

Proactive Coping and Successful Aging

What role do resources and strategies play in the preparation for potential goal threats associated with aging?

Carolijn Ouwehand

Cover Design and Photography by
Printed by
ISBN
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Fonkelklei Multimedia Ontwerp
Printpartners Ipskamp, Enschede
90-393-3838-8
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What role do resources and strategies play in the preparation for potential goal threats associated with aging?

Proactieve Coping en Succesvol Ouder Worden

Welke rol spelen bronnen en strategieën bij het voorbereiden op potentiële bedreigingen van doelen die geassocieerd zijn met het ouder worden?

(met een samenvatting in het Nederlands)

Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit Utrecht
op gezag van de Rector Magnificus, Prof. dr. W.H. Gispen,
ingevolge het besluit van het College voor Promoties in het openbaar te verdedigen
op vrijdag 3 juni 2005 des ochtends te 10.30 uur
door

Carolijn Ouwehand

Geboren op 4 augustus 1977, te Rotterdam

Promotoren: Prof. dr. D.T.D. de Ridder
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The research reported in this thesis was funded by the *Research Institute for Psychology & Health*, an Institute accredited by the Royal Dutch Academy of Arts and Sciences.

Voor mijn babyboomers

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Chapter 1



General Introduction

Dutch society today is confronted with a rapidly growing cohort of older people who, in addition, are living to a greater age than ever before. As in other Western countries, it is predicted that the number of people aged 65 and older in the Netherlands will almost double in the next 35 years, increasing from 14% in 2004 to 24% in 2040, after which it will slightly decrease (CBS, 2005; Alders & Tas, 2001). The life expectancy of these people will increase as well.

An important question to consider is how these older adults can live happy and healthy lives for as long as possible. For most adults, the balance between gains and losses becomes less favorable as they grow older (e.g., P.B. Baltes & M.M. Baltes, 1990), since they encounter an increasingly number of stressful changes, such as a decline in health and financial resources. The concept of successful aging refers to people's ability to remain content while confronting the losses associated with aging. Over the last 15 years, models have been developed that describe the psychological processes that people may engage in to create opportunities for the achievement of personal goals which contribute to their subjective well-being while effectively handling the losses that threaten these goals (M.M. Baltes & Carstensen, 1996; P.B. Baltes, 1997; Freund & Baltes, 2000; Freund, Li & Baltes, 1999; Marsiske, Lang, Baltes & Baltes, 1995).

In the existing literature, the processes and strategies that promote successful adaptation to losses have mostly been described from a reactive viewpoint, through empirical studies which have examined the ways people cope with goal threats once they have taken place. In this thesis, we extend research into successful aging through the use of the important concept of proactive coping, which has been adapted from self-regulation theories, but which has not yet been applied in the context of successful aging. Almost a decade ago, Aspinwall and Taylor (1997; Aspinwall, 1997) added an interesting new perspective to the discussion about how people cope with potential threats to their valued goals. They introduced the concept of proactive coping, which refers to the efforts people undertake in advance of a potential stressor in order to offset it or to prevent its consequences. As such, the concept of proactive coping reverses the typical causal direction of the stress-coping relationship (Aspinwall & Taylor, 1997). Proactive coping refers to the use of strategies when stress is still minimal, whereas reactive coping involves the activities undertaken to adapt to a stressor that has already taken place.

Little empirical research has been conducted in relation to the concept of proactive coping since its introduction in the literature. The present thesis is the first study to systematically examine proactive coping and address several aspects of the proactive coping process, including proactive coping orientation, proactive coping competence and the nature of the actual proactive coping efforts undertaken. The central aim of this thesis is to investigate the factors that contribute to the employment of proactive coping by adults aged 50 to 70. Middle-aged and older people are an

interesting population in which to study proactive coping, since this age group is often confronted with probable, stressful changes due to aging, such as a decline in health, financial resources or social networks, while at their age it is often still uncertain when and how stressors are likely to reveal themselves and even whether potential stressors will emerge at all.

The thesis starts with a theoretical discussion regarding the extent to which proactive coping may contribute to successful aging (Chapter Two). Current psychological models of successful aging explaining the pursuit and achievement of personal goals and highlighting self-regulation processes in older age are reviewed. We state that these models have mainly focused on the strategies people use to react to goal threats. It is argued that proactive coping may be an essential additional strategy for successful aging, since it may contribute to the prevention of losses and the preservation of valuable resources.

In Chapter Three, we study the relationship between current stressors and proactive coping, since current stressors may consume important resources that can then no longer be used to assist in engagement in proactive coping. Three studies are conducted to examine various elements of proactive coping, namely proactive coping competence, proactive coping orientation and proactive coping efforts. Proactive coping competence refers to the ability to take a future-oriented viewpoint, set realistic goals and make plans. Proactive coping orientation means the extent to which an individual has the tendency to be prepared for potential stressors before they develop, whereas proactive coping efforts are the actual attempts undertaken to prevent these future events. Regression analyses are employed to test the hypothesis that current stressors are negatively associated with these different aspects of proactive coping.

The aim of Chapter Four is to examine to what extent three indicators of socioeconomic status (SES) are associated with proactive coping competence using the data from a large cross-sectional survey study. In addition, we examine whether poor physical and mental health may play a role in this relationship. Two competing hypotheses are tested to see whether these health stressors are potential mediators or moderators in the association between SES and proactive coping competence. Structural equation modeling and hierarchical regression analysis are employed to test the mediator hypothesis and the moderator hypothesis, respectively.

Chapter Five discusses a field experiment in which middle-aged and older adults are confronted with a potential decline in three different resources - health, social relationships, and financial resources. The purpose of this study is to examine to what extent proactive coping is influenced by the nature of a potential threat and the characteristics of the individual who is confronted with that potential threat. Multilevel analyses are used to examine the extent to which three situational factors, namely type of stressor, appraised threat and appraised control, and individual characteristics explain the variance in proactive coping efforts.

To examine which features of a potential goal threat predict engagement in proactive coping in more detail, Chapter Six outlines the results of an experiment that manipulates two characteristics of a very common future threat, namely a potential decline in health. This experiment examines whether the amount of control people have over this future threat and the amount of time left until the threat is likely to fully reveal itself predict attention being paid to threat signals, seeking more information about the future threat and planning strategies to prevent it. Multivariate analyses of variance are employed to answer this question.

The final chapter summarizes and discusses the main results of the present thesis. In addition, the potential limitations of the studies presented in this thesis are discussed. The chapter ends with recommendations for future research.

Chapter 2

Processes Involved in Successful Development in Later Life: The Role of Proactive Coping

Abstract

Successful aging is an important concept, and one that has been the subject of much research. During the last fifteen years, the emphasis of this research has shifted from formulating criteria for successful aging to describing the processes involved in successful aging. The model of Selective Optimization with Compensation (SOC-model) is one of the leading theories in this field. Although evidence about its value is accumulating, we argue that this model mainly focuses on how people react to losses and that proactive coping aimed at preventing potential threats to goals may also be a valuable strategy. The aim of the present article is to review to what extent current psychological theories of successful aging have paid attention to proactive coping. We argue that proactive coping may be important for successful aging, since it results in a prolonged availability of resources for optimization and compensation processes and a delay in disengagement from important goals.

Ouwehand, C., De Ridder, D.T.D., & Bensing, J.M.
Submitted for publication.

Introduction

Research has demonstrated that, despite the difficult and often inevitable losses that result from aging, many older people maintain a subjective feeling of well-being (e.g., Diener & Suh, 1997; Kunzmann, Little & Smith, 2000; Smith, Fleeson, Geiselmann, Settersten & Kunzmann, 1999). P.B. Baltes and M.M. Baltes (1990) were among the first gerontologists to state that aging might be best conceptualized as a changing balance between gains and losses. They also argued that older individuals may be able to compensate for such losses and remain satisfied with their lives. The concept of successful aging refers to the resilience of people who succeed in achieving a positive balance between gains and losses during aging. During recent decades, literature on the subject has expanded, and now encompasses both theoretical considerations and empirical studies on development and growth in later life, the various resources and other factors which contribute to this process and, finally, the outcomes of successful aging. The aim of the present study is to review the psychological models, which describe the processes and strategies that contribute to successful aging. We will argue that these models have not given much attention to the fact that people are able to prevent potential losses at an early stage, and that this proactive coping strategy may also be important to preserve a positive balance between gains and losses.

Emphasis has not always been on describing the processes of successful aging. Early research in the field focused mainly on formulating criteria, which would be useful in defining successful aging. The well-known disengagement theory (Cumming & Henry, 1961) regarded successful aging as the desire and ability of older people to disengage from active life in order to prepare themselves for death whereas the activity theory suggested that successful aging might be interpreted as continued adherence to the activities and attitudes of middle age and the substitution of roles, lost by changes associated with aging, in order to maintain a positive sense of oneself (Havighurst, 1961, 1963). Since both theories could not account for the heterogeneity found in older people, Havighurst and his colleagues (1961, 1963) defined successful aging as having inner feelings of happiness and satisfaction with one's present and past life (Havighurst, 1963). In 1989, Ryff proposed a new set of criteria that not only emphasizes satisfaction with one's life, but that also explicitly refers to growth and progress in older age. Her definition included six dimensions of positive functioning: self-acceptance, positive relations with others, autonomy, control over one's environment, purpose in life, and personal growth. One of the present core ideas of successful aging, namely the idea that aging is a developmental process in which growth is still possible, was first described by Ryff.

Another set of criteria was presented by Rowe and Kahn (1987, 1997), which have led to a remarkable boost in empirical studies examining the factors responsible for, for example, good health and high functioning (see the MacArthur Studies of Successful Aging). Rowe and Kahn (1987, 1997) suggested three main, partly interde-

pendent elements of successful aging. Firstly, people have to avoid disease and disease-related disability by, for example, adopting a healthier lifestyle. The second element involves the maintenance of high cognitive and physical functional capacity, which creates potential for the final element, namely the prolongation of active engagement with life.

This definition of successful aging has not been free from criticism. The criteria are regarded as fixed end points rather than personal goals that individuals strive for throughout their life span (Pearlin & McKean Skaff, 1996); it describes those who have aged successfully rather than defining the process. In addition, gerontologists pointed out that, as a result of these fixed criteria, the model does not consider the many possible patterns of successful aging (M.M. Baltes & Carstensen, 1996; Scheidt & Humpherys, 1999). Finally, the criteria proposed are viewed as normative and influenced by Western societies' ideals (Tornstam, 1992); they are culturally and historically specific. It has even been suggested that the model's assumptions and consequences may be potentially damaging for several subgroups of older people (Holstein & Minkler, 2003).

During the last 15 years, emphasis has shifted from formulating criteria towards outlining the processes involved in successful aging. Models have described the strategies people may employ to manage the many difficulties associated with aging in order to, for example, maintain or increase well-being (E. Kahana & B. Kahana, 1996), or to continue achieving personal goals (e.g., P.B. Baltes & M.M. Baltes, 1990), which in turn may promote subjective well-being (Brunstein, 1993; Diener, Suh, Lucas, & Smith, 1999; Rapkin & Fischer, 1992). The researchers who developed these models acknowledge losses as an inevitable part of the aging process, but suggest that the older individual is able to continue to generate positive outcomes. One of the key elements of these theories is that people create environments, which make success possible while effectively dealing with losses associated with aging. They have primarily concentrated on the strategies involved in effectively reacting to these losses, but anticipating negative changes may also be a very important and adaptive strategy in the process of successful aging, since handling losses at an early stage consumes less valuable resources. An interesting new perspective in the discussion about how individuals cope with changes and stressful events has been put forward by Aspinwall and Taylor (1997) who introduced the concept of proactive coping, which refers to the efforts people may make to prevent potential losses and other stressors from occurring or to minimize their consequences. We propose that proactive coping is a valuable strategy for successful aging.

The present article will review to what extent current models of successful aging have explicitly or implicitly paid attention to preventive activities as an important part of the strategies that contribute to the successful aging process and will discuss the extent to which the concept of proactive coping may be a significant addition to the field of

successful aging. We will focus on psychological theories that explain how older individuals carry on striving for their personal goals despite facing an increasing number of obstacles, in other words, how they continue to engage in self-regulation processes in older age.

Processes Involved in Successful Aging

One of the leading theories of successful aging is the life-span model of Selective Optimization with Compensation model (SOC-model) developed by P.B. Baltes and M.M. Baltes (1990), which states that aging may be best characterized as a heterogeneous process with many different pathways and (successful) outcomes. The model's authors were therefore among the first to describe the processes of successful aging instead of solely defining the end points.

From the viewpoint of the SOC-model, people select life domains that are important to them, optimize the resources and aids that facilitate success in these domains, and compensate for losses in these domains in order to adapt to biological, psychological, and socio-economic changes throughout their lives and to create an environment for lifelong successful development. Since stressors, such as declining health, may multiply whereas resources decrease in later life, selection, optimization and compensation processes become increasingly important during aging in order to maintain a positive balance between gains and losses (M.M. Baltes & Carstensen, 1996; P.B. Baltes, 1997; Freund & Baltes, 2000; Freund, Li & Baltes, 1999; Marsiske, Lang, Baltes & Baltes, 1995).

The SOC processes can occur at a conscious or unconscious level and in an active or passive way (Freund & Baltes, 2000; P.B. Baltes, Staudinger & Lindenberger, 1999) and are aimed at maximizing gains and minimizing losses while striving for personal goals (Freund et al., 1999). SOC is considered a universal mechanism, but its expression very much depends on the individual and his or her environment (P.B. Baltes, 2004), since personal goals vary from person to person, as well as according to culture and period (M.M. Baltes & Carstensen, 1996; Marsiske et al., 1995). The SOC definition of successful aging, therefore, allows for non-normative, individual trajectories of successful development in older age.

This is contrary to the idea of Steverink and colleagues (1998) who argued that a theory of successful aging should include what goals people must achieve in order to identify success objectively. Based on the social production function theory, they argue that physical well-being and social well-being are the two universal goals. Realization of these goals depends on the achievement of first-order, instrumental goals: to attain physical well-being, comfort and stimulation are needed while affection, behavioral confirmation, and status are necessary in order to achieve social well-being (Steverink, Lindenberg & Ormel, 1998). The theory leaves some room for more individual goals in order to attain the instrumental goals. Nevertheless, the question remains as to what

extent the proposed higher level goals, particularly the instrumental goals, are universal and not influenced by norms.

In order for the model of selective optimization with compensation to be further operationalized, it needs to be combined with domain-specific theories (Marsiske et al., 1995; Freund & Baltes, 2002) in order to identify the content of the SOC strategies and the outcomes to which the SOC strategies are directed (Freund et al., 1999). For example, the way in which SOC may contribute to cognitive functioning and intelligence has been discussed (e.g., P.B. Baltes, 1993; P.B. Baltes et al., 1999). In addition, the SOC-model has been elaborated using the lifespan theory of primary and secondary control (see e.g., Heckhausen & Schulz, 1993, 1995; Schulz & Heckhausen, 1996). As the focus of this article is on self-regulation processes with regard to the attainment of personal goals, we will highlight the embedding of the SOC-model in an action-theoretical framework (Freund & Baltes, 2000; Freund & Baltes, 2002).

Since resources are limited, people cannot pursue every goal in every life domain; Choosing between goals, developing these goals in a coherent hierarchy and committing oneself to them is crucial for development. Elective selection is the concept that refers to this idea and operates in the absence of losses (Freund & Baltes, 2000; Freund & Baltes, 2002; Freund & Riediger, 2001). In order to pursue and achieve the personal goal that have been set, sufficient and proper resources are necessary as is the efficient utilization of these resources. Optimization is the process which is directed at acquiring the needed resources: developing new skills, modeling other successful one's, using one's energy to pursue personal goals are all examples of optimization. When resources decline or are lost (as in aging), compensation strategies become necessary to avoid a reduction in self-regulation with regard to goals (Freund & Baltes, 2000; Freund & Baltes, 2002; Freund & Riediger, 2001). An individual may compensate by using technology, such as a hearing aid or a wheelchair, but also by increasing his or her efforts or by learning new skills. Both optimization and compensation processes not only generate resources, but also depend on the availability of resources (Freund & Baltes, 2000). When in later life losses begin to outweigh gains, loss-based selection becomes more prominent. As a result of these losses, individuals start to focus on their most important goals, reconstruct their goal hierarchy, disengage from original goals and set new goals (Freund & Baltes, 2002).

The importance of accepting losses and disengaging from goals that can no longer be pursued in old age has also been emphasized by other researchers, such as Heckhausen and Schulz (1995; Schulz & Heckhausen, 1996), who have developed a life span model of primary and secondary control. According to this model, people use secondary control strategies directed at changing the evaluation of blocked goals, which ultimately results in disengagement from these blocked goals. Brandtstädter and colleagues (e.g., Brandtstädter & Greve, 1994; Brandtstädter & Rothermund, 1994; Brandtstädter & Rothermund, 2002) have presented similar ideas with their theory of

assimilative and accommodative processes. Although assimilative strategies, that is, actively changing the environment to fit personal goals, are preferable as long as it is possible to invest resources, people may have to switch to accommodative strategies when resources for compensation diminish in order to remain satisfied with themselves and their life (Brandtstädter & Rothermund, 2002). Contrary to the SOC-model, Brandtstädter and Rothermund (2002) propose that disengaging from blocked goals is an unintentional and gradual process, particularly in the case of goals that are central to an individual. In any case, disengagement is often necessary in order to regulate negative emotions in later life, to remain satisfied with one's performance (Rothermund & Brandtstädter, 2003a) and to avoid depression in later life (Rothermund & Brandtstädter, 2003b). In other words, accommodative flexibility may be a valuable part of successful aging. Interestingly, Wrosch, Scheier, Miller, Schulz and Carver (2003) found that disengagement from unattainable goals was related to higher subjective well-being in older adults (aged 55 to 89), but only when these individuals had the tendency to find new goals that were meaningful to them, a process they termed goal reengagement (see e.g., Wrosch, Scheier, Carver & Schulz, 2003).

To summarize, the SOC-model outlines the processes through which older people actively cope with the many changes associated with aging. Successful aging is not about not having to face any losses, but about dealing successfully with these negative changes. Furthermore, the SOC-model stresses the significance of creating environments in which success is possible, by choosing between life domains and prioritizing goals. In this sense, this model is very promising in explaining successful development in later life. The SOC-model, nevertheless, focuses mainly on the strategies people may engage in to react effectively to losses and other stressful changes. People may also be able to foresee certain potential stressors and make efforts to prevent them or minimize their consequences. The usefulness of this proactive coping strategy will be discussed later. First, we will review whether empirical studies provide evidence for the SOC model's predictive and explanatory value with regard to success.

Empirical Evidence

Several studies have examined the differences between people with respect to the employment of SOC. In a cross-sectional study with adults aged 18 years and older, Freund and Baltes (2002) found that self-reported SOC strategies first increase from young to middle adulthood and subsequently decline after the age of 67. These findings corroborate the results of another study, which demonstrated that the age-related decline of optimization and compensation continues in advanced old age (age range: 72 - 103; $r_{\text{Age, Opt}} = -.24$ and $r_{\text{Age, Com}} = -.16$) (Freund & Baltes, 1998, 1999). Furthermore, Rothermund and Brandtstädter (2003a) found that compensation accumulates until the age of 70, after which it sharply reduces as a consequence of a decline in the

availability of resources (age range: 58 - 81). Interestingly, elective selection continues to increase in older adulthood (Freund & Baltes, 2002). For example, research on the size and quality of older (aged 70 to 104) people's social networks demonstrated that the number of social partners decreases with age whereas the number of very close relationships remains the same (Lang & Carstensen, 1994). Freund and Baltes (2002) suggest that the positive relationship between age and elective selection might be explained by the idea that middle-aged and older adults become aware of their specific pathway in life and, therefore, focus more and more on their selected goals. Nevertheless, whether it is possible to properly disentangle elective selection and loss-based selection in older age is debatable, particularly when results are based on self-report measures. People may report that they always focus their energy on a few important goals, but may not always be able to recognize this as loss-based selection, particularly when disengagement from goals occurs somewhat automatically and rather gradually. Thus, the basis of this continued selection process might also be explained by the fact that people are no longer capable of pursuing all their goals due to the aging process.

A second question that remains unanswered is when individuals switch from one strategy to another and whether such changes are always adaptive. No empirical data are yet available to answer this question. It is possible that this depends on the situation being faced. For example, Chou and Chi (2002) suggest that their finding that compensation did not moderate the relationship between financial strain and life-satisfaction may be explained by the fact that it is very difficult to find ways to compensate for lack of money.

It has been suggested that the demonstrated decline in most SOC strategies in older adulthood is probably the result of an age-related reduction of resources, which makes it difficult to engage in optimization and compensation, since these processes themselves expend a lot of resources and efforts (Freund & Baltes, 2002). Research shows that older people aged 70 to 102 who are still rich in resources are less susceptible to a decrease in everyday functioning than resource-poor people (M.M. Baltes & Lang, 1997). Whether this is due to a greater employment of SOC strategies was examined in a longitudinal study which demonstrated that, compared with older adults with a small amount of resources, people between 70 and 103 years old with many resources directed their energy at a lesser range of activities, but invested more time in these activities and, in particular, spent more time with their family members (Lang, Rieckmann & Baltes, 2002). These differences remained after controlling for age (reported total effect size of resource status was .55). For future research, it may be interesting to further examine the role of specific resources in the different SOC strategies (e.g., Lang et al., 2002).

Another interesting issue is whether there is empirical evidence for the suggested contribution of SOC to successful aging. Freund and Baltes (1998, 1999)

conducted a cross-sectional study of older people between 72 and 103 years old who reported their SOC strategies by filling out the SOC-questionnaire, which is a self-report measure for SOC as strategies for life management (for a detailed description of the SOC-questionnaire and its validity and reliability, see Freund and Baltes, 2002). Results showed that a greater amount of SOC was positively associated with satisfaction with age ($r = .33$), positive emotions ($r = .47$) and absence of social and emotional loneliness ($r = .23$ and $.31$, respectively), even after controlling for other variables, such as age, control beliefs, subjective health and several personality constructs. Although all SOC strategies were involved, optimization and compensation made the greatest contribution to well-being (Freund & Baltes, 1998, 1999). Another cross-sectional study by Freund and Baltes (2002) replicated these results; people aged 18 and over who used more SOC strategies also had more positive emotions ($r = .37$) and a higher subjective well-being (r 's for indicators were between $.26$ and $.44$). Associations remained after controlling for other variables and were strongest for optimization followed by compensation and loss-based selection.

That SOC does not only contribute to successful development in general, but also to successfully adjusting to specific, difficult situations was demonstrated by Li, Lindenberger, Freund and Baltes (2001). They found that older people between 60 and 75 years old select the activity most important to them (walking and keeping balance) when they have to perform two tasks at the same time, namely memorize words while they have to walk along a narrow track. Moreover, they make use of compensatory means that help them performing the chosen task. In addition, in a cross-sectional study with people aged 60 years and older, Chou and Chi (2002) examined whether self-reported SOC moderated the relationship between financial hardship and life-satisfaction. It appears that optimization in particular, but also selection were significant moderators after controlling for various other variables. In order to examine whether the SOC-model has the potential to explain how older adults adapt to disability, Gignac, Cott and Badley (2002) conducted a study that examined behavioral adaptations of adults aged 55 years and older with osteoarthritis, a chronic and incurable physical illness. They found that compensation was the strategy most often used by people suffering from long-term disability; particularly those individuals who had undergone surgery or were more disabled. Optimization was the next most frequently used strategy.

The SOC-model has been applied to other research domains in addition to aging. More evidence of its usefulness comes from studies in the field of occupational psychology. Self-reported SOC-behaviors in young employees aged 25 to 36 associated moderately ($r = .19$ to $.46$) with global and domain-specific measures of subjective well-being, even after controlling for personality factors and control beliefs (Wiese, Freund & Baltes, 2000). Optimization and compensation strategies were mainly responsible for these positive relationships between SOC and well-being. Selection

seemed to be of lesser importance (Wiese, Freund & Baltes, 2000). The longitudinal version of the same study confirmed these findings. The degree to which people used optimization and compensation strategies predicted whether they felt emotionally balanced and were satisfied with their work three years later ($R^2 = .05$ to $.14$) (Wiese, Freund & Baltes, 2002). Furthermore, Abraham and Hansson (1995) demonstrated that the use of SOC strategies to maintain job competencies becomes increasingly important during aging (sample's age was 40 to 69). The positive correlation between selection and competence maintenance was largest for the oldest employees (age: 49 - 69; $r = .23$) whereas the positive associations between optimization ($r = .45$) and compensation ($r = .23$) with goal attainment also increased with age (Abraham & Hansson, 1995). Bajor & B.B. Baltes (2003) found that loss-based selection and compensation partly mediate the relationship between conscientiousness and job performance in employees with managerial positions (mean age = 43.7, $sd = 9.4$). In addition, these strategies also made a unique contribution to job performance ($r = .44$ for the relation between SOC and supervisory rating; β 's are $.17$ and $.16$ for loss-based selection and compensation, respectively). In another cross-sectional study, B.B. Baltes and Heydens-Gahir (2003) examined whether the use of SOC-strategies is associated with fewer job and family stressors in people aged 21 to 64 who were married or living with a partner and had a full-time job. Their results showed that work-related SOC resulted in fewer job stressors ($\beta = -.20$) and a larger amount of family-related SOC was negatively associated with family stressors ($\beta = -.15$) after controlling for other variables, such as gender and social support. Furthermore, having fewer job stressors and fewer family stressors resulted in less conflict between work and family matters respectively (corresponding β 's are $.40$ and $.54$).

These empirical studies suggest that the SOC-model is a promising model of successful aging. It seems that the SOC-model is starting to become widely accepted, as researchers other than the model's developers have employed this model as a theoretical basis for their research or to explain their data. Moreover, the empirical studies have shown the potential usefulness of the model in explaining the differences in (older) people with regard to success and in predicting successful development throughout life in general, as well as adaptation to difficult circumstances. Although challenges remain for future research, a promising start has been made.

One of the most significant results of these empirical studies is the finding that compensation and optimization in particular contribute to successful development. Unfortunately, these are also the strategies that are most likely to decline in old age as a result of increasing losses, especially in people who have few resources left. Persisting with optimization and compensation may then consume so many resources that other important activities can no longer be carried out (Freund & Baltes, 2002) and disengagement from goals or loss-based selection becomes inevitable. We argue that people may be capable of foreseeing future problems and losses and take appropriate

preventive actions before these stressors fully reveal themselves; in other words, they are able to engage in proactive coping (Aspinwall, 1997; Aspinwall & Taylor, 1997). Preventing potential stressors from emerging may result in an extended availability of resources for optimization and compensation. This means that personal goals may be pursued and attained for longer, which ultimately contributes to subjective well-being. In other words, proactive coping may be a valuable strategy for successful aging.

