253	(90)	66	(96)	187	(88)
Refused	144		41		103			Refused	26		2		24	
Not contacted	10		2		8			Not contacted	2		1		1	
Moved	3		0		3									
Lived in institution [a]	26		6		20									
Died before the interview	28		14		14			Died before the interview	4		1		3	
Born 1914-1923								Born 1914-1923						
Sample	800		288		512			Sample	475		166		309	
Eligible	783	(100)	279	(100)	504	(100)		Eligible	472	(100)	165	(100)	307	(100)
Interviewed	635	(81)	241	(86)	394	(78)		Interviewed [c]	410	(87)	146	(88)	264	(86)
Refused	131		32		99			Refused	60		19		41	
Not contacted	17		6		11			Not contacted	2		0		2	
Moved	2		1		1									
Lived in institution [a]	7		3		4									
Died before the interview	8		5		3			Died before the interview	3		1		2	

Note. A total of 441 persons died and 23 moved from Jyväskylä over the 8-year study period. [a]Not interviewed, [b]43 persons lived in institutions, [c]13 persons lived in institutions.

TABLE 3 Summary of the samples and methods used in studies I - IV.

Study	Samples	Variables	Analysis methods
Study I "Change in subjective age among older people over 8-year follow-up: Getting older and feeling younger?"	A longitudinal sample (interviews in years 1988, 1996) n = 451 aged 65 - 84 years at baseline	Feel age Ideal age Age discrepancy scores	T-tests for paired samples Mixed model ANOVA
Study II "Age identification in the framework of successful ageing. A study of older Finnish people"	A longitudinal sample (interviews in years 1988, 1996) n = 843 aged 65 - 84 years in 1988 n = 426 aged 73 - 92 years in 1996	Feel age Ideal age Age discrepancy scores Mental age Physical age Look age (only in 1996) The onset of old age Age weighing Will to live 100 years	Cross-sectional analysis Cross-tabulation Chi-square test One-way analysis of variance Stepwise linear regression
Study III "Perceived age as a predictor of old age mortality: a 13-year prospective study"	A longitudinal sample (interviews in years 1988, 1996) n = 1,165 aged 65 - 84 years at baseline A follow-up of survival 13 years	Mental age Physical age	One-way analysis of variance Cox proportional hazard regression modelling
Study IV "Age identification: A comparison between Finnish and North-American cultures"	Sample studied in 1992 (postal survey) n = 1,355 aged 25 - 64 years A cross-cultural comparison with a North-American sample by Barak & al. (1988) n = 578 aged 25 - 69 years	Feel age Ideal age Age discrepancy score (only for ideal age)	Two-way analysis of variance Paired t-test Independent t-test

3 SUMMARY OF THE FOUR ORIGINAL STUDIES

The present thesis focused on investigating characteristics of subjective age among Finnish adults. The first study focused on change in subjective age among older people over a follow-up of eight years. The second study depicted the characteristics of subjective age among older people with different self-ratings of their cognitive and physical functioning. The third study examined the predictive value of subjective age to mortality in older people, independent of chronological age. The fourth study described the features of subjective age among Finnish adults under 65 years of age. This sample was further compared in subjective age with a North-American sample of similar chronological age range.

Study I

Uotinen, V., Rantanen, T., Suutama, T. & Ruoppila, I. Change in subjective age among older people over an eight-year follow-up: 'Getting older and feeling younger?' (Submitted)

Cross-sectional studies suggest that the proportion of persons feeling younger than their chronological age increases with age. However, the few longitudinal studies available in this area of research suggest merely that individual variation exists in the individual patterns of subjective age over time. In our study, Finnish men and women (N = 451) aged 65 to 84 years were interviewed on two occasions eight years apart. Subjective age was studied as the discrepancy between chronological age and feel and ideal age, respectively.

The results showed that in both phases of the study about half of the respondents had a discrepancy score indicating that they felt younger than their chronological age while the other half had no age discrepancy (i.e. their feel age was equal to their chronological age). Only 2-4% had an age discrepancy indicating that they felt older than their chronological age.

Neither of the two age discrepancy mean scores changed over the study period. This suggested either stability in the age discrepancy or an equivalent change in both directions. Analyses of the individual shifts showed that of the persons who at the baseline felt younger than their chronological age a majority continued to do so at the follow-up. However, among half of them the discrepancy

between chronological and felt age was reduced. Among persons with no age discrepancy at the baseline, a half remained in that category. Change, when it occurred, took place more often towards a more youthful than older subjective age. Individual shifts noted in the ideal age-chronological age discrepancy showed more stability than those found in feel age-chronological age. Again, a bi-directional change was observed in the age discrepancy between the two phases of the study.

The fact that about half of the respondents also at the follow-up, had a youthful subjective age is in line with previous longitudinal observations on subjective age (Bultena & Powers, 1978; Markides & Boldt, 1983; Markides & Ray, 1988) and obviously reflects the age bias typical in Western societies in general. Also the finding that both stability and bi-directional change were found to characterize age discrepancy at the individual level were in line with previous longitudinal findings. These observations suggest that cross-sectional findings on age-related changes in subjective age should be complemented by follow-up studies. Of the two indicators of subjective age we employed, that of feel age, more so than ideal age, may reflect age-peer comparisons as regards bodily and mental changes happening with age.

Study II

Uotinen, V., Suutama, T. & Ruoppila, I. (2003). Age identification in the framework of successful ageing. A study of older Finnish people. International Journal of Aging and Human Development, 56, 171-193.