The SOC-model has mainly described the processes through which people react to the multiple changes associated with aging that may threaten personal goals. Although it is to some extent proactive, since elective selection and optimization require future-oriented thinking, the SOC-model did not explicitly pay attention to the strategies people may employ in advance of a potential goal threat in order to avoid it. In the remaining part of this article, we will examine the possible value of proactive coping for models of successful aging.

Proactive Coping Strategies

Some researchers have acknowledged the important role of preventive activities for successful aging, in addition to reacting effectively to stressful changes. As early in the history of gerontology as 1951, Paulus (1951, p. 401) suggested that “successful aging must be prepared long in advance; a happy old age is the criterion and reward of a well conducted life”. More recently, in their model of preventive and corrective proactivity, E. Kahana and B. Kahana (1996, 2001) described strategies to effectively deal with the unique stressors associated with aging in order to avoid negative outcomes. These strategies do not only include corrective actions to cope with stressors once they have occurred, but also several preventive actions made prior to the stressors’ occurrence in order to delay them or minimize their number (E. Kahana & B. Kahana, 1996, 2001). These preventive behaviors include health promotion to reduce the risk of declining health, planning for the future, and helping others in order to enhance the range of social resources that may be drawn upon in difficult times. This is partly in line with Rowe and Kahn (1997) who suggested that avoiding disease and maintaining high physical functioning is an important part of successful aging. Only one empirical study has used the Kahanas’ model as a theoretical basis and has examined the role of preventive strategies for success. Results from a longitudinal study showed that the quality of life of older adults aged 72 and older who engaged in several preventive health behaviors, such as exercising and giving up smoking, was enhanced after eight years (E. Kahana et al., 2002).

Despite the fact that E. Kahana and B. Kahana (1996) identified the three preventive activities (health promotion, planning, and helping others) as the behaviors most often employed by older adults, it is debatable whether these are the only preventive strategies people may engage in. We suggest that proactive coping may vary among and within individuals and will depend on an individual’s personal goals, the

specific potential stressors people may encounter during their lives and to what extent they experience these stressors as a threat to their goals. While it is likely that every individual will pass through the same stages of proactive coping, they may differ in the behavioral efforts or cognitive activities they ultimately undertake, which are the result of this psychological process, in order to handle the same type of potential stressor. Moreover, proactive coping efforts may also differ within a person, as different types of stressors often require different types of actions.

Following Aspinwall and Taylor (1997), we define proactive coping as the strategies people apply to prevent future stressors or to minimize their effects. Proactive coping is a psychological process, which can be divided in five stages. A first requirement for engaging in proactive coping is having enough resources, which may be accumulated during life, in order to build up resistance and to be prepared as much as possible (Aspinwall, 1997). To identify a potential stressor, the environment has to be screened for danger and cues indicating a potential stressor have to be recognized and appraised as a threat that requires action. A focus group study with 47 people aged 50 to 70 indeed demonstrated that people need to experience at least a slight feeling of threat in order to direct their attention to a potential stressor and to become motivated to engage in proactive coping (Ouwehand, De Ridder & Bensing, 2001).

Initial coping efforts include both behavioral actions, such as seeking more information about the stressor, and cognitive strategies, such as planning, aimed at preventing or minimizing the stressor. Aspinwall and Taylor (1997) propose that proactive coping efforts are active rather than avoidant, because avoidance of thinking about the stressor does not contribute to controlling the problem. Feedback is a necessary final stage in proactive coping, since it provides information about the development of the potential stressor and the results of one's coping efforts. Important skills in proactive coping include planning, regulation of negative emotions invoked by thinking about a stressor, and mental simulation (Aspinwall & Taylor, 1997; Aspinwall, 1997).

An advantage of proactive coping is that stressors are encountered in an early stage; its impact may be lowered when the stressors fully emerge (Aspinwall & Taylor, 1997). Consequently, the stressor will consume relatively less resources, which means that these resources remain available for other activities. Furthermore, older people often have to deal with stressors that imply a loss of resources themselves. For example, a decrease in health is not only a stressful change that depletes resources; it is also a decline in one of the most important resources for goal pursuit and other actions. In short, preventing potential stressors associated with aging may help to preserve resources, which may be used to continue engaging in optimization and compensation for as long as possible. This is important, because the empirical studies described above have shown that these strategies contribute to successful development. Disengagement from important goals, therefore, may be postponed by

using proactive coping. Some problems, however, may be insoluble. Attempting to prevent these stressors may unnecessarily drain many valuable resources. We suggest that screening the environment and thinking about these future insoluble stressors, in other words engaging in proactive coping, may also be adaptive in this situation, even if it implies early disengagement from goals that are threatened by these types of stressors.

Little empirical research has been conducted to examine whether (older) people are able to engage in proactive coping and whether this actually contributes to SOC and successful development in later life. Until now, empirical studies have shown that older people do not avoid problems or passively react to them; they are capable of using as many effective problem-focused coping strategies as their younger counterparts (Aldwin, 1991; Aldwin, Sutton, Chiara & Spiro, 1996). Furthermore, Freitas, Liberman, Salovey and Higgins (2002) have demonstrated that people with a “prevention focus” (Higgins, 1997), either chronic or induced by a specific situation, initiate action earlier than people who only think about desired outcomes. Nevertheless, people may not always have the opportunity to act in advance. Recent research by the authors has examined the hypothesis that current stressors, either due to general living conditions or specific stressors, hampers proactive coping (Aspinwall & Taylor, 1997; Ouwehand, De Ridder & Bensing, 2004; Ouwehand, De Ridder & Bensing, under review - a). Stressors may drain valuable resources, such as attention, that can then no longer be invested in proactive activities. We found that poor physical health but not major life events had a negative impact on proactive coping, whereas poor mental health had a positive effect on proactive coping (Ouwehand et al., under review - a). In addition, people low in socioeconomic status (SES) tend to use less proactive coping partly due to the fact that they experience poorer health (Ouwehand et al., 2004).

A field experiment (Ouwehand, De Ridder & Bensing, under review - b) showed that proactive coping does not only depend on personal features, but may also be highly variable within individuals. Situational factors, such as type of stressor and appraised amount of control over the stressor, determine the use of proactive coping strategies to a greater extent than individual characteristics. Moreover, features of a potential stressor are important as well in initiating proactive coping. An experiment demonstrated that the less time there is left before a potential goal threat fully reveals itself leads to more attention being paid to cues representing the upcoming stressor as well as seeking more information about how to prevent the stressor (Ouwehand, De Ridder & Bensing, under review - c).

Whether engaging in proactive coping contributes to subjective well-being has barely been examined empirically. Research by Prenda and Lachman (2001) has shown that future-oriented planning strategies positively influence life-satisfaction in adults aged 25 to 75. Although planning for the future declines with age, older adults benefit the most from planning (Prenda & Lachman, 2001). Furthermore, preventive

strategies directed at enhancing one's health result in a higher quality of life eight years later (E. Kahana et al., 2002).

Discussion

Reflecting on personal goals and actively attempting to achieve them are important ingredients for successful aging, since they contribute to subjective well-being. Theories that concentrate on the strategies that enhance this self-regulation process take into account that successful aging may have many different pathways and successful outcomes. Some researchers suggest that even this non-normative definition of successful aging is a typical idea of "Western societies that value success in terms of individual accomplishments" (Torres, 1999, p. 37). Torres (2003) suggests that some cultures might regard acceptance of unavoidable changes as success. However, research has demonstrated that Chinese people also engage in SOC when confronted with stressful situations (e.g., Chou & Chi, 2002) and, on the other hand, Western researchers have acknowledged the importance and inevitability of acceptance as has been outlined in this article. It would be interesting to further examine the cross-cultural value of the SOC-model and the concept of proactive coping.

Nevertheless, one difference may be that Western cultures consider that actively changing one's environment to fit one's goals is preferable as long as it is possible to invest sufficient resources (Brandtstädter & Rothermund, 2002; Heckhausen & Schulz, 1995). As we have argued in the present article, proactive coping strategies may be employed to prolong these processes by conserving valuable resources for optimization and compensation. Studies have just started to provide empirical evidence for proactive coping and many questions, such as whether proactive coping is a dispositional factor or whether it is something people are able to acquire, are still unanswered at this point in time.

Another question to be answered is whether proactive coping might have negative and unintended side effects. It may consume important resources when a potential stressor is appraised wrongly, which may lead to accommodation strategies being triggered sooner than necessary. Other negative consequences include rumination and high vigilance (Aspinwall & Taylor, 1997), which might have the opposite effect to that intended. Intervention studies should therefore take into account that learning to employ proactive coping strategies may have damaging effects for some people.

A final challenge for future research is to examine how models of successful aging may be useful for empirical research. The operationalization of processes is often difficult. For example, the concept of proactive coping embraces a process over time, which yet alone consists of many different elements, both behavioral strategies and cognitive activities, that cannot be determined in one single measurement. It would be useful to

focus research on the smaller parts of the process using measurement instruments that do not depend on self-report. Self-report measures frequently include prepared response items that more often assess attitudes and dispositional acting styles instead of behavior that may change over time and may depend on the situation. Other problems include the fact that individuals are not able to report their efforts correctly (Schwartz, Neale, Marco, Shiffman & Stone, 1999) and tend to employ socially desirable answering (Coyne & Gottlieb, 1996). It might therefore be productive for future research to consider developing measures that do not depend so much on self-reporting.

Conclusion

During the last decade, as researchers started to acknowledge that aging is a heterogeneous process with many different pathways that may all result in the maintenance of life satisfaction in advanced age, emphasis has switched from specifying criteria of successful aging to outlining the strategies involved in this process. The SOC-model appears to be an important model with the potential to explain and predict success in different types of people and situations. Although SOC-strategies contribute to successful development, it becomes increasingly difficult to engage in these activities due to the fact that resources decline in old age. In the present article, we have argued that proactive coping, that is, attempting to prevent potential stressors that are the cause of this decrease in resources, may be a valuable strategy as well, albeit one that has hardly been addressed in theories of successful aging. By anticipating potential stressors at an early stage, proactive coping may conserve resources important for optimization and compensation and, therefore, postpone disengagement from valuable personal goals, the attainment of which contributes to subjective well-being.

Chapter 3

The Association between Current Stressors and Different Aspects of Proactive Coping: A Multimethod Approach

Abstract

The concept of proactive coping refers to the use of strategies to offset potential goal threats before they occur. It is not known what causes people to engage in proactive coping. Using a multimethod approach, we examine to what extent current stressors impede proactive coping in middle-aged and older adults. In three studies, we investigate several aspects of proactive coping. Hierarchical regression analyses in the first study (N = 3,189) showed that health stressors and major life events had no, or only a marginal significant association with proactive coping competence. These results were also found in the second, cross-sectional study (N = 334), which examined proactive coping orientation. The results of a prospective field study (N = 123), which examined proactive coping efforts in three different situations, demonstrated that mental health stress had a positive, longitudinal impact on these efforts. It is concluded that a certain amount of mental health stress might be necessary to start engaging in proactive coping.

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Submitted for publication.

Introduction

The ability to cope with stressful changes is considered to be an important ingredient for successful development in adulthood, since it may contribute to individuals' continuing to strive for and achieve valued personal goals, thus leading to a higher level of subjective well-being (Brunstein, 1993; Diener, Suh, Lucas, & Smith, 1999; Rapkin & Fischer, 1992). Coping strategies have mainly been researched from a reactive point of view, through studies which examine the way people respond to stressors that pose a threat to personal goals once they have occurred. It is equally important, however, to study individuals' ability to recognize future threats and to use strategies that may help to offset these problems at an early stage, that is, whether they can engage in proactive coping (Aspinwall, 1997; Aspinwall & Taylor, 1997). So far, few empirical studies relating to the concept of proactive coping have been conducted. Nevertheless, the idea that people are not doomed to passively wait for things to happen, but that they are able to look forward and take appropriate measures in order to prevent or diminish a probable threat or its adverse outcomes is appealing and warrants empirical examination. Middle-aged and older adults seem to be a suitable population in which to examine these processes, since this age group faces the task of adapting to potential threats associated with aging, such as changes in personal health, living arrangements, friendships, and finances. The aim of the present study is to examine proactive coping in people aged 50 to 70. We will address the issue of the extent to which current stressors interfere with the employment of proactive coping, since current stressors may drain valuable resources that can then no longer be invested in proactive coping processes.

There are different views about the concept of proactive coping and the strategies it encompasses. Some researchers have described proactive coping as creating opportunities for personal growth and building up resources that facilitate the pursuit of challenging goals (Greenglass, 2002; Schwarzer, 2001; Schwarzer & Taubert, 2002) while others have concentrated on the efforts that may help to prevent future threats to personal goals (Aspinwall, 1997; Aspinwall & Taylor, 1997). Although both types of proactivity merit examination, this article focuses on the latter description and defines proactive coping as the processes which are employed to detect and prevent probable goal threats while working towards personal goals (Aspinwall, 1997). According to this conception, future stressors are by definition only potentially threatening and, as such, they remain more or less ambiguous. Consequently, they must be monitored over time to determine whether the potential threats develop into real problems (Aspinwall, 1997). Not surprisingly, Aspinwall and Taylor (1997) regard avoiding the possible obstacle as an ineffective strategy: if an individual disengages from a potential threat, he or she is not able to take appropriate measures to offset the stressful event at the right moment. Active, problem-focused and support-seeking strategies are necessary to deal effectively with a future threat and its consequences. In

addition, problem-focused coping increases the chance that the individual will be supplied with valuable information about the development of the threat as well as the effect of the initial coping attempts to change the course of the threat (Aspinwall & Taylor, 1997).

It has been argued that it is essential to be free from current stress in order to be able to afford attention to ensuing threats and to appraise and handle them accurately (Aspinwall & Taylor, 1997). Theoretically, individuals living under stressful conditions will be less likely to engage in proactive coping, as they will be more concerned with dealing with the present than with the future. Present stressors may exhaust an individual's available attentional resources and may particularly influence complex tasks, such as proactive coping, which require integration of information from different sources (Chajut & Algom, 2003).

Aging is often characterized as a shifting balance between gains and losses (e.g., Baltes & Baltes, 1990) due to many, potentially stressful changes, such as changes in work arrangements and social relationships. In this study, we hypothesize that people who are experiencing more life events will use less proactive coping to tackle future threats as these stressors may occupy the mind and consume resources that are then no longer available for future-oriented activities. In addition, previous research has shown that people moving from middle to older adulthood are particularly likely to experience an increasing amount of health-related stress (Aldwin, Sutton, Chiara, & Spiro, 1996; Martin, Grünendahl, & Martin, 2001). Due to the aging process, many people have to deal with a decline in health. Since good health is a valuable resource for the continued achievement of personal goals, it may be assumed that people are willing to invest a lot of effort into handling this goal threat, especially when an individual is relatively young. Dealing with bad health, however, may drain energy and attention. Therefore, we expect that current physical health stress is negatively related to proactive coping. In addition to life events and physical health stress, we will examine the association of current mental health stress with proactive coping. Although good mental health or positive emotions are usually regarded as an indication of successful adaptation and well-being, we argue that current mental health stress might also be a sign of exposure to current problems that occupy the mind and consume resources and which, therefore, may make it difficult to engage in proactive coping.

In this context, it is important to consider the fact that some people are more inclined to report stress than others. Previous research has shown that negative affect, which is a trait characteristic reflecting differences in negative mood and self-concept (Watson & Clark, 1984), is strongly associated with reporting life events (Brett, Brief, Burke, George & Webster, 1990), chronic conditions (Johnson, 2003), and somatic and mental complaints (for a review, see Watson & Pennebaker, 1989). Therefore, we include negative affect in our study as a control variable.

Although proactive coping is regarded as an important concept for understanding adaptation, it has not yet been operationalized in an explicit way. As a consequence, there is also no gold standard to assess proactive coping. We argue that it might even be impossible to develop such an instrument, since proactive coping may be best viewed as a process, which encompasses different elements that cannot be determined in one single measurement. Since we are interested in these various features, a multimethod approach is employed to address the hypothesis. Three studies are conducted, each highlighting a distinct aspect of proactive coping.

Firstly, a large epidemiological study provides the opportunity to gain an initial insight to what extent middle-aged and older adults possess proactive coping competence. Aspinwall and Taylor (1997, p. 431) have proposed that proactive coping may be conceptualized as a set of skills. People need general skills, such as goal setting, mental simulation, organization, and planning, if they wish to confront and attempt to prevent potential threats to their goals. In the first study, we will focus on the extent to which individuals take a future-oriented point of view and set realistic goals and plan strategies related to these goals. We will examine whether a representative sample of middle-aged and older people has these general skills and uses them in everyday life, since they may become useful when people encounter different types of potential threats that can only be prevented through the use of active strategies. We term the employment of these skills in everyday life proactive coping competence. The second, cross-sectional survey study focuses on whether middle-aged and older adults have developed a proactive coping orientation, through an examination of the extent to which people tend to anticipate and prevent future threats before they develop. Another important question is of whether individuals not only have a proactive coping orientation, but whether they actually undertake proactive coping efforts. In the third, longitudinal study, a subsample of the second study participated in a field experiment, which looked at self-reported proactive coping efforts in three different situations, each representing a possible age-related loss, which potentially threatens personal goals.

Although it is not the purpose of this article to make an extensive analysis of the usefulness and predictive value of the three proactive coping measures, we will provide some information in relation to the quality and uniqueness of the measures in the results sections of each of the three studies. We will examine their internal consistency and take a look at the relationships between the three proactive coping measures as well as their associations with the measures of related constructs, which assess preferences for future-orientation management styles. Firstly, we will examine the construct validity of the three proactive coping measures by exploring their associations with a measurement instrument that assesses proactive coping as defined by Greenglass and colleagues (Greenglass, 2002; Schwarzer, 2001; Schwarzer & Taubert, 2002), who, as previously mentioned, described proactive coping as the accumulation of resources and the creation of opportunities for goal management. In the present

article, we will term the latter concept 'goal management' in order to avoid confusion between these two different concepts. In addition, we explore the correlations with goal orientation and future temporal orientation. Goal orientation refers to the tendency to set both short-term and long-term goals and to reflect on future plans (Malouff et al., 1990), whereas future temporal orientation indicates a concern with the future and the ability to imagine future possibilities (Jones, Banicky, Lasane & Pomare, 1999). Although these three related constructs are not identical to proactive coping, they represent important tendencies, which promote engagement in proactive coping. We expect to find positive associations between these constructs and the three proactive coping measures. Since proactive coping is measured as a dispositional factor in study 2, we expect to find the highest positive correlations between proactive coping orientation and the three related constructs in this study. When goal management, goal orientation and future temporal orientation show small to moderate correlations with the proactive coping measures, we will examine the extent to which they explain additional variance in proactive coping.

Study 1

The aim of the first study is to examine to what extent a representative sample of middle-aged and older adults have proactive coping competence. We argue that it is important that people have general skills, such as goal setting and planning, in order to engage in proactive coping. People who own and use these skills in everyday life may also be more inclined to employ them in specific situations, such as when a potential threat becomes apparent. In addition, possessing proactive coping competence may indicate that an individual is able to take a future-oriented point of view, which facilitates the initiation of the proactive coping process when a potential goal threat is encountered.

We will examine which types of current stressors are negatively associated with proactive coping competence. Stressors include negative life events, physical health stress and mental health stress. In the general introduction, we mentioned that it is important to control for negative affect, since this may affect the reporting of stress. In this first study, we included neuroticism as an indicator for negative affect.

Methods

Participants and Procedure

This study employed data from the Second National Study of Morbidity and Interventions in General Practice (Schellevis et al., 2003) conducted by the Netherlands Institute of Health Services Research (NIVEL). As part of this cross-sectional survey study a random sample of persons (N = 12,699) was interviewed who were recruited via an aselective group of 104 general practices (response rate was 65%). The sample was

representative for the Dutch population with respect to gender and age (Schellevis et al., 2003). Since nearly every inhabitant of the Netherlands is registered at a GP practice, the sample was also representative with regard to health status.

For the aim of the present study, participants aged between 50 and 70 years old were selected (N = 3,189). This sample consisted of 1,668 women (52%) and 1,521 men (48%) with an average age of 58.7 years (sd = 6.0). Of these participants, 17% reported primary school as their highest completed education, 21% had a high school diploma, 42% had finished vocational training, and 20% had a college or university degree. With regard to marital status, 79% were married, 8% were divorced and 7% were widowed while 6% had never been married. Finally, 36% of the participants were in paid employment, 25% were retired and 10% were declared partially disabled. Only 1% was searching for a job while the remaining 27% reported housekeeping as their main activity.

Measures

Proactive Coping Competence. We developed a self-report measurement instrument with 16 questions in order to assess proactive coping competence. This instrument measures the extent to which adults in general take a future-oriented viewpoint, set feasible goals and think about planning strategies with respect to these goals. Sample items include “Do you have an image of the things you want, 10 years from now?” and “At this moment, have you taken any measures to achieve your goals?”. All items were assessed with a VAS scale with possible scores ranging from 0 to 10. A sum score was calculated and a higher score means that an individual has more proactive coping competence. Cronbach’s alpha was .82.

Related Construct. In this first study, we included ‘Goal Management’ as a related construct of proactive coping. It was assessed with the Proactive Coping Subscale of the Proactive Coping Inventory (Greenglass, Schwarzer, & Taubert, 1999). The scale consists of 14 items, which are measured on a 4-point Likert scale (1 = *not at all applicable to me* to 4 = *completely applicable to me*) (range: 14 - 56; M = 31.0, sd = 6.2). Sample items include: “I am a “take charge” person”, “I visualize my dreams and try to achieve them” and “I try to pinpoint what I need to succeed”. Greenglass and colleagues (1999) have reported that this scale has high internal consistency. In this study, Cronbach’s alpha was .79. A higher score indicates that an individual has the tendency to focus on his or her goals and seek opportunities to attain them.

Current Stressors. Several types of current stressors were measured. The first type of stress was operationalized as the number of negative life events. On the List of Threatening Experiences (Burgha, Bebbington, Tennant & Hurry, 1985), participants were asked to indicate whether they had experienced one or more of the 20 stressful events during the last three months, such as relational problems, job loss, and legal problems. The number of life events participants had experienced ranged between 0

and 5 life events ($M = .26$, $sd = .59$). In addition, general health stress was measured using the Dutch translation of the RAND-36 (Van der Zee & Sanderma, 1993), which estimates the relative burden of different diseases and can be summarized in a physical health component (range: 0 - 100; $M = 22.9$, $sd = 20.8$) and a mental health component (range: 0 - 100; $M = 15.3$, $sd = 16.9$). Sum scores on these two scales were computed in such a way that higher scores represent poorer physical and mental health. Cronbach's alphas were .91 for physical health stress and .89 for mental health stress.

Neuroticism. Neuroticism was measured with the Neuroticism scale of the EPQ-R (Eysenck, Eysenck & Barrett, 1985), which is the revised version of the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975). The Neuroticism scale consists of 12 questions, which can be answered with Yes (= 1) or No (= 0) (range: 0 - 12; $M = 2.2$, $sd = 2.5$). Sample items are "Do you ever feel 'just miserable' for no reason?" and "Are you a worrier?". Cronbach's alpha was .81.

Statistical Analyses

In addition to producing basic statistics, hierarchical regression analysis was employed to test the hypothesis that current stressors are negatively associated with proactive coping competence. Gender, age, education and neuroticism were entered as control variables into the regression equation first as they were significantly correlated with one or more key variables (see Table 2). The number of life events and physical and mental health stress were entered in the second step, followed by the main effect of goal management in the third step. Because of the large sample size, the probability level was set at .01 to avoid significance-relevance issues as much as possible.

Table 1. Description of the Proactive Coping Measures in the Three Studies

Measure	Study	Possible		Standard Deviation	Cronbach's Alpha	Odd-Even Correlation
		Range	Mean			
Proactive Competence	1	0 - 140	78.5	28.9	.82	.72
Proactive Orientation	2	9 - 36	24.6	5.2	.84	.77
Proactive Efforts	3	48 - 192	128.9	25.3	.90	.85

Results

Descriptives

Firstly, we report some preliminary results in relation to the reliability and validity of the proactive coping competence measure. Analysis showed that the measurement instrument had high internal consistency (see Table 1). In addition, exploratory analysis showed that there was only a small, positive correlation between

proactive coping competence and goal management. It appears that the two measurement instruments assess related, but unique constructs.

Table 2 displays the zero-order correlations of proactive coping competence with the other variables in this study. Physical and mental health stress showed significant negative correlations with competence while negative life events did not. In addition, neuroticism associated moderately with physical health stress ($r = .31, p < .01$) and highly with mental health stress ($r = .53, p < .01$), but not with the number of reported life events (ns). Negligible correlations were found between age and physical health stress ($r = .05, p < .01$), mental health stress ($r = -.02, ns$), and life events ($r = .03, ns$). Furthermore, we found cross-sectional age-related differences for proactive coping competence; it tends to decline with increasing age (see Figure 1).^a Education seems to be an important factor; individuals with a higher educational level reported more proactive coping competence. Finally, significant gender-related differences were found ($t = 6.72, p < .01$) with men showing more proactive coping competence than women.

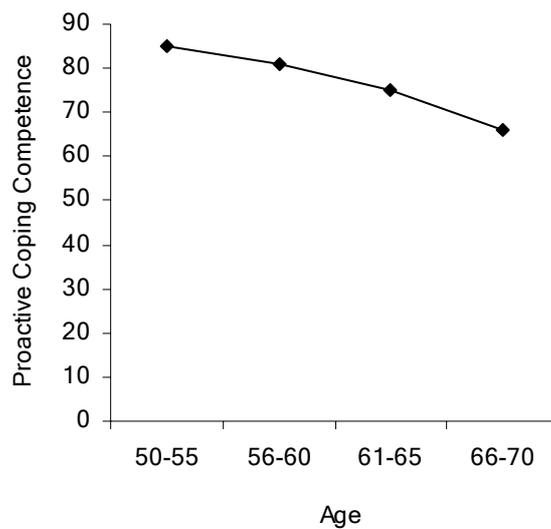


Figure 1. Age-related mean differences in proactive coping competence (N = 3,189)

^a In this study, we had the opportunity to examine the cross-sectional age differences in proactive coping competence in people aged 18 to 70 (N = 8,338). Age was negatively associated with proactive coping competence ($r = -.20, p < .01$). There was no evidence for a quadratic age trend. It appeared that proactive coping competence is highest when people are in their twenties and slowly decreases with age.

Regression Analysis

Hierarchical regression analysis was employed to test the hypothesis that current stressors are negatively associated with proactive coping competence. After controlling for age, gender, education and the influence of neuroticism, physical health stress was significantly associated with proactive coping competence, whereas life events and mental health stress were not (see Table 3). Physical health stress showed a small, negative relationship with competence, which means that people with more physical health stress reported less proactive coping competence. In addition, goal management associated positively with proactive competence; people who had the tendency to focus on their goals and ways of achieving these goals reported more competence. After entering goal management into the model, the association of physical health stress with competence did not change.

Discussion

The results of this cross-sectional study showed that physical health stress was slightly and negatively associated with proactive coping competence. Middle-aged and older individuals aged 50 to 70 who are experiencing current physical health stress have less proactive coping competence than those who are not experiencing physical health stress. Mental health stress was not significantly associated with proactive coping competence. In line with previous research (Prenda & Lachman, 2001), negative life events showed no relation with proactive coping competence. In future research, it would be interesting to examine the impact of various types of negative life events. This was not viable in the present study, since participants reported different life events and the sample sizes would therefore become too small. Furthermore, as people may appraise and react differently to these events, the subjective experience of stress may also be taken into account.

Study 2

In the second, cross-sectional survey study proactive coping will be researched in a new sample. Whereas in study 1 we highlighted proactive coping competence, in study 2 we will examine the extent to which people are inclined to employ activities to prevent potential stressors or their consequences. We will term this tendency proactive coping orientation. Its relationship with current physical and mental health stress, but not with life events, will be examined.

Methods

Participants and Procedure

Participants aged between 50 and 70 years old were recruited by telephone. Of the 398 individuals who indicated they were willing to participate in the survey study,

334 persons (84%) filled out the questionnaire and returned it. This sample included 159 women (48%) and 175 men (52%) with a mean age of 60.8 (sd = 5.5), which is slightly higher than the average age of the sample in study 1. Twelve percent reported primary school as their highest educational level, 26% had obtained a high school diploma, 42% had finished vocational training, and 20% had at least a college or university degree. Of the sample, 74% were married, 6% were divorced, and 12% were widowed while 8% had never been married. Finally, with regard to occupational status, 28% of the participants reported being in paid employment, 34% were retired, and 8% were declared unfit for work. Only 1% was searching for a job while the remaining 29% reported housekeeping as their main activity.

Measures

Proactive Coping Orientation. In this second study, the tendency to use proactive coping (i.e., proactive coping orientation) was assessed with the Preventive Coping Subscale of the Proactive Coping Inventory (Greenglass, Schwarzer, & Taubert, 1999). We argue that this subscale is a proper operationalization of what proactive coping orientation entails, namely the tendency to prevent or anticipate potential stressors before they fully develop. It consisted of 10 items assessed with a 4-point Likert scale (ranging from 1 = *not at all applicable to me* to 4 = *completely applicable to me*). Examples include: "I prepare for adverse events", "Before disaster strikes I am well-prepared for its consequences" and "I plan for future eventualities". We excluded the item "I develop my job skills to protect myself against unemployment", since we considered it to be less relevant for the individuals in our sample. Greenglass et al. (1999) have reported that the subscale has good internal consistency and that it shows sufficient discriminant validity as well as adequate construct validity. In the present study, Cronbach's alpha was .84.

Related Constructs. As in the first study, *Goal Management* (M = 33.3, sd = 5.7) was measured with the Proactive Coping Subscale of the Proactive Coping Inventory (Greenglass et al., 1999). In this study, Cronbach's alpha was .81. In addition, *Goal Orientation* was assessed with the Goal Orientation Scale ($\alpha = .69$) developed by Malouff and colleagues (1990). It consisted of 15 items on a 5-point Likert scale (ranging from 1 = *strongly disagree* to 5 = *strongly agree*) (range: 15 - 75; M = 39.6, sd = 7.1). Sample items include "I am goal-oriented" and "I spend a substantial amount of time planning how to reach my goals". A high score means that an individual has a tendency to set short-term as well as long-term goals and make plans to achieve these goals. Furthermore, participants filled out the Future subscale ($\alpha = .61$) of the Temporal Orientation Scale (Jones et al., 1999) in order to measure whether they have a *Future Temporal Orientation*. Participants had to answer 5 items on a 5-point Likert scale (ranging from 1 = *strongly disagree* to 5 = *strongly agree*) (range: 5 - 25; M = 17.1, sd = 3.5). Sample items are "When I want to get something done, I make step by step plans

and think about how to complete each step” and “I keep working at a difficult, boring task if it will help me to get ahead”. The higher the score on this scale, the more an individual is concerned with the future and is able to imagine future possibilities.

Current Stressors. As in the first study, current physical health stress ($M = 24.3$, $sd = 21.2$; $\alpha = .92$) and mental health stress ($M = 21.7$, $sd = 18.3$; $\alpha = .90$) were measured with the RAND-36 (Van der Zee & Sanderman, 1993). Again, the sum scores were calculated in such a way that higher scores indicated poorer physical and mental health.

Negative Affect. A Dutch translation of the Negative Affect Subscale of the PANAS (Watson, Clark & Tellegen, 1988) was used to assess negative affect. The scale consisted of 10 emotions, such as upset, scared, and jittery. Participants were asked to indicate on a 5-point Likert scale (ranging from 1 = *not at all* to 5 = *very often*) to what extent they generally experience these mood states (range: 10 - 50; $M = 18.3$, $sd = 5.1$). Cronbach's alpha was .82.

Statistical Analysis

The same statistical analyses were conducted as in study 1. Again, age, gender and education were included as control variables in the model. Instead of neuroticism, negative affect was entered as a control variable in order to control for its potential effect on the amount of stress reported by the participants. The probability level was set at .05.

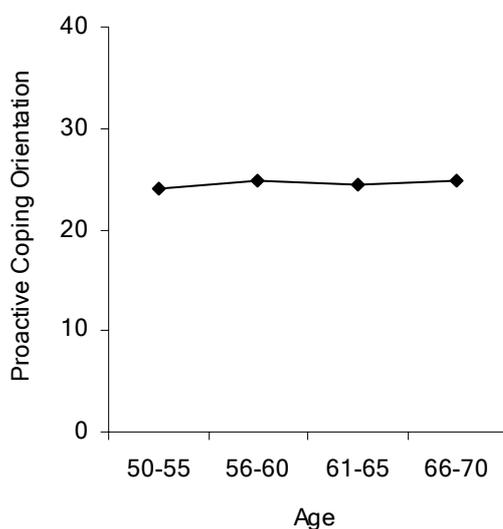


Figure 2. Age-related mean differences in proactive coping orientation ($N = 334$)

Results

Descriptives

Table 1 shows that the proactive coping orientation measure had satisfactory internal consistency. Furthermore, the measure showed moderate, positive correlations with the related constructs (see Table 2), which suggests that proactive coping orientation is a construct, which is distinct from the other dispositional factors. People who have a tendency to engage in activities to prevent future problems are also more goal oriented, are more inclined to manage their goals, and are more oriented towards the future.

Table 2 shows that none of the current stressors was significantly associated with proactive coping orientation. Negative affect showed significant correlations with physical health stress ($r = .42, p < .01$) and mental health stress ($r = .52, p < .01$). No significant associations were found between age and physical health stress ($r = -.10, ns$) and mental health stress ($r = -.08, ns$). In addition, there were no significant age-related differences for proactive coping orientation (see Figure 2) and no gender-related differences ($t = 1.17, p = .24$). On the other hand, education was significantly and positively correlated with proactive coping orientation.

Regression Analysis

The hierarchical regression analysis demonstrated that neither physical nor mental health stress was significantly associated with proactive coping orientation after controlling for age, gender, education, and negative affect (see Table 3).^b Goal management and goal orientation had a significant, positive effect whereas future temporal orientation did not. People who were more oriented towards their goals and the management of these goals were also more inclined to engage in proactive coping. Interestingly, education was also a significant variable; it showed a positive relation with proactive coping orientation.

^b We have some data on the association between life events and proactive coping orientation. Part of the sample described in the second study was willing to fill out a second questionnaire six months later ($N = 143$). This questionnaire contained the proactive coping orientation measure as well as a measure which assessed the number of life events experienced in the last three months (range: 0 - 2; $M = .28, sd = .58$), which was the same as used in study 1 and 3. We found a correlation of .05 (ns) between life events and proactive coping orientation. A second hierarchical regression analysis revealed that life events was not significantly associated with proactive coping orientation ($\beta = -.01, p = .95$). No major differences were found for the other predictors.

Table 2. Zero-order Correlations between the Variables Used in the Three Studies

	Proactive Coping Competence	Proactive Coping Orientation	Proactive Coping Efforts
Study	1	2	3
N	3,189	334	123
Intercorrelations			
Proactive Coping Competence	-		
Proactive Coping Orientation		-	
Proactive Coping Efforts		.24**	-
Related Constructs			
Goal Management	.25**	.49**	.35**
Goal Orientation		.37**	.29**
Future Temporal Orientation		.35**	.34**
Current Stressors			
Life Events	.03		-.02
Physical Health Stress	-.20**	.07	.03
Mental Health Stress	-.17**	.12	.16 †
Control Variables			
Neuroticism	-.16**		
Negative Affect		.14*	.06
Gender ¹	-.12**	.09	.18*
Age	-.26**	-.01	-.06
Education	.22**	.25**	.24**

Note. * $p < .05$ and ** $p < .01$ and † $p = .09$. ¹ Gender: 1 = male, 2 = female.

Discussion

The results demonstrate that current physical and mental health stress were not significantly related to proactive coping orientation. It appears that proactive coping orientation is a dispositional factor, which is less susceptible to external influences. Whether an individual has a tendency to prepare him- or herself for potential threats may to some extent be predicted by looking at other tendencies that person has, as was demonstrated in this second study. People who are more goal-oriented and have the tendency to manage their goals are also more likely to prevent future stressors.

Study 3

The third study examines the employment of proactive coping by middle-aged and older individuals in further detail. Whereas the previous study investigated whether individuals tend to anticipate future goal threats, this study focuses on the question of

the extent to which people employ proactive coping efforts when they are confronted with potential threats. This in-dept study has a longitudinal design and examines the impact of life events and current health stressors on proactive coping efforts.

An instrument was developed to measure proactive coping efforts in a subsample of the second study. Three vignettes were developed representing a probable, but uncertain future decline in one of the following resources that could constitute a threat to personal goals: a probable decrease in physical health, social relationships, or financial resources. A focus group study of 47 people (Ouwehand, De Ridder, & Bensing, 2001) revealed that these three potential threats are most significant for individuals aged between 50 and 70 years old. All situations were formulated as still controllable at this stage and as a minor threat to personal goals with the potential to become a major threat in the future. This follows Aspinwall and Taylor (1997) who suggested that proactive coping is directed at an approaching, but still indeterminate threat. However, a minor feeling of threat is necessary in order to motivate people to start monitoring and coping with a potential problem (Ouwehand et al., 2001).

Methods

Participants and Procedure

Of the 334 participants described in the second study, 180 (54%) indicated that they were willing to participate in a follow-up study. Six months later, 123 individuals (68%) filled out a second questionnaire and participated in a personal interview. This sample included 60 women (48.8%) and 63 men (51.2%) with a mean age of 61.8 years ($sd = 5.0$). Thirteen people indicated primary school as their highest completed education (11%), 59 participants had obtained a high school diploma (48%) and 29 individuals had a college or university degree (24%). In relation to marital status, 72% were married, 7% were divorced, and 11% were widowed. Finally, 28% of the participants had a paid job, 38% were retired, and 7% were declared unable to work. Only 2% were searching for a job while the remaining 24% reported housekeeping as their main activity.

Of the non-response group ($n = 57$), 20 individuals filled out the second questionnaire, but did not want to be interviewed, 2 participants had died, 15 individuals could not be contacted, and the other people were not willing to participate, due to lack of time ($n = 6$), lack of motivation or interest ($n = 8$), or other reasons ($n = 6$). The 123 individuals who completed the follow-up study had a slightly higher educational level than the original sample of 334 people ($t = 2.98$; $p = .00$). No differences were found for age ($t = 1.08$; $p = .28$), gender ($X^2 (df = 1) = .11$; $p = .67$), physical health stress ($t = .66$, $p = .51$) or mental health stress ($t = .01$, $p = .99$).

Measures and Statistical Analysis

Proactive Coping Efforts. To measure proactive coping efforts, the major part of the personal interview consisted of three vignettes describing a potential future loss in one of the following resources (see Appendix A): a potential loss of physical health (situation 1), a potential loss of social contacts (situation 2), and a potential loss of financial resources (situation 3). Participants were asked to read the vignettes carefully and to imagine the situations as well as they could. Proactive coping efforts were assessed with items from the subscales of the COPE (Carver, Scheier & Weintraub, 1989) written on small cards. As the COPE was originally developed to measure coping reactions to a stressful event that has already taken place, some of the items were slightly changed in order to make them more appropriate for a proactive coping context. For example, the item “I take direct action to get around the problem” of the subscale Active Coping was altered into “I take direct action to prevent this potential problem”. Participants indicated whether they would respond to the potential stressor described in the vignette as written on the card (4-point scale, ranging from 1 = certainly no to 4 = certainly yes). Two persons did not complete the questions about the final vignette due to tiredness.

Aspinwall and Taylor (1997) argue that successful proactive coping efforts involve active coping directed at the problem instead of denying the problem existing or disengaging from it. This was confirmed by factor analysis with AMOS 4 (Arbuckle & Wothke, 1999), which showed that the following subscales loaded best on the latent variable “proactive coping”: active coping ($\beta = .81$, $p = .00$), planning ($\beta = .90$, $p = .00$), suppression of competing activities ($\beta = .72$, $p = .00$) and seeking instrumental support ($\beta = .55$; $p = .00$). The chi-square test revealed a good fit of the model ($X^2 = 4.64$ ($df = 2$; $p = .10$)) as did these three fit indices: TLI = .96, RMSEA = .10, CFI = .99. For the aim of this final study, these four subscales were used to compute a sum score across the three situations. Since each subscale consisted of four items and proactive coping efforts were assessed in three situations, the sum score was calculated over 48 items. Cronbach’s alpha for the total sum of proactive coping efforts was .90.

Other Variables. The number of life events participants had experienced during the last three months was assessed with the List of Threatening Experiences (Burgha et al., 1985), which is the same list as we used in the first study. The range of life events participants reported was 0 to 2 with an average of .29 ($sd = .57$). In addition, the other key variables described in the second study were also used in this third study: physical health stress ($M = 25.3$, $sd = 22.0$; $\alpha = .92$) and mental health stress ($M = 21.7$, $sd = 18.5$; $\alpha = .91$), negative affect ($M = 18.1$, $sd = 4.9$; $\alpha = .82$), goal management ($M = 33.6$, $sd = 5.7$; $\alpha = .80$), goal orientation ($M = 39.6$, $sd = 7.3$; $\alpha = .73$), and future temporal orientation ($M = 17.0$, $sd = 3.2$; $\alpha = .61$).

Statistical Analysis. Since physical and mental health stress were measured in the first questionnaire, we were able to examine their longitudinal impact on proactive

coping efforts, which were assessed six months later. Again, hierarchical regression analysis was employed to test the hypothesis that current stressors affect proactive coping efforts.

Table 3. Hierarchical Regression Analyses Predicting Proactive Coping Competence (N = 3,189), Proactive Coping Orientation (N = 334), and Proactive Coping Efforts (N = 123)

Predictors	Study 1 (N = 3,189) Proactive Competence			Study 2 (N = 334) Proactive Orientation			Study 3 (N = 123) Proactive Efforts		
	β	p	R ²	β	p	R ²	β	p	R ²
Step 1			.12**			.08*			.07
Age	-.22	.00		-.01	.93		-.05	.61	
Gender ¹	-.06	.01		.02	.85		-.11	.27	
Education	.16	.00		.27	.01		.18	.08	
Neuroticism ²	-.12	.00							
Negative Affect ²				.08	.33		.04	.69	
Step 2			.13**			.09			.12†
Life Events	.04	.11					-.12	.20	
Physical Stress	-.11	.00		-.01	.91		-.12	.36	
Mental Stress	.02	.50		.12	.37		.33	.02	
Step 3			.16**			.33**			.29**
Goal Management	.18	.00		.33	.00		.19	.06	
Goal Orientation ³				.18	.03		.19	.06	
Future Orientation ³				.14	.13		.19	.08	

Notes. ¹ Gender: 1 = male and 2 = female; ² Neuroticism was used as a control variable in Study 1 whereas Negative Affect was used in Study 2 and 3; ³ The effects of Goal Orientation and Future Temporal Orientation were only examined in Study 2 and 3; * p-change < .05 and ** p-change < .01, † p-change = .08.

Results

Descriptives

Regarding the internal consistency of the measurement instrument used in this study, Table 1 shows that it was high. Furthermore, proactive coping efforts were slightly associated with proactive coping orientation (see Table 2), which suggests that people may have a tendency to engage in particular behavior, but may not always show that behavior. In addition, we found small to moderate, positive correlations between proactive coping efforts and the three related constructs. People who are more goal and future oriented and more focused on the management of their goals, reported more proactive coping efforts.

The zero-order correlations in Table 2 show that current physical health stress and life events were not significantly associated with proactive coping efforts. There was a positive trend, however, with respect to the association between mental health stress and proactive coping efforts. Again, negative affect was positively related to physical health stress ($r = .38, p < .01$) and mental health stress ($r = .49, p < .01$), but not with life events ($r = .15, ns$). No significant age-related differences in proactive coping efforts (see Figure 3) or current stressors were found (all p 's $> .30$). Moreover, there was a marginally significant gender-related difference ($t = 1.96, p = .05$); men were more likely to take action to prevent potential declines than women. As in the two previous studies, education was significantly correlated with the proactive coping measure.

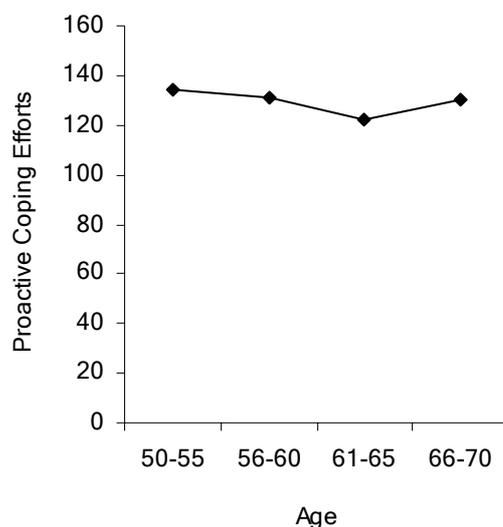


Figure 3. Age-related mean differences in proactive coping efforts ($N = 123$)

Regression Analysis

After controlling for age, gender, education and negative affect, mental health stress had a significant longitudinal and positive effect on the employment of proactive coping efforts, but life events and physical health stress did not influence proactive coping efforts (see Table 3). People with more current mental health stress reported more proactive coping efforts. Furthermore, the effects of goal management, goal orientation and future temporal orientation on proactive coping efforts were positive and

nearly significant. We also found a nearly significant effect of education on proactive coping efforts; people with a higher level of education reported more proactive coping efforts.

Discussion

The results of this third study showed that life events and current physical health stress did not influence the use of proactive coping efforts. Interestingly, a significant, positive impact was found for current mental health stress on proactive coping efforts to prevent future stressors. People who had more mental health stress made more proactive coping efforts. An explanation for this finding may be that a certain level of mental health stress is needed to start using proactive coping strategies. Although mental health stress may be regarded as a sign that an individual is experiencing problems in the present that need attention, it is possible that a small amount of mental health stress functions as a trigger for people to start engaging in proactive coping. This idea corroborates the findings of the focus group study described in the introduction of this third study; the proactive coping process is initiated when an individual feels at least a small amount of threat.

Furthermore, the study demonstrated small correlations between proactive coping orientation and proactive coping efforts. So, these results suggest that the two instruments measure a different aspect of proactive coping, for example orientation versus actual behavior. This may also explain the small correlations: it is commonly known that people with a tendency to behave in a certain way do not, as a result of situational constraints or other factors, automatically exhibit this behavior.

General Discussion

The aim of the present study was to examine proactive coping in middle-aged and older adults, a valuable population in which to research this concept, since these people are facing the task of adapting to many probable changes associated with aging. Life-span models of development suggest that people constantly adapt to environmental and internal changes throughout their lives, but this process becomes especially important in older age as negative events occur more often (M.M. Baltes & Carstensen, 1996; P.B. Baltes, 1997; P.B. Baltes & M.M. Baltes, 1990; Brandtstädter, Rothermund, & Schmitz, 1997; Marsiske, Lang, Baltes & Baltes, 1995).

This study is one of the first to examine different aspects of proactive coping in a large sample using a variety of measurement instruments. We hypothesized that current stressors may impede the use of proactive coping aimed at diminishing a potential goal threat in an early stage, since these current stressors may drain important resources that can then no longer be invested in proactive coping activities. A

multimethod approach was employed to test this hypothesis in three different studies, each highlighting a different feature of proactive coping.

We found that neither life events nor current physical health stress were associated with proactive coping competence, proactive coping orientation or proactive coping efforts. Although physical health stress was significantly related to proactive coping competence, this effect was rather small. In addition, current mental health stress had a positive impact on the extent to which people undertake proactive coping efforts in order to prevent potential threats, whereas it was not associated with proactive coping competence and proactive coping orientation. People who were experiencing more mental health stress made more proactive coping efforts.

An explanation for the finding that proactive coping competence as well as proactive coping orientation were not or only slightly associated with current stressors may be that, in contrast to behavior, skills and a tendency to act in a certain way are not likely to be much affected by factors that fluctuate over time, such as current stressors. The present study showed that proactive coping competence and proactive coping orientation were associated with other relevant orientations an individual has. When people are more likely to focus on their goals and think about the possible ways to attain these goals as well as when they are more goal and future oriented, they are also more likely to have proactive coping competence and a proactive coping orientation.

A limitation of the first two studies was their cross-sectional design. It is possible that proactive coping competence and proactive coping orientation contribute to better health or well-being. People who have a proactive coping orientation and the capacity to engage in proactive coping may be able to create environments for themselves that are free from obstacles and full of opportunities. Future research may examine the longitudinal effect of proactive coping orientation and competence on health, well-being and life satisfaction.

Contrary to our expectations, proactive coping efforts were not influenced by current physical health stress either. A possible explanation may be that the age group in this study does not yet experience many physical health problems. Indeed, research has shown that people aged 45 to 65 reported better perceived health than 15 years ago (Van Lindert, Droomers & Westert, 2004), so our cohort might have been relatively healthy. The general means of the physical health stress measure confirm this idea; they are rather low. Future research might examine other factors that cause a stressful life environment. People can face other difficult circumstances, such as chronic financial problems, which may limit the attention that is available for the future and potential goal-threatening stressors. These problems may have a greater impact on proactive coping. Furthermore, the way people appraise their situation might be an important aspect to consider in future research.

Interestingly, current mental health stress had a positive influence on the amount of proactive coping efforts an individual made. As discussed before, it is

possible that mental health stress serves as a trigger for the initiation of the proactive coping process when the amount of mental health stress is low to moderate. We expected mental health stress to be an indication that an individual is facing current problems, which makes it difficult to think about the future and engage in proactive coping. The presented results, however, suggest that low to moderate levels of mental stress may be a sign that people feel slightly threatened and that they want to do something constructive about the (potential) threats that may be the cause of this feeling. It may be interesting for future research to examine whether there is an inverse U-shaped association between mental health stress and proactive coping, that is, whether low to moderate levels of mental stress lead to more proactive coping efforts while no or high levels of mental health stress result in less proactive coping efforts.

Another interesting finding of this study was that education showed significant, positive relations with all aspects of proactive coping. People with a higher educational level had more proactive coping competence, more often a proactive coping orientation, and made more proactive coping efforts. Education may be an indication that resources and skills are present that are important for proactive coping. Researchers have proposed that people may develop information processing, analytic and problem-solving skills through education (Ross & Wu, 1995), which are important skills necessary for individuals to be able to undertake proactive coping efforts. In addition, proactive coping competence and proactive coping orientation may be the direct result of education.

To sum up, the present article has provided the first results for the use of proactive coping by middle-aged and older adults. We used three different measurement instruments to examine proactive coping and its different features. The results of the present article do not provide an answer to the question of which measurement instrument should be regarded as most useful. It was not the aim of this study to develop a gold standard for the concept of proactive coping. This may not even be possible, since proactive coping requires several different skills and involves both cognitive and behavioral activities. All these aspects might be equally important parts of the same concept. For future research, it may be interesting to further develop measurement instruments that focus on proactive coping in different situations. In particular, it may be a challenge to develop such an instrument without relying on a self-report measure. Although people might to some extent have a predisposition to be future- and problem-oriented, research indicates that situational characteristics may play an important role in shaping (proactive) coping (e.g., De Ridder & Kerssens, 2003; Ouwehand, De Ridder & Bensing, under review).

To conclude, although proactive coping is a concept that has hardly been addressed in previous empirical research, it is a promising concept, as it may contribute to our understanding of how people adapt to stressful changes and continue engaging in and attaining significant personal goals. Nevertheless, the essential question remains

of whether proactive coping is always adaptive. Proactive coping may drain critical coping resources when signs of a future problem are appraised in the wrong way (Aspinwall & Taylor, 1997). Furthermore, it may cause hypervigilance and rumination in some people. It would be interesting to address these negative consequences in future research. Some researchers have suggested that flexibility in accommodating to circumstances might be an important element for successful development and aging (Brandstädter & Rothermund, 2002); accepting the fact that changes do occur and that they cannot always be prevented may be an essential part of successful adaptation as well.

Chapter 4

Who Can Afford to Look to the Future? The Relationship between SES and Proactive Coping Competence

Abstract

The present cross-sectional study examines whether middle-aged and older adults (N = 3,189) have proactive coping competence and to what extent this is associated with socioeconomic status (SES). Proactive coping competence refers to the ability to take a future-oriented point of view, set realistic goals and make plans. We found that higher SES, especially with respect to income and education, was positively related to proactive coping competence. In addition, this relationship was not moderated by, but was partially mediated by current physical health stressors. Physical problems may not necessarily be associated with the number of skills an individual has, but are associated with an inability to undertake future-oriented activities as a result of the fact that these present problems require attention and drain other resources.

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Submitted for publication.