The study aimed to describe the characteristics of subjective age among community-dwelling elderly Finnish men and women differing in self-reported health, functioning and mood. The original data was based on a survey interview conducted among persons aged 65 to 84 years. Eligible participants were re-interviewed at age 73-92 eight years later. Loosely, on the basis of the distinction between successful, usual, and pathological ageing, described by Rowe and Kahn (1987; 1997), participants were divided into three groups (termed 'Positive', 'Negative' and 'Others') in both phases of the study according to their cognitive and physical functioning. We expected that the 'Positive' group, whose characteristics corresponded most closely to the definition of successful ageing by Rowe and Kahn (1987; 1997), would report more youthful subjective age and higher satisfaction with their current chronological age. Successful ageing was indicated by following five criteria: no illness or injury presenting problems in daily life, no health problems imposing limitations on hobbies, self-rated cognitive functioning better than satisfactory, age-comparative functional capacity self-rated as good, and no signs of depression.

The hypothesized difference in subjective age was confirmed: the 'Positive' group, compared to the two other groups, had lower feel age, lower look age, and lower mental and physical ages. They also less frequently reported the sense of age weighing on them, were more satisfied with their actual age, and set the general onset of old age later than persons in the two other categories. The results, supported by multivariate analyses based on stepwise linear regression, were in

line with prior variable-oriented studies on age identification while suggesting that an association exists between perceptions of personal ageing and physical and psychological well-being.

Study III

Uotinen, V., Rantanen, T. & Suutama, T. (2005). Perceived age as a predictor of old age mortality: a 13-year prospective study. Age and Ageing, 34, 368-372.

The study examined whether perceived age would predict mortality in older people over a period of thirteen years. Participants were 395 men and 770 women who were interviewed in their homes at age 65 to 84 years. Their survival was followed over thirteen years. Subjective age was elicited by the questions "Do you feel physically/mentally younger, the same or older than your real age?" The relationships were studied by Cox proportional hazard regression models with adjustments for potential confounders (chronological age, education, clinical and self-rated health, mood, and cognitive status).

The results indicated that the participants with older perceived age had an increased risk for death over the follow-up. In the case of perceived physical age the risk remained even after controlling for all of the potential confounders. In perceived mental age, adding the psychological variables into the covariates made the model insignificant. The findings provide evidence for the view that older perceived age is an early indicator of worsening health in elderly people.

Study IV

Uotinen, V. (1998). Age identification: A comparison between Finnish and North-American cultures. International Journal of Aging and Human Development, 46, 109-124.

The characteristics of subjective age were described among an adult sample under 65 years of age. The data were based on a mailed questionnaire among 1,355 respondents (59% females) assigned to three groups according to chronological age: 25-39 years, 40-54 years, and 55-64 years. The data were further compared with a North-American sample of 578 respondents (48% females) in the age groups 25-39 years, 40-54 years, and 55-69 years reported by Barak & al., (1988). Two-way analysis of variance was used to compare the three Finnish age groups in terms of feel and ideal ages. The feel and chronological age discrepancies were analysed using paired t-tests. Further, the felt and ideal ages of the Finnish and North-American groups were compared by using t-tests for two independent samples.

Results indicated that feel age was linked with chronological age but not with gender among the Finnish respondents. The discrepancy between ideal age and chronological age increased when proceeding from the younger to the oldest groups. Comparison between the two national samples drawn from Finland and the United States indicated that Finns in all groups (with the exception of males aged 25-39 years) had higher feel and ideal ages than their North-American counterparts. Gender did not differentiate North-Americans in terms of either indices of subjective age. Among the Finns, however, women had higher ideal ages

when compared with men in the respective age groups. These findings suggest, regardless of the similarities found between the two national samples, that also socio-cultural differences exist in terms of the meanings associated with age and ageing.

4 DISCUSSION

The aims of this study were to examine the age-related patterns of subjective age, and the potential association of subjective age with well-being, functioning and mortality in adult groups. In addition, the attempt was to obtain information on potential cultural variation in subjective age. Overall, the results, reported in four original articles, were mostly in line with the previous international findings. The results supported the view that subjective age is a valid construct in depicting the dimensions of age on the personal level. Covering the adult life span and relying on measures that have been reported in the international literature, these findings are informative about the ageing experience and the factors associated with it.

4.1 Subjective age and ageing

Age is thought to be a significant social category that affects the social positioning of people in the life course (Passuth & Bengtson, 1988). Age is also used in self-definition by individuals in different life phases. Interpretation of the patterns of subjective age typically rely on the reasoning that besides physiological and psychological factors, existing social and cultural factors affect the ways subjective age is constructed over the life course (Hendricks, 1995). Because Western societies are seen to celebrate youth and spurn old age, ageing is thought to pose a threat to one's identity and well-being. As such, a youthful subjective age is seen almost as a normative phenomenon in late adulthood (Linn & Hunter, 1979). Overall, the patterns of subjective age found among the Finnish adults studied here were mainly in line with the previous international findings. Also the associations we found between subjective age and various outcomes in terms of health and functioning among older adults supported the construct of subjective age that has been reported in international studies.

Cross-sectional findings have shown that subjective age is close to chronological age among younger adults (Montepare, 1991; Montepare & Lachman, 1989) but falls below it in early middle-age (Barnes-Farrell & Piotrowski, 1989; Goldsmith & Heiens, 1992; Knoll & al., 2004). In the light of comparisons

between age groups, such an age discrepancy is especially typical of subjective age among people who are culturally defined as 'elderly' or as 'old' (Goldsmith & Heiens, 1992; Hubley & Hultsch, 1994; Montepare & Lachman, 1989). Our observations based on cross-sectional data supported these notions while showing that from the early thirties onwards, there was an increasing discrepancy between feel age and chronological age among the male and female age groups. The ideal age-chronological age discrepancy was even clearer than that between feel age and chronological age.

However, the few existing longitudinal observations on subjective age suggest that the study design used is likely to affect the relationship found between chronological age and subjective age among older people (Bultena & Powers, 1978; Markides & Ray, 1988). Longitudinal findings have shown that although many older people maintain their previously youthful subjective age, there are also many people whose subjective age changes, in either direction as they grow older (Bultena & Powers, 1978; Markides & Ray, 1988). These findings suggest that there may be significant individual differences in age identification in late adulthood. They also challenge the cross-sectional notions of the trend in subjective age in old age.

Access to follow-up data allowed us to examine individual shifts in subjective age over an eight-year period. A closer look at the feel age–chronological age discrepancy showed that of the participants who felt younger than their actual age at the baseline almost as many remained in their baseline category as changed towards 'less youthful'. Of the subgroup with no age discrepancy at the baseline (feel age equal to chronological age) more than half remained in that category at the follow-up. The change, when it occurred in this group, took place more often towards feeling younger than towards feeling older than one's actual age. Although every fourth participant had a smaller age discrepancy at the follow-up, it was seldom that a person reported feeling older than his or her chronological age. It is notable that only nine persons at the baseline and eighteen at the follow-up had an age discrepancy indicating that they felt older than their real age. The fact that also at the follow-up, the vast majority of respondents had avoided an older age identity, supports previous longitudinal observations on subjective age (Bultena & Powers, 1978; Markides & Boldt, 1983; Markides & Ray, 1988) and obviously reflects the youthful bias typical in Western societies in general.

I shall now discuss the potential explanations for the different patterns found in the discrepancy between feel age and chronological age. The expressions of subjective age that showed a significant change towards 'less youthful' or even to 'older than one's age' are probably based on the losses experienced in health and functioning that have caused processes of accommodation in age identity. One might ask whether the stability of a youthful subjective age in old age indicates that these people had not experienced the kind of changes in health and functioning that would have affected their subjective age. It is also possible that these people might have experienced changes in health and functioning too gradual to have high impact on their identity in terms of age. It is possible that a number of our respondents had experienced major changes in various life domains but had adapted to these changes due to assimilative processes in identity

construal. This explanation owes to models of psychological ageing that stress the resiliency of the ageing self (Baltes & Baltes, 1990; Brandtstädter, 2002; Herzog & Markus, 1999). Change towards a more youthful subjective age may as well reflect improvements in experienced health and functioning or in other areas that typically affect age identity.

The explanation for the discrepancy between subjective age and chronological age in older adults may also lie in the first-hand experiences of ageing that people have (Knoll & al., 2004). This assumption is based on the idea that current cohorts of elderly people face changes associated with ageing somewhat later than they themselves might have expected on the basis of their observations of previous cohorts. In fact, in most Western societies many older people are ageing healthier and are socio-economically far better-off than previous generations at the same chronological ages. One could therefore argue that subjective models of ageing drawn from cultural age stereotypes (Palmore, 1990; 2001) are even less accurate for the current generations of people living in their 70s, 80s or even 90s than they were for their forbearers. From this point of view, an age discrepancy towards feeling younger can be explained by wide-spread pessimistic and unrealistic expectations of the changes that accompany ageing and subsequent failure of reality to fall in line with these expectations.

The individual patterns we noted in the relationship between participants' chronological age and ideal age showed more stability than those found in the discrepancy between feel age and chronological age. This supports some earlier notions that ideal age may be somewhat less prone changes in mid or in late adulthood than feel age (Keith, 1997). Interestingly, the greatest stability was found among persons with no age discrepancy (chronological age equal to ideal age) and among persons in the most youthful group.

To conclude, these findings support earlier ones that a youthful bias is characteristic of age identification in the late adult years. However, the assumption that "the older the people studied, the wider the gap between their subjective and chronological age", based on cross-sectional findings on subjective age (Goldsmith & Heiens, 1992; Hubley & Hultsch, 1994; Knoll & al., 2004) is still in need of further confirmation. It is obvious that more empirical studies are needed to examine individual patterns in subjective age over time. Moreover, more attempts should be made to connect these empirical observations with the theory of social cognition from a life span perspective.

4.2 Self-perceptions of age in relation to well-being and functioning

As self-conceptions play an important role both in adaptive outcomes as well as in behaviour in various contexts, one might reason that the ideas that various individuals hold of the personal ageing process are related to well-being and functioning (Markus & Herzog, 1991; Steverink & al., 2001). This is also supported by empirical findings, suggesting that subjective age is linked to well-being and health outcomes both among younger and older adults (Barak & Stern, 1986;

Barnes-Farrell & Piotrowski, 1989; 1991; Barnes-Farrell & al., 2002; Barrett, 2003; Westerhof & Barrett, 2005).

The second research question focused on the potential link between subjective age and indicators of well-being and functioning. The aim of Study II was to apply a person-oriented analysis in exploring this relationship. Participants, aged 65-84 years at the time, were divided into three categories based on individuals' actual data profiles describing their health, mood and self-rated cognitive functioning. Subjective age was described among the three health and functional groups. The follow-up data allowed us to divide the participants in the follow-up study into corresponding categories at the age of 73-92 years and to re-examine the patterns of subjective age. The results were in line with variable-oriented studies that have suggested that persons with better mental and physical health and functioning report lower subjective ages and express more positive views of ageing.