Introduction

Personal goals are an important part of life, since the pursuit and achievement of goals contribute to subjective well-being (Brunstein, 1993; Diener, Suh, Lucas, & Smith, 1999; Rapkin & Fischer, 1992). Therefore, it is essential to effectively manage the stressors that may threaten goals. The processes through which people identify goal threats and cope with these threats have been mainly described from a reactive point of view. However, people may also be capable of foreseeing potential problems and may thus attempt to prevent the emergence of future threats before they occur. In other words, they may engage in proactive coping (Aspinwall, 1997; Aspinwall & Taylor, 1997).

Opinions differ about the definition of proactive coping, with some describing proactive coping as the generation of future opportunities for goal management and personal growth (Greenglass, 2002; Schwarzer, 2001; Schwarzer & Taubert, 2002), whereas others concentrate on the efforts that may help to prevent potential threats (Aspinwall, 1997; Aspinwall & Taylor, 1997). Although it is important to examine both forms of proactivity, we will focus on the latter, namely the detection and avoidance of potential stressors that may become a threat to personal goals. More specifically, the aim is to examine the socioeconomic selectivity of proactive coping.

It has been argued that internal and external resources are important with respect to engagement in the proactive coping process, that proactive coping is practically impossible without them (Aspinwall, 1997; Aspinwall & Taylor, 1997). Resources are those elements an individual can draw on when needed. They can be of a physical, psychological or social nature and may be already available or may exist in the form of skills for obtaining resources (Lazarus & Folkman, 1984). Resources, such as money, social support and organizational skills, may facilitate effective proactive coping. When such resources are not present, an individual's orientation to the future may be reduced, since it is likely that attention will be more focused on the present and on daily tasks. Consequently, recognition and anticipation of potential stressors are inhibited.

Socioeconomic status (SES) may be an indication of the amount of resources available or the likelihood that an individual is able to accumulate resources. For instance, researchers have suggested that, as well as information processing and problem-solving skills, people develop communication and analytic skills through education, which may generate a sense of personal control (Ross & Wu, 1995). In addition, low SES may inhibit efficient information processing and emotion-regulation (Taylor, Repetti & Seeman, 2003).

People low in SES may also experience more stressors, psychological distress, and negative emotions (Gallo & Matthews, 2003), as they are more often exposed to chronically stressful living conditions, such as overcrowding, crime and noise (Taylor, Repetti & Seeman, 2003; Taylor & Seeman, 2000) and because they face more life events (Adler et al., 1994; McLeod & Kessler, 1990), and have a lower reserve capacity

to effectively cope with these events and circumstances. These current stressors may hinder proactive coping activities, since chronic problems occupy the mind and are likely to drain valuable resources which are necessary for reflection and thinking about the future (Aspinwall & Taylor, 1997).

As a result of entailing a greater number of current stressors and a smaller number of accessible resources, low SES may provoke reactive responding, characterized, for example, by people only having the time and energy to concentrate on the present and the short-term future (Taylor & Seeman, 2000). It is assumed that people low in SES will be more occupied with present problems; in contrast, people high in SES may be able to engage in future-oriented thinking, goal-setting and planning. One recent study by Feldman and Steptoe (2003) indeed showed that SES was positively related to problem-oriented coping; individuals with a higher SES were more inclined to use active coping and planning strategies. Furthermore, some evidence has been found that SES is associated with the prevention of threats (Pinquart & Sörensen, 2000). Nevertheless, little research has been conducted and our study is the first to explicitly test the assumption that lower SES inhibits people from focusing on the future and preventing potential goal threats or their consequences.

Although proactive coping is an interesting concept, no consensus has yet been reached about the best way to operationalize the concept and make it useful for empirical research. Aspinwall and Taylor (1997; Aspinwall, 1997) argue that proactive coping may not only be conceptualized and operationalized as behavioral activities, such as actively making efforts to prevent or alter the course of a potential stressor, but also as cognitive activities and skills, such as goal-setting, regulation of attention, and planning (Aspinwall, 1997; Aspinwall & Taylor, 1997). It is likely that these different aspects of proactive coping cannot be determined in one single measurement. In this study, we will examine proactive coping competence, which refers to the ability of people to take a future-oriented point of view and set realistic goals and plan strategies related to these goals. People who have and use general skills, such as goal-setting and planning, may also be more inclined to employ them in specific situations, such as when a potential threat becomes apparent. Proactive coping competence may assist in the proactive coping process.

The aim of the present article is to examine proactive coping competence in adults aged between 50 and 70 years old. This seems to be a suitable research population, since this age group faces the task of attempting to prevent or adapt to many probable changes associated with aging, such as a decline in health or financial resources and changes in social relationships. Despite the fact that people constantly adapt to environmental and internal changes throughout their lives, this process becomes particularly important in older age, since negative events occur more often and the balance between gains and losses becomes less favorable (M.M. Baltes &

Carstensen, 1996; P.B. Baltes, 1997; P.B. Baltes & M.M. Baltes, 1990; Brandtstädter, Rothermund, & Schmitz, 1997; Marsiske, Lang, Baltes & Baltes, 1995).

To sum up, we hypothesize that individuals with a lower socioeconomic status will have less proactive coping competence. This study will include multiple SES indicators in order to determine the relative influence of income, education, and occupational status on proactive coping competence. Since a lower SES is associated with more current stressors, which may in turn be negatively related to the use of proactive coping competence, we will examine whether current stress plays a role in the relationship between SES and proactive coping competence. In this study, we will test two competing hypotheses regarding the role of current stressors. On the one hand, current stressors may mediate the relationship between SES and proactive coping competence, because low SES is often associated with the experience of more current stressors, which in turn leads to less proactive coping competence as a result of fewer resources being available. On the other hand, current stressors may also play a moderating role. People who are both low in SES and are overwhelmed with current problems requiring their attention may have less proactive coping competence.

As people age, the likelihood of experiencing a decline in health increases and poor health becomes a source of stress for a greater number of those people. We will, therefore, concentrate on poor physical health as a current stressor. In addition, we will examine the role of poor mental health, since this may be an indication that people are currently experiencing problems that are consuming their attention and using up resources, which are then no longer available for future-oriented activities.

Method

Procedure and Sample

This study employed data from a large cross-sectional survey study, the Second National Study of Morbidity and Interventions in General Practice (Schellevis et al., 2003), which was conducted by the Netherlands Institute of Health Services Research (NIVEL). Via an aselective group of 104 general practices, a random sample of individuals (N = 12,699) was recruited and interviewed (response rate was 65%). The sample was representative for the Dutch population with respect to gender and age (Schellevis et al., 2003). Moreover, as nearly everyone in the Netherlands is registered at a GP practice, the sample was also representative with regard to health status.

For the aim of this study, individuals aged 50 to 70 were selected (N = 3,189). The sample included nearly as many men (48%) as women (52%) and the average age was 58.7 years (sd = 6.0). With respect to participants' marital status, 79% were married, 8% were divorced, 7% were widowed, and 6% had never been married. Furthermore, 36% of the participants were in paid employment, 26% were retired, and 10% were declared unfit for work. Finally, 1% was searching for a job while the remaining 27% reported housekeeping as their main activity.

Measures

Proactive Coping Competence. Proactive coping competence was measured with a 16-item questionnaire developed by the authors. Previous research has demonstrated that the scale had high internal consistency and was only moderately associated with a measure that assesses proactive coping as defined by Greenglass and colleagues (see e.g., Ouwehand, De Ridder & Bensing, under review). Our instrument measures the extent to which adults in general take a future-oriented viewpoint, set feasible goals and think about planning strategies with respect to these goals. Sample items include “Do you have an image of the things you want, 10 years from now?” and “At this moment, have you taken any measures to achieve your goals?”. All items were assessed with a VAS scale with possible scores ranging from 0 (= *no, not at all*) to 10 (= *yes, very much*). A sum score was calculated and a higher score means that an individual has more proactive coping competence. Cronbach’s alpha was .82.

Socioeconomic Status. Socioeconomic status is generally indicated by educational level, income, and occupational status (Williams & Collins, 1995). In order to measure occupational status, participants were asked to report their current or most recent occupation including information about grade, main activities and job responsibilities. According to the International Socio-economic Index of Occupational Status (Ganzenboom, De Graaf & Treiman, 1992) an ISEI-score was computed. With regard to educational level, 17% had finished primary education and 21% reported secondary education as their highest level of education. A further 25% had finished lower vocational education while 17% had finished intermediate vocational training and 20% had a college or university degree. Net household income was coded in Euros per month using six categories: less than 900 (8%), between 900 and 1,150 (12%), between 1,150 and 1,400 (14%), between 1,400 and 1,750 (21%), between 1,750 and 2,450 (21%), and more than 2,450 (24%).

Physical and Mental Health Stress. In addition, general health stress was measured using the Dutch translation of the RAND-36 (Van der Zee & Sanderman, 1993), which estimates the relative burden of different diseases and can be summarized through a physical health component (range: 0 - 100; M = 22.9, sd = 20.8) and a mental health component (range: 0 - 100; M = 15.3, sd = 16.9). Sum scores on these two scales were computed in such a way that higher scores represent poorer physical and mental health. Cronbach’s alphas were .91 for physical health stress and .89 for mental health stress.

Neuroticism. Previous research has shown that some people are more inclined to report stress than others, especially those who have a high score on negative affectivity (e.g., Watson & Pennebaker, 1989). In order to control for this influence, we assessed neuroticism as an indicator for negative affect and included it as a control variable in this study. We measured neuroticism with the Neuroticism scale of the EPQ-

R (Eysenck, Eysenck & Barrett, 1985), which is the revised version of the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975). The Neuroticism scale consists of 12 questions, which can be answered with Yes (= 1) or No (= 0) (range: 0 - 12; M = 2.2, sd = 2.5). Sample items are "Do you ever feel 'just miserable' for no reason?" and "Are you a worrier?". Cronbach's alpha was .81.

Statistical Analyses

In addition to producing basic statistics, we employed hierarchical regression analysis to test the moderator hypothesis. Gender, age and neuroticism were entered as control variables into the regression equation first as they were significantly correlated with one or more key variables (see Table 1). As our hypotheses predict that SES is positively associated with proactive coping competence, income, education and occupational status were entered in the second step, followed by the main effects of physical and mental health stress in the third step. In the fourth and final step, the interaction effects of SES with physical and mental health stress were entered in order to determine the moderating effect of health stress in the relationship between SES and proactive coping competence. To avoid multicollinearity between main effects and interaction term, the variables were centered (Aiken & West, 1991; Holmbeck, 1997; West, Aiken & Krull, 1996). Because of the large sample size, the probability level was set at .01 in order to avoid significance-relevance issues as much as possible.

In addition, we used Maximum Likelihood (ML) estimation in Structural Equation Modeling (SEM) with AMOS 4 (Arbuckle & Wothke, 1999) to test the mediation hypothesis. In SEM it is possible to test the relationships between variables simultaneously while controlling for the effects of other variables included in the model and adjusting for measurement errors. The univariate skewness of the distributions of all variables ranged between -.26 (proactive coping competence) and 1.48 (mental health stress), which is considered sufficiently normal to allow parametric statistics (Hox & Bechger, 1998). Further, multivariate kurtosis, measured by Mardia's coefficient, did not indicate severe non-normality: its value for the overall model was 5.24.

In order to test the hypothesized mediation effect, it has been suggested by Holmbeck (1997) that the fit of the direct model without the potential mediators should be tested first. Subsequently, a partially mediated model will be examined in which all paths should be significant in predicted directions. Finally, a chi-square difference test can be conducted to see whether the model significantly improves in fit if the direct paths from the independent variables to the dependent variables are constrained to zero.

An advantage of the current study is that the sample size was large, which gave us the opportunity to randomly split the sample in two. Thus, the results could be cross-validated in the second half of the sample, which is particularly important when post-hoc model modifications are required. As Chi-square statistic is sensitive for sample size

(Hox & Bechger, 1998) and will probably reject an equation model when using large sample sizes, we primarily inspected the following four fit indices. In addition to the Adjusted Goodness-of-Fit Index (AGFI), we consulted the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI) as well as the Root Mean Square Error of Approximation (RMSEA), since Hu and Bentler (1998) have recommended them for ML-estimation. If the model fits the data well, the RMSEA is small (common norm suggests smaller than 0.05). For the AGFI, TLI and CFI, fit indices of 0.95 or higher indicate a good fit.

Results

Descriptives

Table 1 shows the zero-order correlations of the main variables in this study. Household income and educational level demonstrated small to moderate, positive correlations with proactive coping competence whereas occupational level showed only a very small significant association with proactive coping competence. Furthermore, marginal, negative correlations were found between the three SES-indicators and physical and mental health stress. Both physical and mental health stress related moderately to highly with neuroticism.

Table 1. Zero-order Correlations between the Variables (N = 3,189)

	1	2	3	4	5	6	7	8	9
1. Proactive Competence	-								
2. Income	.28	-							
3. Education	.22	.43	-						
4. Occupational Status	.09	.28	.38	-					
5. Physical Health Status	-.20	-.21	-.17	-.12	-				
6. Mental Health Status	-.17	-.17	-.12	-.06	.63	-			
7. Neuroticism	-.16	-.08	-.13	-.02 †	.31	.53	-		
8. Age	-.26	-.24	-.16	-.01 †	.05 †	-.02 †	.04 †	-	
9. Gender ^a	-.12	-.12	-.19	-.02 †	.10	.13	.15	.03 †	-
Mean	78.5	4.1	5.2	44.3	22.9	15.3	2.2	58.7	1.5
(SD)	(28.9)	(1.6)	(2.8)	(20.4)	(20.8)	(16.9)	(2.5)	(6.0)	(0.5)

Notes. All *p*'s were < .01 except for the correlations followed by †, then *p* > .05. ^a Gender: 1 = male, 2 = female.

Moderator Hypothesis

Table 2 shows the results of the hierarchical regression analysis conducted to test the hypothesis that SES is positively associated with proactive coping competence and that physical and mental health stress serve as moderators in this relationship. After controlling for age, gender and neuroticism, both income and education

demonstrated small, positive associations with proactive coping competence while occupational status did not. In addition, physical health stress was slightly related to competence while mental health stress was not. All interaction effects were insignificant, which means that in this study the hypothesis that the association between SES and proactive coping competence is moderated by health stressors is rejected.

Table 2. Hierarchical Regression Analysis Testing the Moderator Hypothesis

Predictors	β	p	R-square	p (F-change)
Step 1				
Age	-.24	.00	.09	.00
Gender ^a	-.08	.00		
Neuroticism	-.14	.00		
Step 2				
Income	.19	.00	.15	.00
Education	.10	.00		
Occupational Status	-.02	.55		
Step 3				
Physical Health Stress	-.09	.00	.16	.00
Mental Health Stress	.01	.91		
Step 4				
Income x Physical	.04	.68	.16	.57
Income x Mental	.02	.85		
Education x Physical	.06	.41		
Education x Mental	-.01	.95		
Occupation x Physical	-.12	.14		
Occupation x Mental	.11	.15		

Note. ^a Gender: 1 = male, 2 = female

Mediator Hypothesis

Since basic statistics showed that gender, age and neuroticism might be important variables associating with several key variables, they were included as exogenous variables in the SEM-model with free paths to all variables in the model. The model can be found in Figure 1. First, the direct-effect model tested the associations of the three SES indicators with proactive coping competence in the absence of both potential mediators. The model fitted well (see Table 3) and it became clear that income as well as education showed small and positive associations with proactive coping competence while occupational status did not.

The second step was to add the paths from SES to physical and mental health stress and from physical and mental health stress to proactive coping competence. This model fitted well (see table 3) and the results showed that only income had a small, negative relation with physical and mental health stress; education and occupational status were not associated with the two health stress measures. In addition, physical health stress was slightly and negatively associated with proactive coping competence, but mental health stress was not significantly related to proactive coping competence.

Finally, the existence of full mediation was tested. Results demonstrated that the fit indices were not sufficient for this third model. In addition, the model did not significantly improve in fit when the paths from SES to proactive coping competence were constrained to zero ($\Delta\chi^2 = 29.49$, $\Delta df = 3$). The partially mediated model was a better fit for the data. Thus, the relationship between SES, particularly with respect to income, and proactive coping competence is not fully, but only partially mediated by physical health stress. Together, SES and health stress explained 17% of the variance in proactive coping competence.

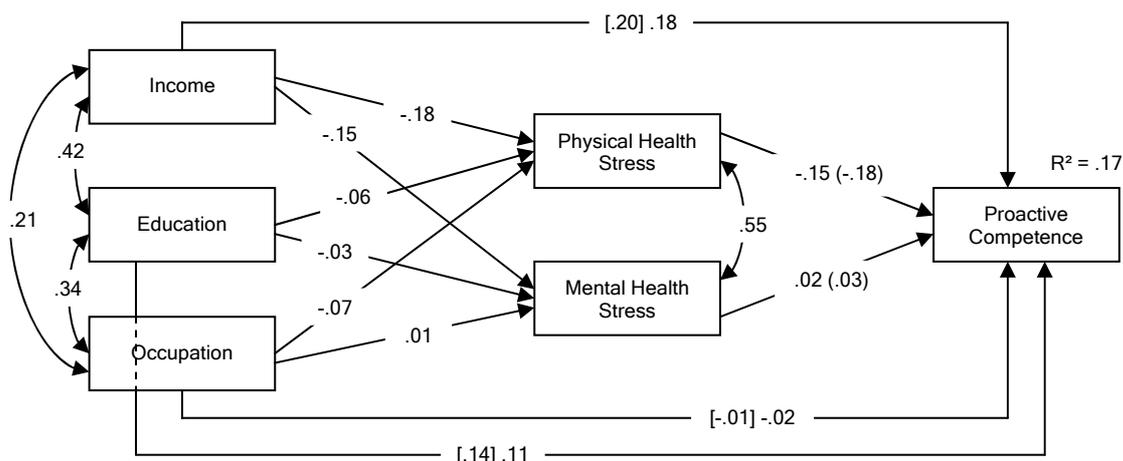


Figure 1. The partially mediated model is shown including the standardized regression weights and the correlations between the error variances of the variables. The direct effects of the three SES indicators on proactive coping competence in the absence of the mediators are presented between brackets while the effects of physical and mental health stress on proactive coping competence when the direct effects of SES were constrained to zero are presented between parentheses.

The results were for the greater part validated in the second half of the sample. The partially mediated model fitted very well and even slightly better than in first half of the sample (see Table 3). Furthermore, the associations between the variables were in

the same direction and of about the same significance level. It is noteworthy that correcting for age and gender had little to no impact on the results described above.

Table 3. Chi-square Statistics and Fit Indices for the Different Models

	<i>X</i> ²	<i>df</i>	<i>p</i>	<i>AGFI</i>	<i>TLI</i>	<i>CFI</i>	<i>RMSEA</i>
Model A	.05	1	.81	.99	.99	1.00	.00
Model B	5.22	2	.07	.95	.93	.99	.05
Model C	34.71	5	.00	.87	.73	.96	.11
Model V	3.41	2	.18	.97	.96	.99	.04

Notes. Model A = direct-effect model in absence of mediators; Model B = partially mediated model; Model C = fully mediated model; Model V = partially mediated model tested in validation sample

To sum up, analyses showed that higher SES, particularly higher income and a higher educational level, were positively associated with proactive coping competence. This relationship was not moderated by physical health stress or by mental health stress, but was partially mediated by physical health stress.

Discussion

The purpose of this article was to examine the association between socioeconomic status (SES) and proactive coping competence. Proactive coping competence involves the possession of several general skills, such as goal setting and planning, since people who use these skills in everyday life may also be more inclined to employ them in a more specific situation as when a potential stressor is encountered. As such, proactive coping competence may be an important aspect of proactive coping. We hypothesized that SES may be positively associated with proactive coping competence, because higher SES may be a sign that more resources are available to an individual.

The results demonstrated that income and educational level were positively related to proactive coping competence, whereas occupational status was not. People with a higher income and/or more education were more likely to have general skills important for proactive coping. These results are consistent with the few studies that have researched the association between SES and proactive, future-oriented activities (Feldman and Steptoe, 2003; Pinquart & Sörensen, 2000; Prenda & Lachman, 2001). Note that net household income appears to have the most important relationship with proactive coping competence. Money seems to make it easier to have proactive coping competence or in other words, to be future-oriented and to set goals and plan strategies related to these goals. However, education also has a significant impact on proactive coping competence. Education is probably an indication that an individual has important

resources, such as organizational skills, or may be able to accumulate resources. Proactive coping competence may be partly learned through education or be highly associated with skills, such as analytic skills, that are learned through education.

The finding that proactive coping competence was more associated with income than with education may be explained by the possibility that the present cohort of middle-aged and older adults consists of people who have a lower average educational level than younger generations, but who may have worked their way up, which has generated a higher income and more skills. It has been stated that education is the most stable indicator of SES (Krieger, Williams & Moss, 1997; Williams & Collins, 1995) and may, therefore, not be an ideal predictor of proactive coping competence and its changes. Furthermore, women in this cohort may have had less education than men, but may have been able to profit from the socioeconomic status of their husbands, which is reflected in the household income variable. So, when examining the influence of SES it is important to not only assess information on the individual level, but also on the household level (Williams & Collins, 1995).

The present study also examined the potential role of current stressors in the relationship between SES and proactive coping competence, since lower SES is often associated with more current stressors that occupy the mind and direct attention to the present instead of the future, which in turn makes it difficult to set goals and make plans in general, but particularly when future threats arise. We found that current physical and mental health stress did not moderate the relationship, but there was some evidence that physical health stress may play a mediating role between income and proactive coping competence. It might be that people have the skills to set realistic goals and make plans, but may not always be able to use these future-oriented activities as a result of their facing present problems that require attention.

However, both the association between income and physical health stress and between this type of current stressor and proactive coping competence were rather small. A possible explanation may be that the sample in the present study has on average good health and does not yet experience many physical problems. Other types of stressors, such as chronic financial problems, may be a greater source of stress. In addition, the amount of resources that are available for coping with present stressors may have had a moderating effect in the relationship between SES and current health stressors, as was shown by Lachman and Weaver (1998), who found that control beliefs played a moderating role in the association between income and well-being. Future research may consider testing a model in which coping resources play an explicit role.

Furthermore, the relations between SES and proactive coping competence were significant, but small. Aspinwall and Taylor (1997) have suggested that the childhood environment may play an important role in acquiring the skills necessary to engage in effective proactive coping. Overall, none of the factors measured in this study

much explained the variance in proactive coping competence. Future research may focus more on situational factors and personal characteristics, such as dispositional optimism and future temporal orientation, which may influence proactive coping.

A limitation of the present study is its cross-sectional nature. Although the model in which SES and current stressors predict proactive coping competence fitted well, causal interpretation of the data is not possible and the results should be validated in longitudinal studies. It is possible, for example, that proactive coping competence contributes to fewer stressors, since individuals who have proactive coping competence may be able to actively create an environment with fewer obstacles and more opportunities. Conversely, SES may be negatively affected by physical health, with poor health leading to a decrease in income (Williams & Collins, 1995).

Finally, more research is needed to improve and develop instruments and research designs that examine not only proactive coping competence, but also other aspects of proactive coping, such as the behavioral strategies people may employ to offset potential threats. Proactive coping involves various elements of which we have examined only one. We have demonstrated that middle-aged and older adults have proactive coping competence and are able to use several general and important proactive coping skills. Future research should provide more information about the other aspects of proactive coping and the factors that influence them.

Chapter 5

Situational Aspects are More Important in Shaping Proactive Coping Behavior than Individual Characteristics: A Vignette Study among Adults Preparing for Aging

Abstract

It seems likely that proactive coping is an important mechanism for dealing successfully with threats to personal goals, yet little empirical research has been conducted in relation to this concept. The aim of the present study is to examine to what extent proactive coping is influenced by situation-specific features as well as by personal characteristics. Three vignettes, each representing a potential decline in an important resource (health, social relationships, and finance), were presented to 123 adults between 50 and 70 years old. Multilevel analyses show that proactive coping is highly variable within individuals and that three situational factors (type of stressor, appraised threat, and appraised control) affected the employment of proactive coping strategies. Future temporal orientation was identified as a significant, positive predictor of proactive coping, but none of the other personal factors were found to be relevant.

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Submitted for publication.

Introduction

Proactive coping, or attempting to prevent potential stressors emerging, may be an important strategy in successfully preparing for difficult changes and events, which threaten personal goals or general well-being. Aspinwall and Taylor (1997) have argued that proactive coping probably has at least four advantages over reactive coping. Firstly, as proactive coping is directed at avoiding a future stressor or minimizing its effects, feelings of distress may decrease as well. A related potential benefit is that chronic stress is kept under control. Since chronic stress is often the result of an accumulation of stressors, offsetting stressful events at an early stage may prevent chronic stress from developing. Thirdly, it is likely that enough coping resources will be available when the anticipated stressor actually occurs, because such resources have not yet been used up. And finally, many coping options may still be present when proactive coping strategies are employed, as stressors are confronted before they are fully developed.

Proactive coping involves monitoring potential stressors over time in order to determine whether they are developing into real threats to personal goals (Aspinwall, 1997). This is because future stressors are by definition only potentially threatening and, therefore, remain ambiguous to a greater or lesser extent. Aspinwall and Taylor (1997) argue that avoiding the possible stressor is ineffective; disengaging from the problem inhibits the chance of taking proper measures at the right time. Active, problem-focused and support-seeking strategies are necessary to manage a potential stressor and its consequences. Moreover, problem-focused proactive coping is likely to provide the individual with helpful information about the development of the potential goal threat as well as the results of initial coping attempts to alter the course of the goal threat (Aspinwall & Taylor, 1997).

These proactive coping strategies have scarcely been examined empirically. The aim of the present study, therefore, is to examine them in detail and also to examine the factors that contribute to proactive coping. More specifically, we will examine to what extent situational factors and personal characteristics influence the use of proactive coping. Since middle-aged and older adults are likely to deal with many potential stressful changes due to aging, we suggest that this age group is an interesting one in which to examine proactive coping. The term proactive coping covers various strategies (see also Greenglass, 2002; Schwarzer, 2001; Schwarzer & Taubert, 2002) of which we will highlight the efforts people make to prevent potential goal threats, since particularly within our research group individuals have to deal with an increasingly unfavorable scenario in which the balance shifts towards fewer gains and a greater number of threats (e.g., Baltes & Baltes, 1990).

An important question, and one which has been studied in the field of (reactive) coping, is to what extent proactive coping varies across different situations and to what extent it is predicted by personal characteristics. Researchers have found that the range of coping behavior is limited in individuals and that people often have certain coping

preferences (e.g., Endler & Parker, 1990). Previous coping responses are a strong predictor of how an individual will cope with a new situation (Terry, 1994), although this is mainly true when the situation is similar to the one already experienced (Patterson et al., 1990). Although it is likely that there is some stability in proactive coping responses, this remains a rather limited description of the concept.