Although health and well-being are the most common associates of subjective age (Barak & Stern, 1986; Barrett, 2003), only a few prior studies have explored the relationship between subjective age and survival in older people. This may, at least in part, be due to the fact that follow-up data have seldom been used in subjective age research. In Study III we examined subjective age (perceived age) as a predictor of mortality independent of chronological age. Mortality was followed up for thirteen years in participants aged 65-84 years at the baseline. In this study subjective age was indicated by physical age and mental age. The results showed that the risk for death was higher in people who had chosen a subjective age subcategory other than 'youthful'. The result remained even when potential confounders such as chronological age, education, illnesses, self-rated health, mood and cognitive status were controlled for. This allowed us to conclude that subjective age is likely to reflect the general well-being of a person and his or her faith in the future. The findings are in line with recent observations that suggest the individual's perceptions of the aging process contribute independently to subjective well-being beyond individual and social resources (Levy, Slade & Kasl, 2002; Steverink & al., 2001; Westerhof & Barrett, 2005).

Barrett (2003) showed recently that both present health status and predictions of future health explained the differences found in subjective age among groups differing in their socioeconomic standing. Overall, North-American findings suggest that socioeconomic status predicts subjective age because it shapes the ways people enter different life phases and affects the rate of physiological decline (Barrett, 2003). It is likely, however, that the association between socioeconomic factors and subjective age may vary in intensity depending, for example, on the class structure of the society in question. We examined the association between education and subjective age in our sample of persons aged 25 to 64 years, divided into three age groups. There was only a weak association between education and subjective age in the group aged 40 to 54 years. One possible explanation is that in the youngest group there was less variance in subjective age when compared with other groups. The oldest group, in turn, showed the least differences in education.

In this study, the number of participants with no age discrepancy was significant in both phases of our study. These people had reported a subjective age

equal to their chronological age. Following the line of reasoning that suggests the identification of an older person with his chronological age to be a sign of negative adaptation, interpretation of this finding is problematic. One might consider whether a high proportion of older people in this category would diminish the association between subjective age and its potential correlates.

In Study II, the groups differing in their subjective age were compared in terms of educational standing and self-rated economic situation. Of the three groups, the most youthful, the 'Positive' group, were better off not only in terms of health and functioning but they were also more educated and more satisfied with their economic situation. Study III was based on the same original data but education as well as indicators of health were included in the explanatory models to show the potential association between subjective age and mortality.

To conclude, these findings suggest that in Finland, subjective age is a valid construct in the context of survey studies focusing on well-being and functioning among elderly people.

4.3 Socio-cultural context and subjective age

North-American research has stressed the impact of a youthful cultural bias on age identity (Baum & Boxley, 1983; Goldsmith & Heiens, 1992). Recent findings suggest, however, that also within Western culture variation exist in the way people describe their subjective age (McCann & al., 2004; Westerhof & al., 2003). Study IV focused on the patterns of feel and ideal age among adults of working age (25 to 64 years). The patterns noted were further compared with those reported by Barak and colleagues (1988), based on a sample drawn from the United States. Our assumption was that the Finnish respondents, being exposed to the global mass media, would show more similarities than differences in subjective age when compared to their North-American counterparts. However, we also assumed that the socio-cultural differences between the two nations would be reflected in various unique patterns in the subjective ages reported in our respective samples.

In both national samples the discrepancy between chronological age and two subjective age measures, feel age and ideal age, increased when proceeding towards the oldest age groups, although, more so in the North American-sample. Gender was not associated with feel age in either of the national samples.

Contrary to expectations, in all of the Finnish age groups women had higher ideal ages and therefore a smaller age discrepancy than men. Later, we obtained similar findings in both rounds of the follow-up among the Finnish people aged 65 to 84 years at the baseline. This may suggest that the Finnish women had adapted to their chronological age better than their male counterparts (overall, a high proportion of respondents showed no discrepancy between their chronological and ideal age) or that they had more positive expectations for the future.

The gender pattern noted in ideal age was not, however, in line with the "double jeopardy of the ageing-hypothesis" (Sontag, 1979) that has often been cited in the North-American literature on experienced ageing. Sontag has suggested that

ageing affects women more negatively than men because they are more valued on the basis of their appearance and therefore more vulnerable to physical signs of ageing (Lipka, 1987; Sontag, 1979). This cultural explanation is in line with the notion that in the Western cultures, markers of age mostly refer to physical deterioration (Woodward, 1991; 1995; Öberg, 1994). However, recent findings based on Swedish data, reported by Öberg and Tornstam (2001; 2003), have not unequivocally confirmed the hypothesis of gendered ageism. They have in fact supported the view that attitudes towards embodied old age have become more positive, especially among the young and middle-aged people.

Overall, the higher ideal age found in women may reflect the increasing opportunities for women in midlife and older living in Finnish society (Vaarama, Hakkarainen & Laaksonen, 1999). This reasoning is also supported by several facts concerning the current cohorts of Finnish women: a significant proportion of them are well-educated, engage in full-time work, prosper in their careers, participate in social and political decision making, engage in culture, and often continue their education throughout their lives (Eskola, 1999; Julkunen, 1999; Pylkkänen, 1999). As such, it is reasonable to expect that many of these women also hold more positive expectations for their future health, functioning, and socio-economic situation.