Research has also yielded results in favor of the transactional perspective originally proposed by Lazarus and Folkman (1984) who stated that the individual and the environment interact in creating coping responses. While personal coping resources do affect coping behavior (e.g., Terry, 1991), coping strategies also vary as a function of situational characteristics (McCrae, 1984; Holahan & Moos, 1987; Mattlin, Wethington & Kessler, 1990; Terry, 1994; Stewart & Schwarzer, 1996; De Ridder & Kerssens, 2003), such as type of stressor, appraised threat and appraised control, and several objective features of the situation. De Ridder & Kerssens (2003) even found that people vary more in their coping responses across situations than they do in relation to other individuals responding to the same situation. Moreover, it has been argued that people who are able to adjust their coping responses to the demands of the situation, that is those who have a certain amount of coping flexibility, may be able to adapt more effectively to stressors (Cheng, 2001).

In order to examine proactive coping in different situations, we conducted a field experiment using vignettes. Research has shown that vignettes are a valid method for studying coping responses to stressful situations so long as certain conditions are met, such as participants' having the opportunity to process the information adequately in a quiet environment without distraction (Stolte, 1994). Furthermore, Krohne and Egloff have proposed that vignettes are an appropriate method for triggering coping responses when (1) the situations described in the vignettes are imaginable, and (2) the vignettes cause a certain amount of threat (De Ridder & Kerssens, 2003). One of our previous studies indeed demonstrated that at least a slight feeling of threat must be experienced, as this focuses attention on the future stressor and encourages engagement in proactive coping (Ouwehand, De Ridder & Bensing, 2001). An advantage of using vignettes is that all individuals have to respond to the same types of stressors, which makes it easier to control the characteristics of the stressor and to compare proactive coping between individuals.

A focus group study of 47 individuals aged between 50 and 70 years demonstrated that being healthy, having good social relationships, and having sufficient financial assets were most important for this age group (Ouwehand et al., 2001). A decline in these resources was experienced as a serious threat to their personal goals. For the purpose of the present study, three vignettes were developed each describing a situation in which a person faces a probable, but uncertain decrease in one of the resources, in accordance with Aspinwall and Taylor's definition about what proactive coping entails.

Several personal variables have been assumed to facilitate proactive coping with potential decreases in resources. A future temporal orientation might be considered as one of the factors positively influencing the proactive coping process, as it may assist in the detection of a future stressor (Aspinwall & Taylor, 1997) and engagement in preventive behavior (Rothspan & Read, 1996). Self-efficacy may be another important proactive coping resource, because previous research has found that people high in self-efficacy have lower stress appraisals (Jerusalem, 1993) and use more problem-focused coping strategies (MacNair & Elliott, 1992). Perceiving potential threats as less stressful encourages an individual to use proactive coping, as people who think that they are at lower risk pay more attention to a future threat (Aspinwall & Brunhart, 1996). The proactive coping process may also be facilitated by a goal orientation, since individuals who reflect on their future plans and who tend to set both short-term and long-term goals may be better able to recognize potential threats to these goals. Finally, it is expected that individuals with a tendency to use proactive coping will be more inclined to employ such strategies when confronted with a potential stressor. Although there is discussion on the question of whether coping styles influence coping behavior and even whether coping styles exists at all (see e.g., Carver & Scheier, 1994; Schwartz, Neale, Marco, Shiffman & Stone, 1999), it is still interesting to examine the possibility that a proactive coping orientation influences actual proactive coping behavior.

Although stable personal factors may also be important, we assume that a potential decline in certain resources more than others is a greater trigger for proactive coping. We hypothesize that proactive coping varies between situations and that several characteristics of the stressor may cause this variability. More specifically, in this study we will examine to what extent type of stressor, appraised threat to personal goals and appraised control over the situation are important predictors of proactive coping. Regarding type of stressor, we predict that potentially decreasing health will provoke more proactive coping than threats to social relationships and financial resources. Health might be considered one of the core resources necessary for well-being and attainment of personal goals and some researchers have argued that it may be difficult for people to accommodate health-related goals (Brandtstädter & Rothermund, 2002). We expect people to be sensitive to even minor threats to their health and to make more efforts to prevent a decline in this resource.

In addition, we hypothesize that a higher appraised threat to personal goals and a higher appraised control over the situation will contribute to proactive coping strategies. As has already been described above, a situation needs to pose a certain amount of threat to personal goals in order for the stressor to be perceived as a problem and for people to be motivated to act. On the contrary, too great a threat will probably lead to disengagement from the potential stressor instead of active proactive coping. Finally, research has shown that when individuals think they can manage or alter a

situation, they cope more successfully (e.g., Aspinwall & Taylor, 1992). The feeling that one has no control over a situation may lead to acceptance of the situation, while higher controllability may lead to more proactive coping.

Method

Participants and Procedure

The present study is a follow-up study of a larger survey-study (N = 397) examining proactive coping employed by normal, healthy middle-aged and older adults. It consisted of 123 persons (63 men and 60 women) aged between 50 and 70 years (M = 61.8; sd = 5.0) who were willing to participate in an interview. Of this smaller sample, 72% were married, 7% were divorced, and 11% were widowed. Regarding educational level, 24% had a college or university degree and 48% had obtained a high school diploma. In relation to employment, 28% of the participants had a paid job, 38% were retired, while 24% reported housekeeping as their main activity. No significant differences were found between the original sample and the present sample with respect to age and gender, although participants in the current study had a slightly higher level of education ($t = 3.0, p = .00$).

Participants were interviewed at the university or at home when there were mobility problems. After an appointment had been made by telephone, they received a short questionnaire which they filled in at home and which they brought to the interview. The questionnaire assessed several personal factors. During the interview, the participants were asked to respond to three vignettes in order to measure proactive coping in different situations.

Situational Characteristics

Three vignettes were developed by the authors and slightly modified following a pilot study. Each vignette described a potential loss of one of the following resources: health (situation 1), social relationships (situation 2), and personal finance (situation 3). A full description of vignettes can be found in the Appendix A. Care was taken to ensure that the three vignettes were sufficiently imaginable and that they involved a certain amount of threat. In addition, the participants were interviewed in a quiet room in order to allow them to concentrate and process the information effectively (Stolte, 1994).

Besides manipulating *Type of Stressor*, two other situational features were assessed in order to examine whether they predict proactive coping. First, *Appraised Threat to Personal Goals* was measured by asking participants in relation to each vignette "To what extent would this situation threaten the things you would like to do or achieve?" (4-point scale ranging from 1 = *not at all* to 4 = *very much*). Second, *Appraised Control over Situation* was measured with the question "Do you feel that you would be able to influence this situation?". Again, participants answered on a four-point scale and for each vignette separately.

Proactive Coping

Proactive coping consists of various elements, such as planning, seeking instrumental support and actively preventing a potential stressor instead of denying the problem or disengaging from it. These elements were measured with items from four COPE scales (Carver, Scheier & Weintraub, 1989) written on small cards. As the COPE was originally developed to measure coping reactions to a stressful event that has already taken place, some of the items were slightly changed in order to make them more appropriate for a proactive coping context. For example, the item “I take direct action to get around the problem” of the subscale Active Coping was altered into “I take direct action to prevent this potential problem”. After participants had been asked to read the vignettes carefully and to imagine the situation described as well as they could, they indicated to what extent they would respond to the potential stressor as written on the card (4-point Likert scale, ranging from *certainly no* to *certainly yes*). Due to tiredness, two participants did not complete questions related to the third vignette.

We included the following four subscales that each consisted of four items. Active Coping (Cronbach’s alphas are .71, .80 and .73 for Vignette 1, 2 and 3 respectively) involves actions to prevent the stressor or its consequences occurring while Planning (α ’s are .74, .83 and .87) represents thinking about how to handle the stressor (Carver et al., 1989). Suppression of Competing Activities (α ’s are .65, .74 and .73) means putting other activities aside in order to concentrate on the problem and the fourth subscale, Seeking Social Support for Instrumental Reasons (α ’s are .84, .89 and .91) involves seeking information or advice (Carver et al., 1989).

Personal Factors

Besides age, gender and education, four other personal characteristics, namely proactive coping orientation, self-efficacy, future temporal orientation, and goal orientation were included in this study. *Proactive Coping Orientation* was measured with the Preventive Coping Subscale of the Proactive Coping Inventory (Greenglass, Schwarzer & Taubert, 1999), which consisted of ten items on a four-point Likert scale ranging from 1 = *not at all applicable to me* to 4 = *completely applicable to me*. Sample items include “I prepare for adverse events” and “Before disaster strikes I am well-prepared for its consequences”. We excluded the item “I develop my job skills to protect myself against unemployment”, since we considered it to be less relevant for the people in our sample. Cronbach’s alpha was .84. Despite its label, it has been suggested that this scale measures the tendency to use proactive coping (Ouweland, De Ridder & Bensing, under review). Its items represent a fairly stable characteristic of generally anticipating potential stressors.

We used the Generalized Self-Efficacy Scale (Schwarzer, 1992) to assess *Self-Efficacy*, which may be defined as the belief that one is capable of coping with difficulties and that one’s own actions are responsible for success. The scale consists of

ten items on a four-point Likert Scale ($\alpha = .89$). Sample items are “I can usually handle whatever comes my way” and “I can always manage to solve difficult problems if I try hard enough”.

In addition, *Future Temporal Orientation* was measured with the Future subscale ($\alpha = .61$) of the Temporal Orientation Scale (Jones, Banicky, Lasane & Pomare, 1999). Participants had to answer 5 items on a 5-point Likert scale (ranging from 1 = *strongly disagree* to 5 = *strongly agree*). Sample items are “I take care of what needs to be done before having fun” and “I am able to resist temptation when there is work to be done”. A high score means that an individual is a planner, is concerned with the future, and is able to imagine future possibilities.

Finally, participants completed the Goal Orientation Scale ($\alpha = .73$) developed by Malouff and colleagues (1990) in order to assess *Goal Orientation*, that is the degree to which an individual has a tendency to set short-term as well as long-term goals and make plans to achieve these goals. It consisted of 15 items on a 5-point Likert scale (ranging from 1 = *strongly disagree* to 5 = *strongly agree*) and sample items include “I am goal-oriented” and “I spend a substantial amount of time planning how to reach my goals”.

Statistical Analyses

In order to examine to what extent situational characteristics and personal factors predicted the variance in proactive coping, multilevel analysis was conducted using MLwiN 1.1 (Rasbash et al., 2002), since multilevel analysis is recommended for nested data (Hox, 2002). Such an analysis takes into account that proactive coping responses to the three situations are correlated within the same person. Moreover, it is able to handle incomplete cases if participants did not respond to all the vignettes (Hox, 2002).

In our study, we had two levels of nesting: situations (level 1) were nested within adults (level 2). We started our analyses with an intercept-only model that divides the variance of proactive coping into two independent components: situational variance and individual variance. This allows for calculating the interclass correlation ρ that, in this study, indicates the proportion of the variance explained by the variance between people. In the second step, the fixed variable *Type of Stressor*, which is a categorical variable, was added. Consequently, dummy coding was used with ‘health’ as the reference category. Next, we included the fixed variables *Appraised Threat* and *Appraised Control* measured at the first level in order to test whether this may further explain the situational variance. In the fourth model, we added the personal factors. A final step in the multilevel analyses was to test whether there were significant random slope variations for the variables assessed at the lowest level.

Variables were centered before they were entered in the multilevel model. Multilevel analyses were done for each proactive coping strategy separately, which

resulted in four analyses. Assumptions of linearity, normality, and homoscedasticity on both levels were checked and were found to be in order. Finally, we used the Snijders & Bosker correction in order to calculate the explained variances at the different levels (see Hox, 2002; Snijders & Bosker, 1994).

Results

Analyses demonstrated that most participants could imagine the situations well (94%, 81% and 94% for health, social relationships and finance respectively). As far as the health vignette was concerned, 70% of the participants indicated that they had already experienced the same (44%) or a comparable (26%) situation. Fewer persons had encountered a similar or comparable situation to the ones described in the social vignette (51%) or the financial vignette (34%) at the time of interviewing. It is worth noting that the level of proactive coping employed did not depend on whether the participants had already experienced the same or a comparable situation or whether they could imagine the situation well.

Table 1. Proactive Coping Strategies and Proactive Coping Resources (N = 123) (Mean (sd))

	Range	Total	Vignet 1	Vignet 2	Vignet 3
Active Coping **	4 - 16	-	12.3 (2.7)	11.3 (3.3)	11.7 (3.0)
Planning **	4 - 16	-	11.8 (3.0)	10.9 (3.4)	11.8 (3.4)
Suppression of Competing Activities **	4 - 16	-	9.5 (2.8)	8.9 (3.1)	10.1 (3.0)
Seeking Instrumental Support **	4 - 16	-	11.2 (3.7)	9.6 (3.9)	9.9 (4.0)
Appraised Threat to Goals *	1 - 4	-	2.2 (1.2)	1.8 (1.1)	2.2 (1.2)
Appraised Control over Situation **	1 - 4	-	2.7 (1.2)	3.1 (1.2)	2.3 (1.3)
Proactive Coping Orientation	9 - 36	24.4 (5.3)	-	-	-
Self-efficacy	10 - 40	33.2 (4.3)	-	-	-
Future Temporal Orientation	5 - 25	17.0 (3.2)	-	-	-
Goal Orientation	14 - 60	39.6 (7.3)	-	-	-

Note. GLM Repeated Measures analysis showed significant differences between the three vignettes: * $p < .05$ and ** $p < .01$

Table 1 shows basic results for the four proactive coping strategies used in the three situations as well as the proactive coping resources that may differ from individual to individual. Firstly, it is clear that on average all situations were appraised as a medium threat to personal goals, but that a potential decrease in social contacts was perceived as least threatening. In addition, this situation was also regarded as most controllable. Secondly, active coping and planning were the strategies employed most often whereas suppression of competing activities and seeking social support for instrumental reasons were employed the least. Moreover, proactive coping efforts were

most often undertaken in the health situation. GLM repeated measures analysis showed that the amount of strategies employed in the three situations differed significantly as well as the degree to which the situations were appraised as threatening and controllable. Finally, with relation to the availability of proactive coping resources, Table 1 demonstrates that the participants reported high self-efficacy and moderate future temporal orientation, proactive coping orientation and goal orientation.

In order to examine to what extent situational and personal characteristics predict proactive coping, we first separated the situational variance from the individual variance by testing the intercept-only model. Intraclass correlations can be calculated by dividing the individual variance by the total variance ($\rho = \sigma^2_{between} / \sigma^2_{between} + \sigma^2_{within}$). This resulted in the following intraclass correlations: .34 (active coping), .40 (planning), .41 (suppression of competing activities), and .48 (seeking instrumental support). This means that the variance of proactive coping across situations within the same individual is slightly greater than the variance between people, in other words, proactive coping varies more within the same individual than from person to person. For active coping situational factors are most relevant, whereas for seeking instrumental support personal factors are most relevant.

The next step was to examine which situational and personal features may explain the different variances. Table 2 shows that type of stressor is a significant predictor of proactive coping. As expected, a potential decline in health evokes more proactive coping efforts than a possible decrease in social contacts or financial resources, with the exception of planning and suppression of competing activities. When confronted with a potential financial stressor, people do not plan less than when their health might be at risk. Nevertheless, the difference in deviance between the intercept-only model and the model including both dummies was significant (Δ deviance = 11.97, $p < .01$). In addition, a potential financial stressor leads to more suppression of competing activities than a potential health stressor while a potential social stressor does not contribute to suppression. However, the difference in deviance was again significant (Δ deviance = 12.77, $p < .01$). Thus, it was concluded that for all four proactive coping strategies type of stressor is a relevant predictor. Furthermore, the results showed that greater appraised threat to personal goals and greater appraised control over the situation lead to increased use of all four proactive coping strategies.

With respect to the role of personal factors, it appeared that sociodemographic variables, such as age, gender and education, did not contribute significantly to proactive coping although education showed a positive trend for support seeking. Proactive coping orientation and self-efficacy proved not to be relevant. With respect to the remaining personal variables, mixed results were found. Having a future temporal orientation was important for all strategies, with the exception of instrumental support seeking whereas being goal-oriented only predicted planning.

Table 2. Estimates and Standard Errors (SE) of the Four Proactive Coping Strategies

	Active Coping			Planning			Suppression			Support Seeking		
	Estimate	SE	p	Estimate	SE	p	Estimate	SE	p	Estimate	SE	p
Situational Factors												
Social (vs. ref)	-1.03	.31	.00	-.98	.32	.00	-.47	.29	.10	-1.55	.35	.00
Finance (vs. ref)	-.65	.31	.03	-.02	.32	.97	.59	.29	.04	-1.22	.35	.00
Appraised Threat	.38	.12	.00	.37	.13	.00	.45	.12	.00	.40	.15	.01
Appraised Control	.53	.11	.00	.47	.12	.00	.25	.11	.02	.33	.14	.01
Personal Factors												
Gender ^a	.21	.41	.61	.64	.45	.15	.45	.45	.32	-.38	.61	.53
Age	.03	.04	.45	.02	.04	.62	.06	.04	.13	.00	.06	.99
Education	.02	.09	.82	.14	.10	.16	.16	.10	.11	.25	.14	.07
Proactive Orientation	.03	.04	.45	.02	.05	.69	-.02	.05	.69	.05	.06	.40
Self-efficacy	-.04	.05	.42	-.04	.05	.42	-.00	.05	.99	-.07	.07	.32
Future Orientation	.21	.07	.00	.21	.07	.00	.16	.07	.02	.09	.10	.37
Goal Orientation	.04	.03	.18	.06	.03	.05	.02	.03	.51	.04	.04	.32
Random Part												
σ^2_{u1} Social (vs. ref)	10.65	1.45	.00	11.45	1.57	.00	6.35	1.06	.00	12.64	1.78	.00
σ^2_{u2} Finance (vs. ref)	8.24	1.24	.00	12.01	1.66	.00	9.05	1.49	.00	15.85	2.19	.00
R² - Situation	11%			10%			8%			8%		
R² - Person	28%			31%			14%			11%		

Note. ^a Gender: 1 = female, 2 = male

Table 2 shows that the four fixed situational factors explain 8-11% of the variance at the situational level while the personal characteristics, namely socioeconomic variables, proactive coping resources as well proactive coping orientation, explain more variance (11-31%) at the personal level.

Finally, significant random slope variation was found for the variable type of stressor, but not for appraised threat and appraised control. This means that the regression slope for type of stressor varies from person to person, in other words, whether a situation provokes more proactive coping than another situation depends on the individual. Interestingly, the covariances between the slopes showed that when an individual reports high proactive coping for the health vignette, it is likely that he or she will report less proactive coping for the social vignette or financial vignette. However, when proactive coping was already low in the health situation, it remained low in the other two situations.

Discussion

The present study has examined to what extent situational factors and personal characteristics contributed to proactive coping, which is a concept that has barely been researched empirically, but which is nonetheless promising. We have found that proactive coping efforts vary greatly within the same individual across different situations. Proactive coping variability across situations is even greater than the variability between individuals. At least three factors, namely type of stressor and appraisals of threat and control, explain variance on the situational level. The influence of subjective appraisals is a well-established research result and often regarded as the most important factor in shaping coping responses (Lazarus & Folkman, 1984). When a situation is appraised as a higher threat to personal goals and as more controllable, an individual employs more proactive coping efforts. In addition, we showed that the more objective feature 'type of stressor' shapes proactive coping. As predicted, a potential health threat provokes more proactive coping than a future threat to social relationships and financial resources, with the exception of suppression of competing activities. This strategy is more often employed when confronted with a potential decline in financial resources.

The results also demonstrated that the relationship between type of stressor and proactive coping varies from individual to individual; for example, some people use more proactive coping in a health situation than in a financial situation whereas for other people the pattern is just the opposite. It is interesting that we found this effect while researching proactive coping in only three different situations, since it is generally recommended that at least 100 groups should be measured at the second level (in this study: adults) with each at least 10 units (in this study: vignettes) (Hox, 2002). It is probable that the effect will be even stronger when presenting more situations to individuals. Nevertheless, future research may concentrate on examining proactive

coping in a larger sample measuring responses to more situations in order to gain more statistical power with which to study which personal characteristics contribute to the random slope variation. It would be interesting to vary these situations in relation to factors other than type of stressor, such as by varying the degree of ambiguity of the situation and the time until the potential stressor is likely to strike.

The interindividual differences in proactive coping are quite well explained by the combination of personal factors we included in this study. As was hypothesized, having a future temporal orientation has a positive impact on all four proactive coping strategies except on social support seeking. However, none of the other factors appeared to have a major influence. A possible explanation may be that the middle-aged and older adults in our study had on average a lot of coping resources, which may have made them a rather homogeneous sample. Other personal features not included in this study may also explain additional variance. Social support seeking, which was not affected by any of the individual characteristics, may depend on factors such as differences in network size and need for social contacts.

The finding that dispositional proactive coping orientation did not affect proactive coping is consistent with some of the literature (Carver & Scheier, 1994; Schwartz et al., 1999). On the basis of their study, Schwartz and colleagues (1999) suggested that a self-report coping questionnaire might be an inaccurate assessment of the dispositional component of coping.

A potential limitation of this study may be its design. The potential artificiality of vignettes may weaken the external validity of the results (De Ridder & Kerssens, 2003). However, results showed that most people were familiar with the situations described in the vignettes. Moreover, a certain amount of people reported that they had already experienced the same or a comparable situation, particularly in the case of the health vignette. This may have led to even more accurate responses of proactive coping, because they could imagine the situation well.

To sum up, examining both the situational and individual influences provides a more complete picture of proactive coping behavior. Using vignettes may be a useful way to research such factors. However, measuring responses to potentially stressful situations remains an interesting challenge for future research. Several researchers have suggested that problems arise when assessing (proactive) coping by checklist with prepared response items. It could be argued that the extent to which individuals are able to correctly report their coping efforts is questionable (Schwartz et al., 1999), whilst other problems, such as socially desirable answering, may also bias the data (Coyne & Gottlieb, 1996). Another important point is that proactive coping is regarded as a process that incorporates many different elements and that these may not be captured in one single measurement, particularly not using a checklist. Future research might consider examining different aspects of this process one at a time while using other instruments than self-report measures.

Acknowledgements

The authors would like to thank Bianca Hesdal, Klaske van Loon, Anoeke Spitsbaard and Marie-Janne van Toorn for assisting in data collection.

Chapter 6

The Characteristics of a Potential Goal Threat Predict Attention, Planning and Information-Seeking among Middle-Aged and Older Adults

Abstract

The present experiment examines whether features of a potential goal threat affect attention, planning and information-seeking in middle-aged and older adults (N = 124). We manipulated two characteristics of a potential decline in health: the amount of control people have over preventing the threat (no control versus control) and the amount of time left before the threat would occur (short term versus long term). As expected, a shorter period of time left resulted in more attention being paid to threat signals and more information being sought about how to prevent the health threat. Control did not influence attention and information-seeking behavior. Although no manipulation effects were found for planning, an additional, exploratory analysis showed an interesting interaction effect of time and control for individuals with a health-related goal; people who were confronted with an uncontrollable threat in the nearby future spent more time on planning than people who had control whereas the opposite relation was found for people who faced a distant future stressor. Moreover, control predicted whether planning is likely to result in action; more control leads to a higher motivation to execute plans.

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Submitted for publication.

Introduction

Since pursuing and achieving personal goals influence subjective well-being (Brunstein, 1993; Diener, Suh, Lucas, & Smith, 1999; Rapkin & Fischer, 1992.), successfully managing goal threats is an essential part of life. With aging, the balance between gains and losses becomes less favorable (e.g., Baltes & Baltes, 1990), which poses a threat to self-regulation processes with respect to goals. Increasing losses may hamper self-regulation, because dealing with losses consumes resources that are no longer available for the pursuit and attainment of personal goals. Moreover, losses may lead to a decrease in resources themselves. A potentially important strategy for postponing a decline in resources, which are important for goal achievement, is to handle such losses at an early stage and make efforts to prevent them or their consequences, in other words, to engage in proactive coping (Aspinwall, 1997; Aspinwall & Taylor, 1997).

Health is one of the most important resources for self-regulation. Preserving good health is often not an ultimate goal in itself, but a prerequisite to maintaining numerous different types of personal goals that contribute to life satisfaction. However, due to the aging process, many people are confronted with a decrease in health. Proactive coping with this probable stressor in an early stage of its development may help to conserve this important resource and may delay disengagement from valuable goals, which might become necessary as a result of a decline in health.

Effective proactive coping starts with recognizing future changes as potential threats that require action. In order to be able to detect potential stressors, people need to screen their environment for important information and direct their attention to warning cues that announce the possible emergence of a problem (Aspinwall, 1997; Aspinwall & Taylor, 1997). Once a future event has been detected and appraised as a problem, several activities may be employed which are aimed at attempting to prevent the threat or to offset its consequences. Paying attention to a potential stressor is not enough for effective proactive coping; attention has to lead to action in order to prevent a future problem. Aspinwall and Taylor (1997) suggest that proactive coping incorporates active, problem tackling strategies and consists of cognitive activities, such as thinking about the appropriate measures for handling a specific potential stressor and making plans to undertake these efforts, as well as behavioral actions, such as seeking more information about the problem and the different options for dealing with it effectively.

The aim of the present experimental study is to examine to what extent features of a potential goal threat influence proactive coping in middle-aged and older adults. More specifically, we will examine to what extent the controllability of a potential loss in health and the amount of time left until this stressor is likely to manifest itself play a role in directing people's attention to signals representing the potential threat, seeking more information about how to prevent or handle the potential stressor, and making plans for future.

We expect that whether people employ proactive coping will largely depend on the characteristics of a potential goal threat. One of the key aspects may be the amount of control an individual has over preventing a potential stressor. Many researchers have argued that control is essential for successful adjustment to stressors throughout life (e.g., Schulz & Heckhausen, 1996; Shapiro, Schwartz & Astin, 1996; Taylor, 1983). Moreover, research has demonstrated that people are more sensitive to danger signals when they have control over a stressor's negative consequences and see a possibility of avoiding the danger (Brandtstädter, Voss & Rothermund, 2004). Sensitivity to negative stimuli is decreased when opportunities for preventing a stressful event are absent (Rothermund, Brandtstädter, Meiniger & Anton, 2002). Furthermore, people who perceive high control over a situation will seek information, undertake preventive efforts, and persist in the face of failures (Skinner, 1996). In line with these findings, we hypothesize that people who have more control over a potential decline in health will pay more attention to stimuli that represent this stressor and will be more involved in planning and information-seeking activities in order to prevent the potential stressor.

Another valuable factor might be time. Carstensen and colleagues have argued that the perception of time is a relevant and unique concept (e.g., Carstensen, Isaacowitz & Charles, 1999), which may have important implications for motivational and attentional processes (see e.g., Fung & Carstensen, 2004; Fung, Carstensen & Lutz, 1999). In the present experiment, we are particularly interested in whether the amount of time left until a potential stressor is likely to fully reveal itself serves as an action trigger. Potential stressors that are likely to manifest themselves in the near future may be perceived as more threatening and will therefore attract more attention than stressors that are not likely to occur for a long time. When time is constrained, the negative aspects of cues carry more weight (Sharma & McKenna, 2001). As people have to sense at least a slight feeling of threat in order to start engaging in proactive coping (Ouweland, De Ridder & Bensing, 2001), a stressor in the near future may trigger more active strategies to handle the threat than a distant future stressor.

In addition, it is possible that long-term stressors are perceived in a more abstract way, which may decrease the need to act immediately. Researchers have proposed that distant future events are interpreted on a higher level, i.e. based on more central and abstract facets of the event, than events in the nearer future (Liberman & Trope, 1998; Trope & Liberman, 2000). As this results in a more simple and coherent picture of the future stressor (Trope & Liberman, 2000), it may be more difficult for people to obtain a realistic and clear view of a distant future stressor and its likely development. Contrary to the actions necessary for stressors in the near future, actions associated with distant future stressors are mainly considered on a "why"-level instead of a "how"-level (Trope & Liberman, 2000). For example, the actions associated with the prevention of a potential decline in health may be indicated as "wanting to continue doing what I like best" (why) when the decrease in health is not likely to occur for a long

time, while when it concerns a more imminent threat the actions may be expressed as “exercising more and eating more healthy food” (how). Not thinking in terms of concrete actions may cause less effective or no planning activities and behavioral efforts in order to attempt to prevent a distant potential stressor.

To sum up, we hypothesize that controllability and time until the manifestation of a stressor will affect proactive coping; we expect that more control over the potential stressor’s development as well as less time until it is likely to fully reveal itself will result in more attention being paid towards danger cues and the greatest amount of time spend on planning and seeking information. Furthermore, we will examine whether an interaction effect exists; we expect that the combination of less time and more control will lead to more proactive coping.

In relation to attention, we use the emotional Stroop task, which measures attentional bias towards threat related stimuli. Those individuals who exhibit a high level of preoccupation with a particular problem have greater difficulty in ignoring signals associated with their concern. This effect has been documented in a wide range of populations, including people with different types of psychopathology (for a review, see Williams, Mathews & MacLeod, 1996), and sexual offenders (Smith & Waterman, 2004). The effect was also demonstrated in ‘normal’ individuals who do not suffer from clinical anxiety or other psychopathology, but who are nevertheless high in trait anxiety (e.g., Mogg et al., 2000), or engage in certain behavior, such as smoking, and are therefore more occupied with cues related to this behavior (Waters & Feyerabend, 2000; Waters et al., 2003). Furthermore, people who experience temporal states of anxiety show a greater attention bias. For example, emotional Stroop effects were found in women who were waiting for colposcopy investigation in order to determine whether they had cervical pathology (MacLeod & Hagan, 1992), and in people who were experimentally brought into a state of high stress (Mogg, Mathews, Bird & Macgregor-Morris, 1990) or experienced temporary anxiety due to upcoming exams (Rutherford, MacLeod & Campbell, 2004).

There is some discussion, however, as to whether people who momentarily experience elevated levels of stress or anxiety orient their attention to negative information in particular (negative selectivity) or to emotional information in general (emotional selectivity). Several studies have supported the latter idea (e.g., Dalgleish, 1995; Mogg & Marden, 1990; Riemann & McNally, 1995) and recent research has shown that people who experienced more anxiety than normal showed a delayed response to both negative and positive stimuli in comparison with neutral stimuli, regardless of their level of trait anxiety (Rutherford, MacLeod & Campbell, 2004). Interestingly, Rothermund, Wentura and Bak (2001) have suggested that orientation towards signals may depend on the outcome focus or goals people have. Individuals who wish to achieve positive outcomes are more sensitive to cues that indicate opportunities and chances whereas individuals whose goal is to avoid or prevent certain

outcomes are more receptive to negative cues. In order to examine whether individuals are not only threatened by the thought of a potential decline in health, but also challenged, we included positive stimuli in the emotional Stroop task.

With respect to information-seeking, we present information by computer that is relevant to the prevention of a potential decline in health. Reading time is measured and regarded as the willingness to learn more about the potential goal threat and the ways to prevent it. Aspinwall and Taylor (1997) stated that proactive coping involves both behavioral activities and cognitive strategies of which planning is an important one. Planning may include thinking about the development and consequences of a potential goal threat and the problem-solving strategies one has to employ in order to offset the future threat. We assess the amount of time spent on planning strategies to achieve personal goals threatened by a potential decline in health. The time spent on this activity is considered as an indication that an individual is prepared to engage in self-regulation processes and to confront the potential threat and make plans to prevent it.

Several variables are expected to influence the relationship between the potential threat characteristics and proactive coping. First, some individuals may be more occupied with health or aging issues than others. Individuals who perceive their health as poor or are more anxious about aging may be more occupied with a probable decline in health and, therefore, they may naturally show more attention for cues related to their concern. In addition, trait anxiety is an important personal characteristic, because many studies have shown that clinically anxious individuals have an attentional bias towards stimuli related to their anxiety (for an overview, see Williams, Mathews & MacLeod, 1996), but also non-clinical people with high trait anxiety show this effect (e.g., MacLeod & Hagan, 1992; Mogg et al., 2000). Thirdly, researchers have demonstrated that dispositional optimism, in other words, people who hold positive beliefs about the future (Scheier, Carver & Bridges, 1994) pay more attention to threatening information, especially if the information is relevant to their goals (Aspinwall & Brunhart, 1996; Aspinwall & Brunhart, 2000). Furthermore, it has been suggested that having a future temporal orientation, i.e. being goal-directed and concerned with the future (Jones, Banicky, Pomare & Lasane, 1999), is an important resource for proactive coping. It may facilitate the process of directing one's attention to the future stressor's signals and recognizing it as a potential threat (Aspinwall & Taylor, 1997) as well as engaging in activities of a preventive character (Rothspan & Read, 1996). The personal factors described above are included in this study in order to examine whether time and control still have an effect on proactive coping after controlling for these variables.

Method

Sample

Participants were recruited via Dutch activity centers where people aged 50 years and older can take a course, such as computing, or engage in other activities,

such as yoga or playing cards games. Participants were also recruited from outside these centers in order to reduce selection bias. The inclusion-criteria were that the adults had to be between 50 and 70 years old, that they were fluent in Dutch, and that they had little or no difficulty recognizing colors. This resulted in a sample of 124 participants with a mean age of 59.3 (sd = 5.5) including 58 men (47%) and 66 women (53%). With respect to marital status, 82% were married, 9% were divorced, 7% were widowed, and the remaining 2% had never been married. Nearly half of the participants had a paid job (n = 61).

Participants volunteered without receiving any reimbursement. They had the choice of taking part in the experiment at home, at the university or at the activity centre. On average, the duration of the experiment was 30 minutes.

Procedure

Participants were told that the aim of the research was to examine middle-aged and older adults' plans for the future. They were seated in front of a computer screen and asked to respond to the questions that appeared on the screen. The experiment started with assessing socio-demographic variables, such as age, gender, marital status and educational level, followed by the control variables that will be described later. Next, participants were asked to define their personal goals. They were asked to take some time to think about their goals for the future and to answer the question "What would you like or hope to achieve, maintain or resolve in the following years?". They were asked to write down their goals on a piece of paper with a minimum of one goal and a maximum of ten goals, as the pilot study indicated that some participants between 50 and 70 years old have difficulties typing. Nevertheless, they were able to use the keyboard for all other parts of the experiment.

Next, the participants were given some information about goal attainment, which was the starting point of the manipulation. At this stage, every participant was given the same information:

Sometimes you will succeed and sometimes you won't succeed in achieving your goals. Quite recently, researchers examined the circumstances under which people have difficulties achieving their goals. It appears that older people with poor health find this rather difficult.

This information was followed by a manipulation of a potential goal threat, which differed in the four experimental groups that participants were randomly assigned to. The experiment ended with the measurement of the dependent variables, namely attentional bias, planning and seeking information.

Manipulation of Goal Threat

A potential decline in health was chosen as a threat to personal goals. It was manipulated in relation to two features: time until manifestation and control over the potential goal threat. Both characteristics had two possible values: short-term versus long-term and no control versus control, respectively. This means that the experiment employed a two-by-two-design. The manipulation consisted of a written statement about health and the chance of continuing to achieve personal goals in old age. With respect to Time, participants were either informed that many older people suffer from poor health at an advanced age or that they already suffer from it relatively early on in old age. In line with Aspinwall and Taylor's (1997) proposition that proactive coping is directed at probable stressors which will occur at an unspecified time or may not take place at all, the exact onset of a decline in health was left open to the participants' own interpretation. As such, proactive coping differs from anticipatory coping, which implies preparing for future events that are certain to occur (Aspinwall & Taylor, 1997). Control was manipulated by the statement that in general either one's genes or one's own behavior is responsible for a decrease in health. A full description of the four conditions can be found in Appendix B.

Emotional Stroop Task

In order to measure attentional bias a version of the *Emotional Stroop Task* was developed using E-prime software 1.1 (Schneider, Eschman & Zuccolotto, 2002). Participants were asked to indicate as quickly and as accurately as possible in which color the stimulus words were written while ignoring the meaning of the word, by pressing one of the four colored buttons (red, yellow, green and blue) on a keyboard. In this study, the emotional Stroop task has the following sequence: (1) practice block, (2) neutral word block, (3) negative word block, (4) 20-s break, (5) neutral word block, and (6) positive word block.

First of all, the participants responded to ten practice stimuli, which were presented four times, once in each of the four colors. These stimuli, which included repeated letter strings written in capital syllables (e.g., XXXX and AAA), were presented randomly until the participant pressed a button. If the participant did not respond, the stimulus was removed after 3500ms. Each response was followed by written feedback (Correct!, Wrong! or Too late!) presented for 1000ms on the screen. After a delay of 400ms the next stimulus was presented.

The practice trial was followed by two experimental trials, which were separated by a 20 seconds' break. Following Waters et al. (2003) in using the emotional Stroop task in a non-clinical population, we decided to employ a blocked design with a fixed order of neutral stimuli preceding valenced stimuli (either negative or positive) in order to avoid carry-over effects as much as possible (see also McKenna & Sharma, 2004; Rohsenow & Niaura, 1999; Waters, Sayette & Wertz, 2003).

Negative stimuli included words that reflect the negative side of aging with respect to declining health and an increasing number of complaints. On the other hand, positive stimuli were words that referred to positive aspects of aging, such as freedom and wisdom, as well as successful aging with respect to health. Neutral stimuli were matched with the negative or positive stimuli for word length and frequency of use in the Dutch language. Each word was written in capital syllables and was presented four times, once in each of the four colors. They were presented randomly and care was taken to ensure that the same stimulus and the same color did not appear in two subsequent trials. The response was not followed by feedback and after a delay of 500ms the next stimulus was presented. An overview of the stimuli used in this emotional Stroop task can be found in Appendix C.

Reaction times (RT) in trials with incorrect responses were ignored while calculating the emotional Stroop effects. In order to reduce the impact of outliers, several measures were taken. Firstly, RTs less than 100ms were discarded. In addition, RTs 2.5 standard deviations from the participant's mean score were removed. A difference score was computed between the mean RTs over all the words of the first neutral block and the mean RTs over all the negative words. A same difference score was determined between the average RTs over all the positive words and the mean RTs over all their matched neutral words. Besides these two scores, which are termed standard emotional Stroop effects, acute emotional Stroop effects were calculated by subtracting the mean RTs over all the neutral words from the mean RTs over the valenced words (either negative or positive) of the first subblock (trials 1 - 10). The reason for determining these acute effects is that the use of conscious processes to reduce distraction may be minimal during this stage and, therefore, the emotional Stroop effect may be maximal (Waters & Feyerabend, 2000; Waters et al., 2003). The standard emotional Stroop effects and the acute emotional Stroop effects correlated highly: .80 for the negative stimuli and .72 for the positive stimuli.

Reliabilities in the four stimuli blocks were determined by computing mean scores on even trials and odd trials for each participant, correlating these means, and applying the Spearman-Brown formula to assess the split-half reliability (Waters et al., 2003). Reliabilities were high: $r = .94$ for the first neutral block, $r = .94$ for the negative block, $r = .85$ for its first subblock, $r = .95$ for the second neutral block, $r = .93$ for the positive block, and $r = .87$ for its first subblock.

Planning and Seeking Information

As well as attention, two variables indicating proactive coping efforts were assessed. After finishing the Stroop task, participants were asked to write down the strategies they will undertake in order to achieve their goals that might be threatened by a possible decline in health. They were allowed to take as much time as they needed and to make their plans as detailed as they wanted. The amount of time employed to

write down these plans was used as a dependent variable indicating *Planning*. In addition, participants evaluated their plans in relation to three aspects using a 10-point scale: how satisfied they were with their plans, how much confidence they had in their plans, and how motivated they were to execute their plans.

Finally, participants were given the opportunity to read as much information as they wished about aging and health. We adapted informative material available on the internet and presented it on the computer screen. Material included accurate information about nutrition and specific needs for older people, exercise at older age, and ventilation of the home. Participants were able to read any information they desired, but they were allowed to ignore it as well. *Information-Seeking* was indicated by the time spent on reading.

Time spent on planning and seeking information was recorded by the computer. Previous research has shown that time is a robust instrument for measuring planning and readiness to confront possible failure to achieve goals (De Ridder, Kuijer & Ouweland, in preparation) as well as reading information (Aspinwall & Brunhart, 1996). Time spent on these two activities appeared variable enough to be influenced by independent variables despite potential individual differences in writing and reading rate.

Control Variables

In addition to the background variables age, gender and educational level, one health variable and four trait variables were assessed, because they may play a confounding role. Firstly, *Subjective Health* was assessed with the general health perception subscale of the RAND-36 (for a translation in Dutch, see Van der Zee & Sanderman, 1993). This subscale ($\alpha = .64$) consisted of 5 items on a 5-point Likert scale. *Trait Anxiety* was measured with a Dutch translation of the trait version of the State Trait Anxiety Inventory (STAI; Spielberger, Gorsuch & Lushene, 1970; Van der Ploeg, Defares & Spielberger, 1979) which is a 20-item scale ($\alpha = .89$) using a 4-point Likert scale for responding (ranging from 1 = *almost never* to 4 = *almost always*). The Aging Anxiety Scale (Lynch, 2000; $\alpha = .74$) was used to assess *Aging Anxiety*. This scale consisted of seven items on a 5-point Likert scale and included items, such as "The older I become, the more anxious I am about the future" and "I worry that people will have to make decisions for me when I am older". A higher score indicates that an individual is more occupied with aging and has more concerns or fears about getting older. Furthermore, *Dispositional Optimism* was measured with the Revised Life Orientation Test (LOT-R; $\alpha = .73$) developed by Scheier, Carver and Bridges (1994). Finally, in order to assess *Future Temporal Orientation* the Future Subscale ($\alpha = .63$) of the Temporal Orientation Scale (Jones, Banicky, Lasane & Pomare, 1999) was used, which consisted of five items measured on a 5-point Likert scale ranging from 1 = *completely disagree* to 5 = *completely agree*. Sample items are "When I want to get

something done, I make step by step plans and think about how to complete each step” and “I am able to resist temptation when there is work to be done”. People with a future temporal orientation are goal-directed, concerned with the future, and have a tendency to plan.

Statistical Analyses

Two two-way multivariate analyses of variance using SPSS 11.5 tested the main effects as well as the interaction effect of time until manifestation (long-term vs. short-term) and controllability (control vs. no control) on attention to negative stimuli and attention to positive stimuli on the one hand, and on planning and seeking information on the other hand. Control variables that associated significantly with one or more of the dependent variables (see Table 1) were included in the analyses as covariates. Covariates were tested for the assumption of linearity with the dependent variables. Assumptions of normality were tested within each experimental group for each dependent variable separately and outliers were removed.

Results

Table 2 shows some characteristics of the total sample as well as the experimental groups. Moreover, it displays the mean scores on the subjective health measure and the four trait factors. No differences were found between the four experimental groups ($n_1 = n_2 = n_3 = n_4 = 31$) with respect to age ($p = .54$) and educational level ($p = .59$). With respect to gender, a significant difference was found ($\chi^2 = 8.4$, $df = 3$, $p = .04$). Although the long-term/no-control group (LTNC) and the long-term/control group (LTC) included nearly as many men as women, the short-term/no-control group (STNC) had twice as many men as women while this proportion was the opposite in the short-term/control group (STC). Therefore, gender was included in all analyses as a control variable.

No significant differences were found between the four experimental groups with regard to subjective health and the four personal characteristics (range p 's: .34 - .79). On average, participants were low on trait anxiety, they experienced low to moderate aging anxiety and they rated their health as moderate. In addition, they had moderate to high scores on the two proactive coping resources, i.e. future temporal orientation and dispositional optimism.

Table 1. Zero-Order Correlations between the Variables in This Study (N = 124)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 ASE-n	-													
2 ASE-p	.11	-												
3 Planning	-.15	.06	-											
4 Seeking Info	-.01	-.06	.25**	-										
5 Satisfaction with plans	-.02	.03	.06	-.01	-									
6 Confidence plans	-.07	.03	-.05	.08	.60**	-								
7 Motivation for plans	.05	.05	.02	-.02	.52**	.64**	-							
8 Age	-.03	-.12	.06	.27**	.02	-.13	-.18	-						
9 Gender ¹	.00	.04	.13	.11	-.07	.09	.03	-.09	-					
10 Education	-.06	-.05	-.08	-.35**	.17	.03	.12	-.12	-.28**	-				
11 Subjective Health	-.11	-.11	-.04	.01	.12	.12	.18	-.27**	-.09	.22*	-			
12 Future Orientation	-.06	.09	-.09	.03	.16	.11	.19*	.11	-.24**	.21*	.00	-		
13 Optimism	-.00	-.02	-.02	.03	.31**	.31**	.43**	-.16	-.18	.25**	.48**	.29**	-	
14 Trait Anxiety	.04	.01	.14	.06	-.24*	-.32**	-.23**	.08	.22*	-.27**	-.31**	-.22*	-.47**	-
15 Aging Anxiety	-.18*	.11	.10	.10	-.17	-.12	-.33**	.06	.34**	-.21*	-.48**	-.18*	-.55**	.43**

Note: ASE-n = Acute emotional Stroop Effect - negative; ASE-p = Acute emotional Stroop Effect - positive; Gender: male = 1 and female = 2; * p < .05 and ** p < .01

Table 2. Characteristics of the Total Sample and the Experimental Groups: Mean (SD)

	Possible Range	Total Sample	Group 1 LTNC	Group 2 LTC	Group 3 STNC	Group 4 STC
N		124	31	31	31	31
Age	50 - 70	59.3 (5.5)	59.4 (5.1)	58.8 (5.9)	60.5 (5.9)	58.6 (5.2)
Gender: m/f	1 - 2	58 / 66	13 / 18	14 / 17	21 / 10	10 / 21
Education	1 - 10	5.9 (2.4)	6.1 (2.4)	5.5 (2.5)	6.3 (2.5)	6.0 (2.5)
Subjective Health	0 - 100	66.4 (14)	65.8 (12)	66.5 (15)	63.2 (15)	70.0 (12)
Future Orientation	5 - 25	16.7 (2.9)	16.8 (3.1)	16.6 (2.8)	17.1 (2.9)	16.3 (2.9)
Optimism	6 - 30	23.4 (3.0)	23.8 (2.7)	23.5 (3.3)	22.6 (2.8)	23.7 (3.2)
Trait Anxiety	20 - 80	32.9 (6.7)	33.5 (7.6)	33.6 (6.2)	33.2 (6.7)	31.4 (6.5)
Aging Anxiety	7 - 35	15.2 (4.4)	15.4 (4.8)	15.0 (4.5)	15.6 (4.3)	14.6 (3.9)

Note. LTNC = Long-Term and No Control, LTC = Long-Term and Control, STNC = Short-Term and No Control, and STC = Short-Term and Control.

Attentional Bias

Most participants made few mistakes on the emotional Stroop tasks. On average, 1 - 1.5 % of the responses were incorrect. In addition, few outliers (2.5 sd from personal mean score) and RTs below 100ms had to be removed; on average 1 to 2 scores per person (2.5 - 5.0 %) were discarded.

Table 3 demonstrates the results of the dependent variables. Paired-samples t-tests showed that the acute emotional Stroop effect towards negative stimuli (ASE-n) was significantly larger than the standard emotional Stroop effect towards negative stimuli (SSE-n) for all four experimental groups except for LTC ($p = .08$). It is likely that responses on the first subblock, negative stimuli, are less confounded by a process called strategic override (Mogg & Bradley, 1998), which means that people may have used less conscious strategies to diminish the distraction. Therefore, we decided to use the acute emotional Stroop effects for further analyses, although no significant differences were found between the standard (SSE-p) and acute (ASE-p) emotional Stroop effects towards positive stimuli.

After checking the multivariate effects, the analysis showed that there was a significant main effect of Time for ASE-n, $F(1, 108) = 5.31, p = .02$. As expected, Figure 1 demonstrates that people who were confronted with a potential goal threat that will probably manifest itself in the short term responded more slowly to stimuli representing that stressor. We found no significant main effect of Time for ASE-p, $F(1, 108) = .03, p = .88$.

From Figure 1 there appears to be a main effect of Control as well, nevertheless, the MANOVA-analysis showed that this effect was not significant, $F(2, 107) = .52$, $p = .60$. Neither attention towards negative stimuli nor attention towards positive stimuli is affected by the amount of control people have over a potential decline in health. In addition, we found no multivariate interaction effect of Time x Control, $F(2, 107) = .05$, $p = .95$.

Results were unchanged after controlling for the significant influence of aging anxiety, $F(2, 107) = 6.18$, $p = .00$, and subjective health, $F(2, 107) = 3.98$, $p = .02$. Persons who were more anxious about aging had a smaller attentional bias towards stimuli representing the difficult part of aging, $F(1, 108) = 11.60$, $p = .00$. Furthermore, people who rated their health as better responded more quickly to negative stimuli in comparison with neutral stimuli, $F(1, 108) = 7.45$, $p = .01$.

Table 3. Means (M) and Standard Deviations (SD) of the Dependent Variables Used in This Study (N = 124)

	LTNC		LTC		STNC		STC	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
RT (ms)								
Neutral stimuli 1	979	239	1010	255	982	198	992	156
Negative stimuli	931	211	989	238	974	198	994	157
<i>SSE-n</i>	-48	82	-21	64	-8	63	2	68
First subblock neg.	959	217	1005	232	1001	237	1023	176
<i>ASE-n</i>	-20	84	-5	86	19	97	31	84
Neutral stimuli 2	919	199	966	237	943	195	951	153
Positive stimuli	912	188	954	219	917	179	927	135
<i>SSE-p</i>	-7	76	-12	77	-26	46	-24	61
First subblock pos.	902	192	955	230	927	194	929	132
<i>ASE-p</i>	-17	74	-11	79	-16	43	-22	68
Time (min)								
Planning	2.34	1.75	2.26	1.58	2.52	1.04	2.25	1.79
Information Seeking	1.07	0.68	1.05	0.60	1.19	0.62	1.39	0.82
Evaluation of Plans								
Satisfaction	7.8	1.3	8.2	1.4	8.0	0.7	8.0	1.3
Confidence	7.8	1.4	8.2	1.1	7.7	1.1	8.2	1.1
Motivation	8.1	1.1	8.6	0.9	8.0	0.9	8.6	0.9

Notes. LTNC = Long-Term and No Control; LTC = Long-Term and Control; STNC = Short-Term and No Control; and STC = Short-Term and Control. RT = Reaction Time; SSE-n = Standard emotional Stroop Effect (negative); SSE-p = Standard emotional Stroop Effect (positive); ASE-n = Acute emotional Stroop Effect (negative); ASE-p = Acute emotional Stroop Effect (positive).

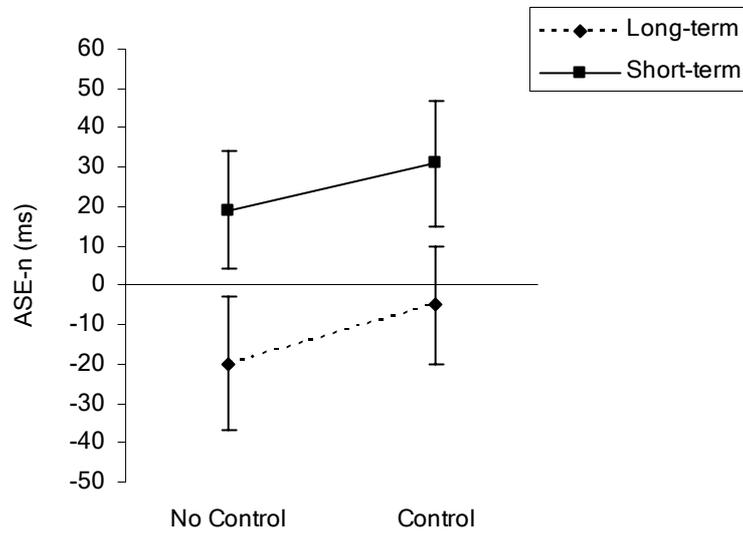


Figure 1. The effect of control on the acute emotional Stroop effect (in ms) towards negative stimuli for the short-term group (solid line) and the long-term group (dashed line) separately.

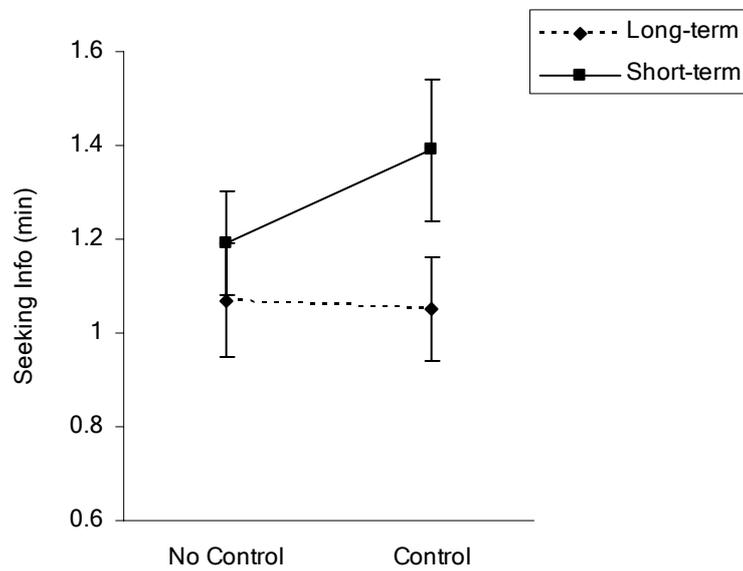


Figure 2. The effect of control on the amount of time spend on seeking information (in minutes) for the long-term group (dashed line) and the short-term group (solid line) separately.