According to a recent German study (Timmer, Bode & Dittmann-Kohli, 2003) that examined the expectations of gains in the second half of life, women in midlife and older, especially, wished to have more time for themselves in the future. The authors explained this as a reaction to women's complex caring roles and tasks. An ideal age that is higher than chronological age may also reflect the faith that the future will bring more personal freedom. Such positive meanings related to the later years of life can also be found in the concept of the third age (Laslett, 1989; Tikka, 1991; 1994).

If it is true that the lack of discrepancy between chronological age and ideal age reflects acceptance of one's current chronological age and positive attitudes towards ageing (Hubley & Hultsch, 1994), Finnish women might be seen as showing a greater realism in their expectations related to ageing as expectations are often negatively biased and overestimate the losses related to ageing (Palmore, 1990; 2001). Moreover, one could interpret the higher ideal ages among women to reflect their awareness of their life-expectancy, which was about eight years longer than that of Finnish men at the time the study was conducted. This explanation is supported by findings that showed Finnish women to place the onset of old age later than Finnish men (Ahola & Huuhtanen, 1995; Palosuo, 2003; Uutela, Palosuo & Haukkala, 1994).

In Study III we noted that not only the group with older subjective age but also those participants with 'no age discrepancy' at the baseline had an increased risk for death over the follow-up when compared with those who felt mentally or physically younger than their age. This finding indicates similarity rather than difference in the correlates of subjective age between the present Finnish and previous North-American samples. Although our observations of the relationships between subjective age and factors indicating health and well-being were mostly in line with the international findings, it might still be asked why so many of the

Finnish respondents, even in the oldest age groups, had a feel age close to their chronological age. Is it possible that 'feeling one's years' is socially more acceptable in Finland than, for example, in countries such as the United States? Focusing on questions like this in future studies would provide valuable information on perceptions of ageing that are likely to carry somewhat different meanings in different cultural contexts.

Overall, results like these suggest that the meanings that current or future generations reaching old age attribute to this age phase should be studied carefully. One possible way to do this is to complete observations based on quantitative analyses with those obtained from qualitative analyses. This might help us to focus more carefully on the reasoning that lies behind the construction of subjective age, especially in the context of a structured survey interview. For example, one could ponder whether having health and functioning as the major focus of the interview provides a different context for the construction of subjective age than when the main focus of the study concerns, for example, life styles or leisure activities. An attempt probe the answers provided in the context of a structured interview was previously reported by Jylhä (1994) who was analyzing episodes concerning self-rated health from tape recordings of interview. The features that characterized the episodes during which the self evaluations of health were constructed were those usually neglected when discussing the results of a structured interview. Jylhä (1994) showed in her study how self-rated health took shape as a complex and context-bound construct whose meanings were formed through comparisons and negotiation in the course of discussion between the interviewer and the interviewee. It is notable that research already exists on the construction of age by old or middle-aged people in more informal settings such as group interviews or free discussions (Hurd, 1999; Jolanki, 2004; Nikander, 1995; 2002).

4.4 Methodological and theoretical conclusions

The main strength of this study lies in the data, which were collected as part of the multidisciplinary and longitudinal Evergreen project. Consequently, studies I-III were based on two representative samples of older adults drawn from two ten-year age groups. The variables available were based on structured home interviews covering a wide range of topics describing not only the subjective age but also the life history, living conditions, health, physical and psychological functioning and social relationships of the people studied. The home interviews took place at an eight-year interval thus allowing the study a longitudinal dimension. In both phases of the study the drop-out rates were quite small and were mostly caused by the deaths of informants. In addition, the postal attitude survey data, reported in Study IV, was collected as a part of the Evergreen project gave another opportunity to examine subjective age and to extend our analyses to include younger adults.

The fact that the questionnaires on which the data were based were completed in a face-to face situation obviously contributed to the smaller proportion of missing responses than had been the case when the data were gathered by a postal survey. The home interviews allowed specifying and clarifying questions to the advantage of both interviewer and interviewee. This, in turn, probably increased the validity of the data used in studies I-III.

It is well known that a longitudinal sample of elderly people is very likely to be selected. Participation, especially twice, in a study that comprises a wide battery of questions and tests requires motivation, commitment and mental alertness. It is likely therefore, that persons with severe health problems or social problems are more likely to be counted among refusals and drop-outs. Indeed, in the present study the drop-outs belonged more often to the older age group, were more often men, and had more illnesses than the follow-up group. However, it remains unknown, whether there might also have been eligible interviewees who refused to participate because of their active life style or because they disliked being identified as potential informants for a gerontological study.

The division of the participants into three health and functioning categories in Study II, was based on the idea that instead of variable-oriented analyses, person-oriented analyses would provide useful information on the association between indicators of subjective age and indicators of well-being and functioning. A shortcoming of this procedure was that it caused quite a number of drop-outs. This was especially the case with the modified version of the Beck's Depression Inventory (Beck & al., 1988; Raitasalo, 1995), consisting of 13 items. Drop-out analyses, conducted separately for the data collected in the years 1988 and in 1996, indicated that the subjects in the younger age group and those with a higher level of education were more often selected for the groups in 1988. Again, in the year 1996, the subjects in the younger age group had proportionally greater involvement in the study. However, the subjects selected for study groups did not differ in terms of gender, economic status, or self-rated health from those excluded from the study.

The data used in Study IV was based on a postal questionnaire that was gathered from people of working age. The survey questionnaire focused on the attitudes towards elderly people and included a battery of questions eliciting subjective age. The response rate was slightly over 60%, which is good enough for a postal questionnaire. Although information was obtained on the response rate for age and gender, no further information on the drop-outs was available. The North-American data studied by Barak and colleagues (1988) were used as comparison data for the present study. Their data were collected some years earlier by interviewees in the respondents' homes and workplaces. An age and sex quota sampling procedure was followed to select a representative sample of men and women. The study was restricted to respondents who answered all subjective and ideal age questions. Unfortunately there is no information available as to whether drop-out analyses were conducted in the study. It is likely, however, that the data were positively selected at least in terms of education, especially in the two oldest age groups.