Seeking Information and Planning

The second MANOVA analysis demonstrated a significant main effect of Time for information-seeking, $F(1, 105) = 5.18, p = .02$, indicating that people who face a potential goal threat in the short-term spend more time seeking information about ways to prevent the threat (see Figure 2), whereas the effect of Control, $F(2, 104) = .47, p = .63$, as well as the interaction effect Time x Control, $F(2, 104) = .97, p = .38$, were not significant. Results remained after controlling for age, $F(2, 104) = 3.32, p = .04$, and education, $F(2, 104) = 7.63, p = .00$. Older individuals spent more time seeking information about how to prevent a goal threat associated with aging, $F(1, 105) = 6.70, p = .01$. On the other hand, people with a higher educational level spent less time on this activity, $F(1, 105) = 15.39, p = .00$.

Although the results showed no manipulation effects for the amount spent on planning, we decided to research planning a little further. We examined the amount of participants who reported having a health goal. Results demonstrated that exactly 50% of the participants had a health-related goal. We conducted an additional analysis with this subgroup in order to explore whether people with a health-related goal were particularly affected by a confrontation with a potential threat to their goal. It showed that there was no significant main effect of Time, $F(1, 53) = .17, p = .68$, or Control, $F(1, 53) = 1.19, p = .28$, but that the interaction effect of Time x Control was significant, $F(1, 53) = 4.65, p = .04$.¹ As Figure 3 displays, people who faced a stressor in the near future spent more time making plans for obtaining their goals when they had no control ($M = 2.7$ min) than when they had control over the potential stressor ($M = 1.6$ min), whereas the opposite was found for people who faced a more distant potential stressor. The latter group spent more time on planning when they had control over the potential stressor ($M = 2.4$ min) than when they had no control ($M = 2.1$).

In addition, a third MANOVA analysis showed that Control but not Time did have an influence on how participants evaluated their plans, $F(3, 80) = 3.23, p = .03$. The amount of control over the potential stressor particularly affected the participants' motivation to execute their plans for the future, $F(1, 82) = 9.16, p = .00$. For both the long-term and the short-term experimental groups, more control led to more motivation (see Figure 4).

¹ We found no major differences in the results for the other dependent variables when re-analyzing the data with this subgroup of participants who reported having a health goal. For example, the MANOVA analysis with the acute emotional Stroop effects as dependent variables showed that time had a significant multivariate effect, $F(2, 50) = 3.01, p = .05$. This effect of Time was demonstrated for ASE-n, but not for ASE-p. No significant multivariate effects were found for Control, $F(2, 50) = .01, p = .99$, or for the interaction term Time x Control, $F(2, 50) = .91, p = .41$. Again, these results remained after controlling for aging anxiety and subjective health.

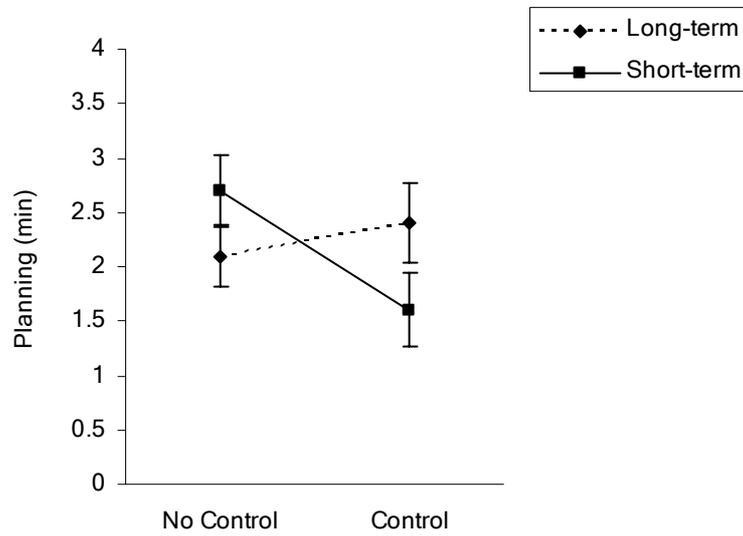


Figure 3. The effect of control on the time spent on planning (in minutes) for the short-term group (solid line) and the long-term group (dashed line) separately.

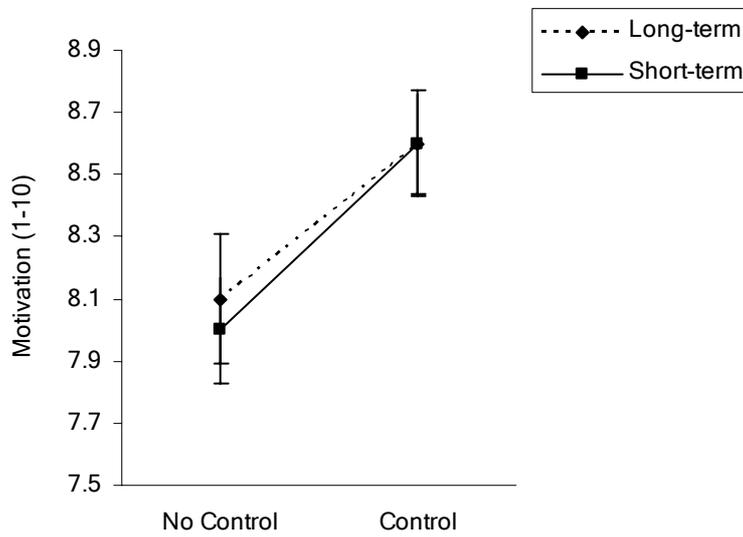


Figure 4. The effect of control on motivation to carry out one's plans for the future for the short-term group (solid line) and the long-term group (dashed line) separately.

Results were unchanged after controlling for several trait characteristics, of which optimism had a significant effect, $F(3, 80) = 3.73, p = .01$. Optimism influenced two of the three dependent variables; participants with a higher dispositional optimism had more confidence in their plans, $F(1, 82) = 7.80, p = .01$, and were more motivated to carry out these plans, $F(1, 82) = 6.61, p = .00$.

Discussion

Results of the present experiment suggest that time until a potential goal threat will manifest itself influences the amount of attention paid to signals that indicate the coming of the stressor as well as information-seeking about how to prevent the probable threat, whereas it did not affect planning. When a potential threat is likely to reveal itself in the short term, individuals paid more attention to danger cues and spent more time seeking information in comparison with when a potential threat would not reveal itself for a long time. Contrary to our predictions, control over the situation did not have an impact on proactive coping, but an additional, exploratory analysis showed an interesting interaction effect of time and control on the amount of time spent on planning in the group of participants who reported having a health-related goal. Furthermore, control affected how people evaluated their plans; people who had more control over the potential stressor were more motivated to carry out the plans they made for the future. The latter result implies that control influences the circumstances under which planning actually results in action. This is in line with previous research, which has demonstrated that people who have the skills to plan effectively will abstain from doing so when they are convinced that the desirable outcome is not controllable (Skinner, 1997).

The effect of time on attention and information-seeking may be explained by the idea that a potential stressor which is expected to occur in the short term is perceived as more threatening than a stressor which is expected to take place in the more distant future. Researchers have found that a future event and its consequences are indeed evaluated as less negative over time, particularly when the stressor is interpreted on a lower level in terms of the specific actions needed to handle the future stressor and the effects the stressor may have on personal goals (Liberman & Trope, 1998; Trope & Liberman, 2000). Future research may clarify whether the long-term groups indeed regarded a potential decline in health as less negative than the short-term groups and whether the experimental groups differed in their construal of the stressor.

The results of the manipulation revealed an interesting pattern in the subgroup of people who had mentioned a health-related goal as one of their goals. People who had to deal with a goal threat in the near future over which they had no control spent more time on planning activities for achieving their goals than people who had control over the same stressor. On the contrary, people who were confronted with a distant future goal threat spent more time on planning when they had control than when they

had no control. Previous research has demonstrated that events in the near future are associated with feasibility whereas distant future events are associated with desirability (Liberman & Trope, 1998). An explanation for the results in relation to planning might be that people in the STNC group may have mainly focused on the fact that their goals are less feasible, which may have resulted in a greater awareness of the possibility of failing to achieve their goals. Oettingen, Pak and Schnetter (2001) found that people who had encountered the negative reality of potential failure were more motivated to convert their desired states into concrete actions, which may be the reason that the STNC group was more willing to engage in planning activities to attain their goals. On the other hand, people in the STC group may also have perceived their goals as less feasible, but may also have had the feeling that they could control the potential threat to their goals. As a result, they might have first concentrated on the need to control this goal threat before engaging in thinking and planning about how to achieve their goals. Working on the prevention of the potential threat to personal goals may drain self-regulation resources that are no longer available for other future-oriented activities, such as planning to achieve their goals. Engaging in one self-regulation task depletes resources for other self-regulation activities (e.g., Baumeister & Heatherton, 1996; Vohs & Heatherton, 2000) and increases the feeling that the present lasts longer than it would normally, which results in a focus on the present instead of the future (Vohs & Schmeichel, 2003). It may be interesting to research whether a thorough content analysis of the participants' plans reveals a difference between the experimental groups, in other words, whether people who were confronted with the possibility of a controllable decrease in health in the short term made more plans about how to prevent this decline in health. In addition, future research might examine whether there is a difference when people are explicitly asked to formulate specific plans about how to prevent the potential goal threat instead of making plans for goal achievement in general.

However, an explanation for the results found for planning might be different for the people who were confronted with a potential goal threat that was not likely to occur for a long time. These people may have been less influenced by the information as to whether their goals were feasible or not; they may have focused more on the desirability of their goals. Moreover, they may have been less threatened by the goal threat, because it will only occur in the long term. Consequently, their goals may have been positive images of the future that were not yet influenced by a possible negative reality and which, therefore, may have led to a lower need to act, but not to a total disengagement from their goals (Oettingen et al., 2001; Oettingen & Mayer, 2002). This supports our results, as people in the long-term conditions spent less time on planning than people in the STNC condition, but more time than people in the STC condition.

The fact that we did not find an effect of control does not corroborate previous research, which has demonstrated that people who have more control over a situation or an event are more likely to direct their attention to threat signals (Brandtstädter et al.,

2004; Rothermund et al., 2002). However, these studies have manipulated the amount of control in a more artificial way. Participants in the high control groups of these experiments often have complete control over a situation and their responses, whereas control over one's health remains generally low, even if people feel that they do have such control. Moreover, previous research has shown that, as they age, people more often perceive that they have less influence on health outcomes (Schieman & Campbell, 2001) and that this feeling is enhanced when they observe illness and death among loved ones (Goldsteen, Counte & Goldsteen, 1995). Health becomes a strong part of older people's future imagines of themselves (Frazier, Johnson, Gonzalez & Kafka, 2002). Our manipulation might have not been strong enough to overthrow these beliefs about dealing with health issues.

An interesting result in this context has been put forward by Carver and colleagues (2000) who found that it is not perceptions of control that are important, but rather confidence about whether desired outcomes will be achieved. Control only has an effect when positive results are expected. So, it is possible that most middle-aged and older people believe that trying to change a potential decline in health will not be successful and, therefore, they may think that it is not worth engaging in proactive coping whether they are informed that they have control over their health or not. Nevertheless, we do not yet want to reject our hypothesis that control influences proactive coping strategies. Folkman & Moskowitz (2000) stated that another aspect of control, namely having a dispositional preference regarding control, may be important in ambiguous situations whose outcomes are still unclear. As proactive coping involves dealing with potential stressors, which are not yet certain to occur, a tendency to control may be a valuable determinant of engaging in proactive coping.

A potential limitation of the present experiment may be that we used written descriptions of a probable decline in health, which may be easily ignored if participants do not wish to be confronted with the information. Moreover, health may be a topic many people are familiar with and well informed about. In our western society, an individual's own responsibility regarding health is often emphasized and many people are preoccupied with the subject. This may have influenced the way people processed the information.

With respect to the emotional Stroop task, there may be alternative explanations for the effect we found. Since we presented the neutral words before the negative words, participants may have responded more slowly to these words because of tiredness. However, there are two reasons why fatigue is not likely to explain the findings. First, the standard Stroop effects were smaller than the acute Stroop effects. Second, if fatigue would have played a role, the effects should have been found in all experimental groups, because they had to respond to the same amount of stimuli. However, we did only observe such effects in the groups that were confronted with a potential health threat that was likely to reveal itself in the short term. Another possible

explanation is that responding to the negative cues might have caused small changes in mood, which distracts the individual (Richards, French, Johnson, Naparstek & Williams, 1992). The mood effects, however, should have lasted for several minutes and should have been present in all experimental groups. Our experiment showed that the latter was not the case and when an attentional bias was present, it disappeared after the first subblock of negative stimuli. Moreover, a mood hypothesis would predict a disruption of both negative and positive stimuli. In the present experiment, no evidence was found for the disruption of positive stimuli.

As mentioned before, we found a manipulation effect on attention towards negative stimuli whereas this effect was not demonstrated in relation to attention towards positive stimuli. Previous research has shown that people who experience momentary anxiety have more difficulty ignoring both negative and positive cues than neutral cues (e.g., Rutherford et al., 2004). We were not able to replicate this finding, however. As Rothermund and colleagues (2001) have argued that attention might be influenced by the outcome focus that people have, this may indicate that our manipulation triggered feelings of threat and a need to prevent the future stressor instead of feelings of challenge and an urge to generate positive outcomes. Future research is required to confirm this idea.

A strength of the present experiment was that we were able to test our ideas in the population that we had made hypotheses about, namely middle-aged and older adults. Few experiments have been conducted in this specific population; most experiments include a homogeneous sample of highly educated college students, which may make it difficult to generalize findings to the 'normal' population. Our experience is that people from outside the university are often very willing to participate. And although these samples might be more heterogeneous, the results of experiments may give a more realistic view about the various ways people respond to situations or stimuli.

Acknowledgements

The authors would like to thank Barbara Kooijman and Irene Lergner for assisting in the data collection.

Chapter 7



Summary and General Discussion

This thesis has focused on proactive coping, a new and promising concept that refers to the process of screening one's environment for danger, recognizing future stressors, appraising them as potential goal threats, and, finally, undertaking attempts to prevent them (Aspinwall, 1997; Aspinwall & Taylor, 1997). The studies discussed in this thesis provide the first empirical results in relation to this concept and, in particular, identify the factors that contribute to the engagement in proactive coping. This final chapter summarizes the main results of these studies, compares them, and places them within the theoretical framework of self-regulation. In addition, the methodological limitations of the studies are discussed and recommendations for future research are made. The chapter finishes with a consideration of the potential practical implications of the research that has been presented.

Overview of the Studies

Middle-aged and older adults aged between 50 and 70 are an excellent population in which to examine proactive coping (Aspinwall, 2002), since many people in this age group are likely to be confronted with various changes associated with aging, such as a decline in health, financial resources or changes in social relationships. On the other hand, most future changes are still ambiguous at this age; it is uncertain when and how these changes will take place and whether they will develop into real goal threats. Important questions are whether proactive coping is a useful strategy for these people and to what extent proactive coping contributes to self-regulation processes and subjective well-being in older age. In this thesis, we formulated a theoretical proposal to find answers to these questions and argued that proactive coping plays an essential role in self-regulation in older age (chapter 2). The next section of this final chapter starts with a summary of these theoretical considerations in the next section.

In addition, we are the first to systematically examine proactive coping in representative samples of Dutch people aged 50 to 70. So far, little empirical research has been conducted with respect to this concept. We stated that proactive coping encompasses at least three elements, namely a disposition to prevent future negative outcomes, a set of skills essential for engaging in proactive coping, and the actual cognitive and behavioral efforts undertaken. We measured these various aspects of proactive coping and used different research designs to test our hypotheses. Previous research has shown that people may have certain coping preferences (e.g., Endler & Parker, 1990; Terry, 1994), so the first aspect we measured was the extent to which people are inclined to prevent future problems before they occur. We labeled this tendency proactive coping orientation (chapter 3). An alternative way to assess proactive coping is as a set of skills. Aspinwall and Taylor (1997) suggested that people require skills, such as setting realistic goals and planning, in order to confront potential goal threats and make attempts to prevent them. In other words, they need proactive coping competence (chapters 3 and 4). Two different survey studies enabled us to

examine proactive coping orientation and competence in large, representative samples, and provided us with a quick insight into these first two aspects of proactive coping, their estimated prevalence in the general population of middle-aged and older adults, and the factors that may explain a part of their variance.

It is widely recognized that people with an inclination to behave in a particular way may not automatically show this behavior, as a result of situational constraints and other factors. What is important here is not only whether people have a tendency or the necessary skills to engage in proactive coping, but whether they actually undertake proactive coping efforts in order to offset future threats. In this line of research, we were guided by Lazarus and Folkman (1984), who proposed that a transactional perspective may be most useful in examining the concept of coping, since the individual and his or her environment interact in creating coping responses to stressful situations, a proposal which has been confirmed by several previous studies (e.g., De Ridder & Kerssens, 2003; Holahan & Moos, 1987; Mattlin, Wethington & Kessler, 1990; Stewart & Schwarzer, 1996). In two different studies, we looked at the extent to which situational features and individual characteristics cause people to undertake proactive coping efforts. The first was a field experiment, which examined self-reported proactive coping efforts using vignettes that each represented a potential decline in an important resource, namely a potential decrease in health, social relationship and financial resources (chapter 5). In addition, a laboratory experiment was conducted, which depended less on self-report measures and which examined the factors that play a role in the preparation for a potential decrease in health (chapter 6). This final chapter summarizes and discusses the main results of these studies.

Proactive Coping and Successful Aging

Important questions are whether middle-aged and older adults use proactive coping and which situations trigger their engagement in these processes. In addition, we might consider whether proactive coping is a useful strategy for middle-aged and older people to employ in their efforts to maintain a positive balance between gains and losses and to continue to pursue their personal goals in later life or, in other words, whether it assists them in aging successfully. In this thesis, we have reviewed current psychological models of successful aging that describe self-regulation processes in older age. We concluded that, at the current time, the model of selective optimization with compensation (SOC-model; e.g., M.M. Baltes & Carstensen, 1996; P.B. Baltes & M.M. Baltes, 1990; Freund & Baltes, 2000; Freund & Baltes, 2002; Marsiske, Lang, Baltes & Baltes, 1995) is the most important model to have become widely accepted and that it has the potential to predict and explain the differences in people with regard to successful development (chapter 2). Previous research has demonstrated that choosing between personal goals, optimizing the resources that facilitate the achievement of these goals and compensating for losses in resources are important

strategies that contribute to successful aging (e.g., Freund & Baltes, 1998; Freund & Baltes 1999; Freund & Baltes, 2002).

Research has also shown, however, that it becomes increasingly difficult to use these strategies in older age as a result of a decrease in the resources that these strategies depend on (e.g., M.M. Baltes & Lang, 1997; Freund & Baltes, 2002; Lang, Rieckmann & Baltes, 2002). We propose that when people have the capacity to foresee potential losses and act in advance in order to offset them, they are able to prolong the availability of resources for optimization and compensation and, therefore, postpone disengagement from personal goals, the attainment of which is important for subjective well-being and life-satisfaction. This strategy of taking a future-oriented and preventive viewpoint has hardly been addressed in the SOC-model and other models of successful aging. Insofar as models have explicitly paid attention to the fact that people may use strategies to prevent future problems, they have proposed concrete actions, such as avoiding disease (Rowe & Kahn, 1997) or promoting health, planning and helping others (E. Kahana & B. Kahana, 1996). We suggest, however, that preventive strategies may vary among and within individuals and depend on the personal goals people have set for themselves and the different types of future goal threats people encounter. It is likely that every individual who is able or willing to use proactive coping will pass through the same stages of proactive coping, but that they differ in the behavioral efforts or cognitive activities they ultimately undertake in order to deal with the same type of potential stressor. Moreover, proactive coping efforts may also differ within a person, as different types of stressors often require different types of actions.

We concluded that proactive coping is a promising concept that has not yet been addressed in models of successful aging, but which is potentially extremely useful for such models, since it may identify additional factors which explain why certain people are able to continue to achieve their goals and remain happy as they age. A few studies have already shown that planning for the future (Prenda & Lachman, 2001) and preventive health strategies (E. Kahana et al., 2002) contribute to life satisfaction and quality of life.

Empirical Findings

The Ability of People Aged 50 to 70 to Engage in Proactive Coping

An interesting and important question is whether the present generation of middle-aged and older adults is able to take a future-oriented point of view and to prepare itself for potential goal threats associated with aging. Previous empirical studies have demonstrated that older people do not avoid problems or passively react to them; they are capable of using as many effective problem-focused coping strategies as their younger counterparts (Aldwin, 1991; Aldwin, Sutton, Chiara & Spiro, 1996). The results presented in this thesis indicate that people aged 50 to 70 indeed have the skills necessary to engage in proactive coping, have a tendency to attempt to prevent future

problems, and are able to employ proactive coping efforts in order to offset potential goal threats. Although proactive coping competence slightly decreases between 50 and 70, no age differences were found within this age group for proactive coping orientation and proactive coping efforts (chapter 3). Of course, not all individuals were future-oriented or inclined to prepare themselves for potential goal threats to the same extent. A normally distributed continuum was found, so the next question is what factors contribute to engagement in proactive coping.

The Association between Current Stressors and Proactive Coping

One of our ideas is that people may not always find themselves in a position to be future-oriented and to act in advance. In particular, people who are currently experiencing many stressors may have more difficulty engaging in proactive coping (chapters 3 and 4). Current stressors may drain valuable resources that can then no longer be invested in thinking about the future (Aspinwall & Taylor, 1997). We focused on examining the role of major life events and current health stressors in proactive coping, since people may experience increasingly more stressful changes as they age and previous research has shown that many people are confronted with a decline in health when they shift from middle to older adulthood (Aldwin, Sutton, Chiara, & Spiro, 1996; Martin, Grünendahl, & Martin, 2001). Poor health may become a major source of stress in later life, particularly because it is such a valuable resource for goal pursuit and achievement. The results of the studies that examined the relationship between current stressors and different aspects of proactive coping can be summarized in three major findings.

First, we found no significant association between life events and proactive coping orientation, proactive coping competence or proactive coping efforts (chapter 3), which corroborates previous research (Prenda & Lachman, 2001). Secondly, we found that both proactive coping orientation and proactive coping competence were not or were only slightly related to present health stressors, which may be explained by the fact that skills and a tendency to act in a certain way are not likely to be much affected by factors that fluctuate over time, such as current stressors.

The third finding was more surprising, since it contradicted our hypothesis and suggested that mental health stress might not compromise proactive coping, but may actually contribute to it under particular circumstances. We demonstrated that mental health stress had a positive, longitudinal effect on proactive coping efforts (chapter 3). A possible explanation for this unexpected finding is that a small to moderate amount of mental health stress serves as a trigger to engagement in proactive coping, since in this situation people feel the necessity to take action. Indeed, previous research has shown that people need to feel at least slightly threatened in order to start using proactive coping strategies (Ouwehand, De Ridder & Bensing, 2001).

Socioeconomic Status and Proactive Coping Competence

An interesting finding of the studies described above is that education is positively associated with all aspects of proactive coping that we have studied. Based on the literature, we suggested that SES may be the underlying factor of two important prerequisites for proactive coping, namely the availability of resources or the ability to accumulate them and the freedom from major current stressors that require attention and action (chapter 4). A few previous studies have demonstrated that SES is positively associated with the use of active, future-oriented strategies (Feldman and Steptoe, 2003; Pinquart & Sörensen, 2000; Prenda & Lachman, 2001). Our own study provided additional evidence for this relationship, as we found that people with a higher income and/or a higher educational level were more likely to have proactive coping competence whereas occupational status was not significantly associated with proactive coping competence (chapter 4). In addition, some evidence was found for the idea that people with lower SES have more current stress, which inhibits engagement in proactive coping. The relationship between income and competence was partially mediated by physical health stress. People with a higher income have less physical health stress, which in turn is positively associated with competence. A possible explanation for this finding is that people may have the skills to set feasible goals and make plans, but may not always be able to apply them as a consequence of present problems that need attention.

Findings in Favor of the Transactional Perspective

Another important question, and one which has been studied in the field of (reactive) coping, is to what extent proactive coping varies across different situations and to what extent it is predicted by personal characteristics. Recent research has presented results that provide evidence in favor of the transactional perspective (De Ridder & Kerssens, 2003; Mattlin, Wethington & Kessler, 1990; Stewart & Schwarzer, 1996; Terry, 1994), which refers to the idea that people and their environments interact in creating coping responses to stressful situations (Lazarus & Folkman, 1984).

Both the field experiment (chapter 5) and the lab experiment (chapter 6) provide significant insight into the extent to which situational features and individual characteristics contribute to the use of proactive coping strategies in order to offset potential goal threats. They confirm the hypothesis that, depending on their characteristics, certain types of potential goal threats trigger more proactive coping efforts than others. When a situation is appraised as a higher threat to personal goals and as more controllable, an individual uses more proactive coping efforts (chapter 5). Furthermore, the type of goal threat shapes proactive coping; on average, a confrontation with a potential decline in health provokes more proactive coping efforts than a potential decrease in financial resources or social relationships. Interestingly, we found that the relationship between type of threat and proactive coping efforts differs

between people; for example, some individuals use more proactive coping efforts when they encounter a potential decline in health than when they are confronted with a potential decrease in financial resources while for other individuals the pattern may be the reverse.

Two other features of a potential goal threat also predicted proactive coping behavior (chapter 6). As hypothesized, people who were confronted with a potential decline in health that was likely to occur in the short term paid more attention to danger cues and sought more information about this goal threat and how to prevent it. The amount of actual control did not influence attention and information-seeking behavior. In addition, an interaction effect of time and control was found for planning. Interestingly, people who encountered a potential decline in health in the near future spent more time on planning strategies when they had little or no control over the stressor than when they had a lot of control, whereas the opposite was found for a more distant future goal threat. A limitation of this final experiment was that it was unclear whether people made plans about how and when to prevent the potential goal threat. A different effect of control and time may be found when people are explicitly asked to write down such plans.