In the late 1980s, when the interview questionnaire was being planned for the Evergreen project, there was no prior experience of the way the different subjective age questions would function among Finnish respondents. A difficulty related to methodological choices in a longitudinal study that may last decades is that one is tied to the methods that were initially chosen for that study. Especially in the context of gerontology, adding new questions or question batteries into a large questionnaire at follow-up is a critical issue. In the worst case, participants refuse to co-operate because of tiredness or lack of motivation. When planning the subjective age questions for the follow-up interview in 1996, we felt that the 'cognitive age' questionnaire developed by Barak and Schiffman (1981) might become popular in subjective age research. However, instead of all four subjective age items we ended up to adding look age in addition to feel age. Including the four-item cognitive age questionnaire would probably have increased our possibilities of matching the Finnish findings with those published in years to come. On the other hand, most of the indicators of subjective age used in this study can be found in the current international literature on subjective age. Therefore, we should not be too critical when looking back at the methodological choices that were made nearly two decades earlier.

Our observations on stability and change in subjective age were mostly in line with the previous longitudinal studies on age identification (Bultena & Powers, 1978; Markides & Boldt, 1983; Markides & Ray, 1988). When comparing the results, it should be noted, however, that methodological differences existed between these studies. Previous longitudinal studies employed answering alternatives that were verbal instead of numerical as in the case of our study. Bultena and Powers (1978) used the alternatives 'old', 'elderly' and 'middle-aged' whereas the alternatives of Markides and colleagues (1983; 1988) were 'young', 'middle-aged', 'old', and 'very old', of which the first two were later combined and coded as 'youthful'. There are several methodological issues that deserve mention when discussing the observations on change and stability in subjective age made on the basis of these studies. First, although both of the extant follow-up studies on change in subjective age in elderly people rely on verbal subjective age questions, they employ different answering alternatives. This makes the comparison of the degree of change and stability somewhat difficult. Second, the verbal age measures used in these studies are probably more sensitive to culture. The meanings related to the various age categories used to describe subjective age, such as 'middle-aged', may also have different connotations for different age groups. This may cause problems even when interpreting cross-sectional data. Third, certain analytical choices may have affected the results. For example, when describing change and stability in subjective age, Bultena and Powers (1978) combined the categories 'young' and 'middle-aged', which might have diminished the number of participants whose subjective age changed over the study.

When describing change and stability in subjective age by means of age discrepancy scores, it might be useful to note the proportion of subjects whose age discrepancy shifts upwards or downwards from one phase of a study to another. If attention is paid only to the means, two-way change might be interpreted erroneously as stability.

Studies examining age discrepancy in numbers often treat the participants in the 'youthful' subjective age category as a whole instead of paying attention to the potential diversity of the participants in this category. We tried to avoid this by dividing the numerical answers given to the subjective age questions into subcategories and cross-tabulating them between the two phases in order to describe the individual shifts. This choice can be criticized on the grounds that the outcome of the analysis regarding the shifts is affected by the size of the 'bands' that make up each category. However, the procedure was, quite informative as it described both the degree of change in the study group as well as the proportion of participants showing different patterns in their subjective age over time.

4.5 Contribution of the study and future research

This study aimed to add to our understanding of subjective age. Focusing on the ways age is constructed on the personal level over the life course, the study of subjective age falls at the intersection of several disciplines such as psychology, sociology and health sciences. In the context of multidisciplinary gerontology, the concept of subjective age has the potential to capture a wide range of factors that affect the ways individuals perceive their ageing process. This study provides information on the characteristics of subjective age and their potential underlying factors among adults of various ages. Focusing on Finnish adults, this study contributes to a field of research that has largely been based on North-American data. Variation across European cultures is also possible in the ways subjective age is constructed and as a consequence one should be careful when generalizing the findings even within the European context.

The findings of this study suggest that subjective age could be used as an alternative age variable in screening populations and predicting morbidity and even mortality. In the context of self-assessed health surveys, subjective age could therefore provide information on the variation that exists among chronologically same-aged people in terms of self-perceived well-being and functioning in relation to age. Another interesting area of study could be potential cohort differences in relation to the importance of age to identity.

In Finland, no prior surveys on self perceived age existed based on a representative sample of elderly people. Therefore, there is a need to obtain more culture-specific information on the patterns of subjective age and its potential correlates among Finnish people. As subjective age is known to reflect cultural conceptions of age and ageing, the international research in this area would also benefit from knowledge about patterns of subjective age in different socio-cultural contexts.

More attempts should be made to understand the mechanisms underlying the linkage between self-perceived age and well-being and functioning. Research that falls at the intersection of the psychology of health and epidemiology (e.g. Kuper & Marmot, 2003; Penninx, Guralnik, Bandeen-Roche et al., 2000), focusing

on the potential psychological correlates of various health outcomes, provides a promising area with which to link subjective age research.

Although subjective age has been studied from the point of view of different disciplines since the1960s, previous research contains no systematic observations of its development over the life course. Thus, the follow-up data gathered in the Evergreen project, allowed an examination of the change and continuity of subjective age in a heterogeneous sample of elderly people. As age is a relevant category for identity over the life course in our culture, future research should pay more attention to the potential links between the construction of subjective age and developmental regulation (Blanchard-Fields & Abeles, 1996; Heckhausen, 1992; Herzog & Markus, 1999). For example, Montepare and Clements (2001) have recently coined the term 'age schema' to depict cognitive self-schemas in the domain of age. This concept is based on the idea that different individuals have different self-schemas, cognitive generalizations about themselves that influence the ways they process self-referent information. This prompts an interesting question whether relinquishing a youthful subjective age is equally threatening for the self-concept of all individuals. In the future it might be interesting to link such concepts as the age schema to the empirical examination of subjective age in order to obtain more information on this topic. In this context age identification, manifested by subjective age, is seen as a cognitive process that yields information on the ageing self and the ways the self in various cultural settings adapts to challenges that are related to different life phases.

YHTEENVETO

Olen sen ikäinen kuin tunnen olevani. Suomalaisten aikuisten subjektiivinen ikä

Työni taustalla oli näkemys, jonka mukaan ikä on moniulotteinen käsite, jota on mahdollista lähestyä sen erilaisten ulottuvuuksien kautta. Subjektiivisella iällä tarkoitetaan yksilön henkilökohtaista arviota iästään. Sen lisäksi iästä on erotettavissa ainakin kronologinen, biologinen, sosiaalinen ja persoonallinen ulottuvuus. Subjektiivisen iän sisällöissä heijastuvat sekä kulttuuriset että yksilön omiin kokemuksiin perustuvat käsitykset eri ikävaiheisiin liittyvistä rajoituksista ja mahdollisuuksista. Tutkimuksen tavoitteena oli selvittää, miten suomalaiset kuvaavat subjektiivista ikäänsä aikuisuuden eri vaiheissa. Toiseksi pyrin selvittämään subjektiivisen iän mahdollista yhteyttä terveyttä, toimintakykyä ja hyvinvointia kuvaaviin tekijöihin iäkkäillä henkilöillä. Kolmantena tavoitteena oli tunnistaa kulttuurisia yhtäläisyyksiä ja eroja subjektiivisessa iässä tarkastelemalla suomalaisaineistoa pohjoisamerikkalaisia havaintoja vasten.

Aikuisikäisten ikäidentifikaatiota kuvaavien tutkimusten mukaan kronologista ikää alhaisempi subjektiivinen ikä on yhteydessä parempaan terveydentilaan ja hyvinvointiin. Valtaosa aiemmista subjektiivista ikää koskevista tutkimuksista perustuu yhdysvaltalaisiin aineistoihin, joissa nuorekkaan subjektiivisen iän yleisyyttä on selitetty ikääntymistä koskevilla kulttuurisilla käsityksillä. Näille käsityksille on tyypillistä nuorekkuuden ihannointi ja ikääntymisen kielteisiksi koettujen piirteiden korostaminen. Erottautuminen kronologisesta iästä on tyypillisesti tulkittu pyrkimykseksi välttää itsen määrittelyssä kulttuurille ominaisia kielteisesti sävyttyneitä ikämerkityksiä.

Tutkimus toteutettiin osana monitieteistä Ikivihreät -projektia, jossa on kartoitettu mm. yli 65 -vuotiaiden henkilöiden terveyttä, toimintakykyä ja elinolosuhteita ja niissä tapahtuvia muutoksia kahdeksan vuoden seurannan aikana. Väitöskirjan kolme ensimmäistä osatutkimusta perustuvat vuosina 1988 ja 1996 kerättyyn seuranta-aineistoon. Tutkitut olivat 65 - 74- ja 75 - 84 -vuotiaita osallistuessaan strukturoidun kyselylomakkeen pohjalta tehtyyn haastatteluun tutkimuksen ensimmäisessä vaiheessa. Haastatteluun osallistui kaikkiaan 1,224 henkilöä, joista 663 oli mukana myös tutkimuksen toisessa vaiheessa kahdeksan vuotta myöhemmin. Subjektiivisen iän kuvaajina käytettiin kansainvälisissä tutkimuksissa aiemmin käytettyjä strukturoituja ikäkysymyksiä koskien mm. koettua ikää ja ihanneikää. Muita subjektiivisen iän indikaattoreita olivat henkinen ja fyysinen ikätunne, ulkonäköikä, halu elää 100-vuotiaaksi ja arvio vanhuuden alkamisiästä. Neljännen osatutkimuksen aineisto perustui vuonna 1992 kerättyyn postikyselyyn, jolla oli koottu tietoa 25 - 64 -vuotiaiden jyväskyläläisten ikää ja vanhenemista koskevista asenteista, koetusta iästä ja ihanneiästä. Neljännen osatutkimuksen jälkimmäisessä osassa kolmeen ikäryhmään jaettujen suomalaisten koettua ja ihanneikää verrattiin vastaavalla tavalla ryhmiteltyyn yhdysvaltalaisessa tutkimuksessa kuvattuun aineistoon.

Suomalaisten subjektiivisen iän piirteiden tarkastelu vahvisti aiempia havaintoja, joiden mukaan aikuisikäiset tyypillisesti mieltävät itsensä kronologista ikäänsä nuoremmiksi. Kahdeksan vuoden iäkkäiden henkilöiden seurantatutkimus osoitti, että subjektiivinen ikä pysyi noin puolella haastatelluista muuttumattomana suhteessa kronologiseen ikään. Muutos subjektiivisessa iässä näkyi yhtä usein sen nousuna kuin laskunakin. Omaa ikää koskevan arvion suhteellisen suuri pysyvyys on mahdollista tulkita osoitukseksi siitä, että ikäännyttäessä käsitys omasta iästä pyritään ensisijassa säilyttämään muuttumattomana esimerkiksi sen arviointiperusteita muuttamalla. Havaintomme eivät kaikilta osin tue poikkileikkaustutkimuksiin perustuvia päätelmiä, joiden mukaan nuorekkaan subjektiivisen iän yleisyys lisääntyisi asteittain mentäessä kohti vanhimpia ikäluokkia. Pikemminkin ne ovat samansuuntaisia kuin kahdessa aiemmassa pohjoisamerikkalaisessa pitkittäisasetelmaan perustuvassa tutkimuksessa, jossa vastaajat olivat myös iäkkäitä henkilöitä. Myös näissä tutkimuksissa havaittiin sekä subjektiivisen iän pysyvyyttä että molempiin suuntiin tapahtuvaa muutosta. Tutkimusasetelmalla näyttäisi olevan selkeä vaikutus siihen, minkälaisena subjektiivisen iän muutos ajassa näyttäytyy yksilötason tarkastelussa. Ryhmätasolla tehty analyysi ei välttämättä tuo esille yksilötasolla muutoksia tilanteessa, jossa muutosta tapahtuu yhtä paljon molempiin suuntiin. Tarvitaan lisää pitkittäisaineistoihin perustuvia tutkimuksia, jotta tieto subjektiivisessa iässä tapahtuvien muutosten laadusta ja yleisyydestä tarkentuisi.

Kolmannessa osatutkimuksessa havaittu kuolleisuuden ja subjektiivisen iän välinen yhteys säilyi huolimatta siitä, että analyyseissä huomioitiin tutkittavien kronologinen ikä, koulutustausta, terveydentila, mieliala sekä kognitiivinen taso. Kokemus, että on ikäistään vanhempi, näyttäisi ennakoivan kuolemaan johtavaa terveyden heikkenemistä ollen yhteydessä jäljellä olevan elinajan pituuteen. Päätelmää puolsi se, että tutkimukseen osallistuneet ikäistään vanhemmaksi itsensä arvioineet henkilöt olivat myös fyysisesti ja psyykkisesti muita heikompia kunnoltaan. Tulos tuki siten pääosin yhdysvaltalaisiin aineistoihin perustuvia havaintoja, joiden mukaan subjektiivinen ikä heijastaa fyysistä ja psyykkistä hyvinvointia.

Neljänteen osatutkimukseen sisältyi työikäisten suomalaisen koetun iän ja ihanneiän suora vertailu suhteessa pohjoisamerikkalaisten vastaaviin ikäkuvauksiin. Tulokset osoittivat, että suomalaisten koettu ikä ja ihanneikä noudattelivat lähemmin kronologista ikää verrattaessa heitä pohjoisamerikkalaisiin ikätovereihinsa. Kummassakaan aineistossa koettu ikä ei ollut yhteydessä sukupuoleen. Ihanneiän suhteen kaksi aineistoa erosivat siten, että kaikissa suomalaisissa ikäryhmissä, naisilla vielä selvemmin kuin miehillä, ihanneikä pysytteli lähellä kronologista ikää. Pohjoisamerikkalaisessa aineistossa molempien sukupuolten ihanneikä oli selvästi kronologista ikää alhaisempi. On olettavaa, että erojen takaa on löydettävissä kulttuurisia ja yhteiskunnallisia tekijöitä, kuten erilaisia käsityksiä ja odotuksia ikääntymiseen sisältyvistä mahdollisuuksista, menetyksistä ja saavutuksista. Neljännen osajulkaisun ilmestymisen jälkeen on julkaistu joitakin vertailututkimuksia, joissa pohjoisamerikkalaisia aineistoja on verrattu eurooppalaisiin aineistoihin. Havainnot ovat tukeneet vertailututkimukseemme perustuvaa päätelmää siitä, että ikäidentiteetin nuorekkuus korostuisi erityisesti yhdysvaltalaisissa aineistoissa. Tulosten vertailtavuuden kannalta on kuitenkin ongelmallista, että

käytetyt subjektiivisen iän indikaattorit vaihtelevat tutkimuksesta toiseen. Toisaalta, näyttäisi siltä, että runsaan vuosikymmenen aikana tietyt mittarit ovat nousseet muita yleisemmin käytetyiksi. Ainakin seuruuasetelmaan perustuvia tuloksia on syytä arvioida tietyllä varovaisuudella, koska on vielä niukasti tietoa subjektiivista ikää mittaavien kysymysten reliabiliteetista.

On olettavaa, että subjektiivisen iän taustalla vaikuttavat tekijät ja niiden keskinäinen suhde eivät välttämättä ole samoja elämänkulun eri vaiheissa. Lisätietoa tarvitaan esimerkiksi siitä, millä tavalla subjektiivinen ikä muuttuu samoilla henkilöillä siirryttäessä elämänvaiheesta toiseen sekä siitä, miten muutos selittyy toisaalta nk. objektiivisilla tekijöillä kuten muutokset terveydentilassa, elinoloissa, tai sosiaalisissa suhteissa, sekä toisaalta subjektiivista hyvinvointia indikoivilla tekijöillä kuten koettu hyvinvointi tai tulevaisuutta koskevaisuutta koskevat odotukset. Tiedämme vielä myös suhteellisen niukasti erilaisten psykologisten tekijöiden kuten esimerkiksi adaptaation merkityksestä sen kannalta, miten yksilön kokemat muutokset eri elämänalueilla heijastuvat hänen subjektiiviseen ikäänsä.

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