Generalization of the Results

With regard to the generalization of the results, several studies described in this thesis used moderate to large sample sizes, which were representative for Dutch people aged 50 to 70. Although two of the studies, namely the field experiment (chapter 5) and the lab experiment (chapter 6) had smaller sample sizes, they were still fairly representative since they did not differ greatly from the general population with respect to the proportion of men and women, average age, educational level, marital status and state of health. As a result, the external validity of the results was high.

The results cannot be generalized to other age groups, since we did not include them in our studies. The epidemiological study provided some preliminary results regarding age differences with respect to proactive coping competence (chapter 3). We found that people in their twenties have the most proactive coping competence and that it gradually declines with age. Since this study had a cross-sectional design, future research is necessary to determine whether these differences may be attributed to age effects or cohort effects.

Nevertheless, we expect that individuals of all ages may benefit from employing proactive coping strategies. Self-regulation, which deals with goal setting and goal pursuit, is an essential part of life; on a daily basis, people formulate various types of goals and take action to attain those goals (Baumeister & Vohs, 2004). During goal pursuit in particular people may be confronted with obstacles that make the achievement of goals difficult and, therefore, it is essential that people effectively manage the stressors that may constitute a threat to their goals. When people are able

to occasionally allow themselves to sit back and reflect on the future, many daily struggles may be less daunting than when people let problems take their own course. Thinking ahead and taking small steps at a time to handle potential problems may prevent people from being assailed by these problems once they are fully developed. When that happens, it may become very difficult for people to deal effectively with their struggles, giving rise to the possibility of self-regulation failure, since people may no longer be able to handle the problems and achieve the goals they strive for and that make them happy.

Methodological Considerations

Personal Variables versus Situational Aspects

The results of the studies presented suggest that proactive coping variability across situations is greater than the variability between individuals. The proximal and more distal personal characteristics examined in this thesis were not able to explain a great part of the variance in proactive coping. We examined the role of several personal characteristics, such as dispositional optimism, goal orientation and aging anxiety. Having a future temporal orientation was one of the most important personal factors for understanding the amount of proactive coping efforts people undertake, but none of the other factors played a major role. Furthermore, the results of our studies did not confirm the hypothesis that major life events and health stressors may overwhelm people to the extent that they are no longer able to take a future-oriented point of view and to handle potential goal threats in advance. An explanation, however, may be that the cohort in question (adults aged between 50 and 70) still enjoys relatively good health. For this age group, health stressors may not be the right type of stressors to test the idea that current stressors drain valuable resources that can then no longer be invested in future-oriented activities, such as proactive coping. Other personal sources of stress, such as chronic financial or family problems may have a greater impact. In addition, it is important to keep in mind that the way people appraise their problems as well as how they handle them may be important aspects to consider when examining the relationship between current stressors and proactive coping.

Although we were not able to identify the major significant personal factors that contribute to proactive coping, the field experiment showed that a large amount of the variance in proactive coping is explained on the individual level (chapter 5). It might be that other personal features not included in our studies explain additional variance in proactive coping. For example, social support may be an important personal resource people can rely on when confronted with potential problems. Previous research has shown that social support may prevent an event from being perceived as highly stressful (e.g., Guillet, Hermand, & Mullet, 2002). Further, social support may supply information about the stressor and encourage people to use effective strategies to deal

with it (Berkman, Glass, Brissette & Seeman, 2000; Cohen & Wills, 1985; Unger, McAvay, Bruce, Berkman, & Seeman, 1999).

Emotional Stroop Task

With respect to the emotional Stroop task we used in our lab experiment (chapter 6), it is important to note that there is some debate about which design format should be employed in order to obtain the most accurate emotional Stroop effects. Previous research has shown that the variability in emotional Stroop effects may depend on at least two not negligible factors, namely method of presentation and design format. For example, Kindt, Bierman and Brosschot (1996) have found that there is a lack of convergent validity for the presentation of the stimuli on cards and on the computer screen. Studies using a card method of presentation often show larger emotional Stroop effects than computer presentations (Williams, Mathews & MacLeod, 1996). The probable reason for this finding is that the card method blocks stimuli from a single category, which has been shown to produce larger interference than a design in which neutral and valenced stimuli are (pseudo-) randomly mixed (Holle, Neely & Heimberg, 1997; McKenna & Sharma, 2004; Richards, French, Johnson, Naparstek & Williams, 1992; Waters & Feyerabend, 2000). It is still unclear what psychological mechanisms are responsible for this difference, but researchers have suggested that when valenced words are presented in a block design it is not just that an attentional bias process may be operational, but that this design format may also induce a change in mood in such a way that it distracts the individual (Richards et al., 1992). Another explanation is that it may cause rumination over previous words (Foa, Feske, Murdock, Kozak & McCarthy, 1991; Holle et al., 1997). Both processes might lead to an overestimation of the emotional Stroop effect. In order to avoid these effects, a pseudo-randomly mixed design is frequently employed.

However, both Waters and colleagues (Waters, Sayette & Wertz, 2003; Waters et al., 2003) and McKenna and Sharma (2004) have provided new arguments in favor of a blocked design in non-clinical samples. An underlying assumption of the pseudo-randomized design is that the emotional interference is a fast process that operates within a trial and has no effect on following trials (McKenna & Sharma, 2004). Recent research has, however, shown that in non-clinical samples at least carry-over or “slow” effects are present that affect subsequent trials, resulting in delayed reaction times on neutral stimuli (McKenna & Sharma, 2004; Waters, Sayette & Wertz, 2003; see also Waters & Feyerabend, 2000). Consequently, the measures of the responses on neutral cues are less clean and accurate, which has been found in non-clinical samples to result in a diminishment or disappearance of the emotional Stroop effect in mixed designs (Waters & Feyerabend, 2000; Waters et al., 2003) or even a reversion of the effect in pseudorandom designs (McKenna & Sharma, 2004).

As our study includes a non-clinical sample, we decided to employ a blocked design in order to avoid the carry-over effects on neutral words as much as possible. The blocks were presented in a fixed order in which the neutral block was presented before the valenced block, since it has been suggested that the potentially confounding effects of the carry-over effects are a more serious threat to the validity of the results than the potential problems that may arise from not counterbalancing the blocks (Waters et al., 2003; see also Rohsenow & Niaura, 1999). Finally, we were primarily interested in the acute Stroop effects, because the results of previous research have indicated that the use of conscious processes to reduce distraction are minimal during the first trials and, therefore, the emotional Stroop effect may be maximal (Waters & Feyerabend, 2000; Waters et al., 2003). Nevertheless, we decided to employ a standard Stroop task, because within the current design and age group the use of the acute Stroop had no precedent.

Other Measures and Research Designs

When we started our research, no measurement instruments for proactive coping were available except for the proactive coping inventory developed by Greenglass, Schwarzer and colleagues (1999). However, this instrument assesses only one aspect of proactive coping, namely the tendency to prepare for future problems or, in other words, proactive coping orientation. It is also relevant to measure other elements of proactive coping, particularly since we showed that these aspects are not strongly associated (chapter 3). In this thesis, we have examined two additional aspects of proactive coping, namely proactive coping competence and proactive coping efforts. Furthermore, different research designs were employed to study these aspects. To sum up, we examined whether people: (1) have the tendency to prevent future problems before they fully reveal themselves; (2) have a set of skills needed for the confrontation of potential threats; and (3) undertake actual efforts to offset a future threat, which may be further divided in cognitive activities and behavioral actions.

The first two aspects of proactive coping - proactive coping orientation and proactive coping competence - were examined in two different survey studies using self-report measures that had high internal consistency (chapters 3 and 4). A limitation of these studies was their cross-sectional design, which makes causal interpretation of the data impossible. Future longitudinal studies may examine whether, for example, SES is not only positively associated, but actually leads to more proactive coping competence (chapter 4). It is important to keep in mind that relationships such as this one may be just the opposite, since people who have the proper skills or the tendency to offset problems at an early stage may be able to actively create an environment with fewer obstacles and more opportunities.

A second limitation is the use of self-report measurement instruments in order to assess proactive coping. In the field experiment (chapter 5), we asked people to

indicate how they would respond to the situations described in the vignette using a checklist with prepared response items. As such, it is not certain what it is being measured; it might be an indication of the behavioral preferences people have instead of the actual behavioral efforts that have been undertaken. Other problems with self-report measures are that it is questionable whether people are able to correctly report their coping competence and coping efforts (Schwartz, Neale, Marco, Shiffman & Stone, 1999). Further, self-report data may be biased by socially desirable answering (Coyne & Gottlieb, 1996).

A primary strength of the final experiment we conducted (chapter 6) is that we studied people's proactive coping behavior without using self-report measures and without the participants' realizing that they behaved in a certain way. In addition, causal relationships were directly demonstrable. Finally, the experiment provided some initial insight into the various cognitive and behavioral aspects of proactive coping. The separate stages of proactive coping are often very complex and much research is needed to understand these aspects. For example, with regard to attention being paid to signals that announce a potential goal threat, it is still unclear when people start paying attention to these signals, what factors contribute to how much attention people pay, how people handle the often ambiguous and contradictory signs, how people make the decision that a potential threat is not worth their attention, etcetera.

All in all, a recommendation for future research is to examine the various components of the proactive coping process separately and more thoroughly while relying less on self-reports and using research designs that enable causal interpretations of the data. This means that proactive coping might be best examined in experimental settings. Although an experimental setting is to some extent artificial, it provides the opportunity to research complex processes in a relatively controlled environment.

A final strength of our lab experiment was that we tested our hypotheses in the population that we had made hypotheses about, namely adults aged 50 to 70. Many experiments study psychological processes in college students. Our experience is that individuals from outside the university are often very willing and able to participate in such experimental studies independent of their educational level. A major advantage of examining processes in other samples than highly educated college students is the increased validity and generalizability of the results.

Uniqueness of the Concept

Proactive coping refers to the attentional, cognitive and behavioral processes that enable people to foresee potential threats to their goals and to undertake efforts to prevent them (Aspinwall & Taylor, 1997). While working towards the achievement of personal goals, people are confronted daily with problems of varying degrees of seriousness and which they may be able to avoid if they have the appropriate skills and

resources and use the most effective strategies to offset these potential threats. As such, proactive coping consists of more than just thinking ahead and being future or goal oriented; it combines elements of self-regulation, planning and problem solving (Aspinwall, 1997; Aspinwall & Taylor, 1997), which makes proactive coping a new and unique concept. This thesis provides preliminary results that confirmed that the concept of proactive coping is indeed sufficiently different from related constructs, such as future temporal orientation and goal orientation (chapter 3).

A few years ago, Schwarzer and colleagues suggested that proactive coping may not only include cognitive and behavioral actions directed at preventing adversities, but also at creating future opportunities that facilitate the achievement of challenging goals (Aspinwall, Hill & Leaf, 2002; Greenglass, 2002; Schwarzer, 2001; Schwarzer & Taubert, 2002). Our study suggests that these aspects of proactivity are in fact two different concepts (chapter 3) that should be examined separately using different measurement instruments.

More research is needed to further determine the construct validity. For example, we only showed that the proactive coping measures were sufficiently distinct from measures that assessed preferences for future-oriented management styles, but we have no information about their associations with related constructs that assess the actual behavioral efforts undertaken. Moreover, additional information is required in relation to the usefulness and predictive validity of the proactive coping measures. In the present thesis, we have mainly focused on the extent to which variables, such as physical and mental health, may be predictors of proactive coping, but not whether proactive coping may explain variance in outcomes that indicate successful aging, such as good physical health, positive emotions and subjective well-being.

Additional Recommendations for Future Research

The interesting question of whether proactive coping contributes to successful aging in the long term could not be answered in the context of our studies. Although the results of two previous studies indicate that planning is beneficial, particularly for older individuals (Prenda & Lachman, 2001), and that undertaking efforts to prevent a decline in health lead to a better quality of life several years later (E. Kahana et al., 2002), no other studies have been conducted that provide empirical evidence for the theoretical statement that future-oriented and preventive strategies may contribute to successful aging. Since research that observes the long-term outcomes of proactive coping is both costly in terms of time and money, it may be preferable for future research to focus on other ways to study whether individuals are likely to be able to prepare themselves successfully for future difficulties and whether this contributes to successful aging. For example, future research might examine whether people who generally engage in proactive coping experience better adjustment or higher subjective well-being than people who do not use such strategies. An alternative method would be to measure

whether people have the capacity to apply their skills, such as setting goals and making plans, or whether they have a considerable range of proactive coping options available to them and are capable of using the most appropriate strategy when confronted with a certain type of potential goal threat. The latter may be an interesting subject for future experimental studies.

In this context, another interesting question is whether people can be taught to use proactive coping strategies. Research by Bode and colleagues (under review) showed that through a minimal intervention people were able to improve their proactive coping skills, such as the ability to recognize first signs of an unpleasant change, to translate their wishes into plans and to think about alternatives when a solution does not work. Three months after finishing the course, this effect was still present. Future research might examine whether not only proactive coping skills are improved by training, but also proactive coping efforts and whether these efforts are effective in offsetting personal potential difficulties.

Finally, the question of whether proactive coping is always adaptive remains unanswered. Proactive coping may drain critical resources when signals of a future threat are appraised incorrectly (Aspinwall & Taylor, 1997). For some individuals, other unintended side effects of engaging in proactive coping include rumination and high vigilance. Results of an intervention study conducted by our research group, which was aimed at training adults aged 50 to 75 to employ proactive coping skills (Bode, De Ridder & Bensing, under review), showed that these people did not ruminate either more or less after receiving the training. This sample, however, consisted for the most part of people who experienced difficulties and who actively sought out new strategies in order to deal with their problems and develop opportunities for positive future outcomes (Bode, De Ridder & Bensing, unpublished data). It might be that other types of people may ruminate more and be more anxious when they are confronted with the idea that it may be effective to think about future threats.

A long-term negative consequence of proactive coping may be that people who are always thinking ahead and who are used to actively trying to prevent threats in order to carry on achieving of their goals may eventually be unable to disengage from goals when it becomes clear that they are no longer achievable - an important strategy in ensuring continued happiness and avoiding negative emotions (Rothermund & Brandtstädter, 2003a; Rothermund & Brandtstädter, 2003b; Wrosch, Scheier, Miller, Schulz and Carver, 2003). It would be interesting to further address the potential negative consequences of proactive coping in future research.

Practical Implications

Since this thesis is one of the first studies to examine the proactive coping process and many more studies are necessary to fill the gaps we have described, we are cautious about making definitive statements in relation to how the results may be

used for practical or political purposes. One of its potential implications might be that, on the basis of the research described in this thesis, it is possible to identify subgroups of people who may benefit from extra support or training in order to undertake effective proactive coping efforts. A recent study of our research group has demonstrated that certain types of people are very willing to participate voluntarily in an intervention study in which they learn to use proactive coping strategies (Bode et al., unpublished data). These include individuals who are likely to be divorced and living alone and/or who have poorer subjective health, and have experienced losses in the social life domain. It seems that these people are aware of their risk with regard to successful aging and seek assistance in order to enhance their ability to handle difficulties and create opportunities for growth (Bode et al., unpublished data).

However, it is also possible for people to be at risk, but not to always be able to recognize this. It might be interesting to examine the characteristics of these individuals in order to be able to pay them extra attention and provide them with information. The results of this thesis demonstrate that people with a low socioeconomic status have less proactive coping competence. This relationship, however, is rather small. It appears that SES is not a very good variable to determine high-risk groups; SES may be too distal a predictor of proactive coping. It might be better to seek people with few skills that are valuable for engaging in proactive coping. For example, people who have not learnt to take a future-oriented point of view or to analyze a problem and to think of strategies to effectively handle the problem may profit from training.

In addition, it is important to realize that people may be able to use proactive coping strategies in one situation, but not in another. More research is needed to determine whether this is the result of lack of interest or lack of necessity, or the inability to use one's skills in situations that are less familiar. Future research may provide answers to these questions.

Concluding Remark

To conclude, the present thesis has made several contributions to both our theoretical and empirical understanding of proactive coping processes in relation to successful aging. We have theorized to what extent the concept of proactive coping may be complementary to existing models of successful aging and how proactive coping may contribute to self-regulation processes in later life. In addition, the studies described in this thesis provide the first empirical results with regard to the concept and the role resources and strategies play in the preparation for potential goal threats associated with aging.

Nederlandse Samenvatting

(Dutch Summary)

Het aantal oudere mensen in onze maatschappij groeit en de komende jaren zal dit alleen nog maar meer toenemen. De verwachting is dat het aantal mensen dat 65 jaar en ouder is de komende 35 jaar bijna zal verdubbelen; in het jaar 2004 was 14% van de Nederlandse bevolking 65 jaar en ouder, in 2040 zal dit 24% zijn. En niet alleen neemt het aantal ouderen toe, maar zij zullen ook steeds langer leven.

Hoe kunnen we er voor zorgen dat oudere mensen zo lang mogelijk gezondheid en gelukkig blijven? Hoe kunnen zij succesvol oud worden? Aan het ouder worden zitten natuurlijk een aantal positieve, maar ook negatieve kanten. Mensen noemen meer vrijheid als een positief punt, maar het achteruitgaan van de gezondheid hoort bijvoorbeeld ook bij het ouder worden. Het onderzoek dat beschreven staat in dit proefschrift gaat vooral over de manier waarop mensen omgaan met de moeilijke kanten van het ouder worden. Het centrale idee is dat als mensen in staat zijn om vooruit te kijken, problemen te zien aankomen en in een vroegtijdig stadium maatregelen te nemen om die problemen te voorkomen of te verkleinen, dit kan helpen om succesvol oud te worden. Het idee van vooruit kijken en het op tijd maatregelen nemen om moeilijkheden te voorkomen wordt ook wel proactieve coping genoemd.

Hoe kan proactieve coping leiden tot succesvol oud worden?

Theoretisch gezien kan proactieve coping bijdragen tot het succesvol ouder worden (zie hoofdstuk 2). Succesvol ouder worden wordt tegenwoordig vaak gedefinieerd als het behouden van een positieve balans tussen groei en verlies en het blijven behalen van je persoonlijke doelen. Volgens het selectieve optimalisatie met compensatie model (SOC-model) is het daarbij belangrijk om die doelen te kiezen die het belangrijkste voor je zijn, vervolgens er voor te zorgen dat de middelen aanwezig zijn om die doelen te bereiken en het verlies van middelen zoveel mogelijk te compenseren. Onderzoek heeft laten zien dat die strategieën inderdaad bijdragen aan succesvol ouder worden. Maar het heeft tegelijkertijd ook aangetoond dat het op oudere leeftijd steeds moeilijker wordt om die strategieën te gebruiken, omdat het gebruik van de strategieën zelf ook weer afhankelijk is van middelen die met het ouder worden steeds minder worden. Vooruit kijken en proberen om potentiële verliezen in die middelen te voorkomen kan er misschien voor zorgen dat belangrijke persoonlijke doelen langer nagestreefd kunnen worden. En omdat mensen nu eenmaal gelukkig worden van het bereiken van hun doelen, kan proactieve coping op die manier bijdragen aan welzijn op oudere leeftijd.

Welke onderzoeken staan in dit proefschrift beschreven?

Tot nu toe is er geen tot weinig onderzoek gedaan naar proactieve coping. Het onderzoek dat beschreven staat in proefschrift is één van de eerste systematische studies naar proactieve coping en de factoren die er voor zorgen dat mensen zich wel of juist niet voorbereiden op de problemen die samengaan met het ouder worden. We

gingen ervan uit dat proactieve coping uit ten minste drie elementen bestaat, namelijk (1) een zekere neiging om toekomstige, negatieve veranderingen te voorkomen, ook wel proactieve coping oriëntatie genoemd; (2) een set van vaardigheden die nodig zijn om proactieve coping te gebruiken, namelijk proactieve coping competentie; en (3) de uiteindelijke pogingen die ondernomen worden om mogelijke, moeilijke veranderingen te voorkomen, proactieve coping inspanningen genaamd.

Die drie aspecten hebben we in verschillende soorten onderzoeken bestudeerd. Proactieve coping oriëntatie en competentie werden gemeten d.m.v. vragenlijsten in twee grote, representatieve steekproeven van de Nederlandse bevolking. Vragenlijstonderzoek geeft snel inzicht in die eerste twee elementen van proactieve coping en de factoren die daarbij een rol spelen. Of mensen ook daadwerkelijke actie ondernemen om mogelijke, negatieve aspecten van het ouder worden te voorkomen, werd bekeken in een veldexperiment en een laboratorium experiment. In het eerste experiment confronteerden we mensen met drie denkbeeldige situaties waarin een potentiële, toekomstige verandering op het gebied van gezondheid, sociale contacten en financiën beschreven stond. We vroegen ze aan te geven welke maatregelen zij zelf nu al zouden nemen om de veranderingen zo veel mogelijk te voorkomen. Het laboratorium experiment bouwde hierop voort, maar was minder afhankelijk van wat de mensen zelf rapporteerden.

Bereiden mensen zich voor op het ouder worden?

Een eerste vraag is natuurlijk of de huidige generatie van mensen tussen de 50 en 70 jaar zich voorbereidt op de moeilijke kanten van het ouder worden. Het onderzoek dat in dit proefschrift beschreven staat, laat zien dat zij zeker vooruit kijken en ook de vaardigheden bezitten om proactieve coping maatregelen te nemen (zie hoofdstuk 3). Natuurlijk willen of kunnen niet alle mensen zich bezighouden met de toekomst en het ouder worden, dus een volgende belangrijke vraag is wat het is dat die verschillen tussen mensen kan verklaren.

Wat is de relatie tussen stress en proactieve coping?

Eén van onze ideeën was dat mensen door omstandigheden niet altijd in staat zijn om proactieve coping maatregelen te nemen. Zo kunnen dagelijkse problemen, zoals financiële moeilijkheden of relationele problemen, zoveel aandacht vragen dat er nauwelijks meer tijd en energie over is om ook nog over de toekomst na te denken. In ons onderzoek hebben we vooral onderzocht of gezondheidsproblemen een invloed hebben op het voorbereiden op het ouder worden. Het bleek dat mensen met een slechte gezondheid net zo goed in staat zijn als mensen met een goede gezondheid om proactieve coping te gebruiken, maar dat mensen die op het moment mentaal niet zo lekker in hun vel zitten zes maanden later wel meer maatregelen hebben genomen om

zich voor te bereiden op het ouder worden (zie hoofdstuk 3). Blijkbaar moeten mensen het gevoel hebben dat het niet zo goed met ze gaat voordat ze actie ondernemen.

Gebruiken mensen die het minder goed hebben minder proactieve coping?

Een andere vraag was of sociaal-economische status (SES) een invloed heeft op proactieve coping. SES wordt vaak gemeten door te kijken naar het opleidingsniveau, het inkomen en het soort werk dat iemand doet of heeft gedaan. Mensen met een hogere SES hebben vaak meer middelen tot hun beschikking, zoals geld en allerlei vaardigheden, en minder problemen, zoals financiële of huisvestingsproblemen, dan mensen met een lagere SES. Het idee is dan ook dat mensen met een hogere SES zich meer en makkelijker kunnen voorbereiden op het ouder worden. Ons onderzoek bevestigt die vooronderstelling voor een deel. Personen met een hoger inkomen en/of hoger opleidingsniveau hebben meer vaardigheden die nodig zijn om op een doeltreffende manier van proactieve coping gebruik te maken (zie hoofdstuk 4). De relatie tussen inkomen en proactieve coping kan voor een deel verklaard worden door de bevinding dat mensen met een hoger inkomen vaak een betere gezondheid hebben, wat waarschijnlijk het gebruik van die vaardigheden vergemakkelijkt.

Nemen mensen in iedere situatie evenveel proactieve coping maatregelen?

Vervolgens hebben we bekeken in hoeverre het nemen van proactieve coping maatregelen afhangt van kenmerken van de persoon zelf dan wel van die van de situatie waarop de persoon zich wil voorbereiden. Het onderzoek dat beschreven staat in de hoofdstukken 5 en 6 laat zien dat sommige situaties meer proactieve coping oproepen dan andere. In het veldexperiment (een vignettenstudie) confronteerden we mensen met drie verschillende situaties waarin een toekomstige achteruitgang op een belangrijk gebied, zoals gezondheid, beschreven stond (zie hoofdstuk 5). We vroegen de personen hoe ze zouden reageren als ze in zo'n situatie terecht zouden komen. Over het algemeen ondernemen mensen meer actie als ze worden geconfronteerd worden met het feit dat mogelijk hun gezondheid achteruit kan gaan dan als het gaat om vervelende veranderingen op het gebied van bijvoorbeeld sociale contacten of financiën. Maar we vonden ook het interessante resultaat zien dat dit wel per persoon kan verschillen. Het kan dus zijn dat sommigen zich meer bezighouden met hun gezondheid terwijl anderen dat meer doen met hun persoonlijke financiële situatie. Als een situatie een grotere bedreiging vormt voor de iemands persoonlijke doelen, dan neemt hij of zij meer maatregelen om dat probleem te voorkomen en dan met name als de persoon invloed kan uitoefenen op de situatie.

In het laboratorium experiment hebben we de invloed van de kenmerken van de situatie op het wel of niet gebruiken van proactieve coping nog wat verder onderzocht (zie hoofdstuk 6). Het voordeel van dit experiment was dat we wat minder afhankelijk waren van wat de mensen zelf meldden wat hun aanpak zou zijn, omdat we ze niet aan

hen zelf vroegen wat ze zouden doen, maar we direct bekeken hoe ze inspeelden op de situatie zonder dat ze in de gaten hadden dat ze dat op een bepaalde manier deden. De personen kregen te lezen hoe de gezondheid van oudere mensen kan verslechteren. Het bleek dat mensen die te zien kregen dat oudere mensen op relatief jonge leeftijd al met een slechte gezondheid te maken zullen krijgen, meer aandacht hadden voor signalen die aangaven dat er mogelijke verandering op komst is dan mensen die te lezen kregen dat mensen daar over het algemeen pas op oudere leeftijd mee geconfronteerd zullen worden. Ook besteedden ze meer tijd aan het lezen van verdere informatie over gezondheid en het ouder worden en wat ze zelf konden doen om zo lang mogelijk gezond te blijven. De mededeling dat mensen wel of juist geen controle hadden over het verloop van hun gezondheid had geen invloed op de proactieve coping maatregelen die de mensen uiteindelijk namen.

Zijn de resultaten representatief voor alle Nederlandse mensen tussen de 50 en 70?

De onderzoeken die beschreven staan in dit proefschrift werden bijna allemaal uitgevoerd in grote steekproeven, die representatief waren voor de Nederlandse bevolking tussen de 50 en 70 jaar. Hoewel de steekproeven van de experimenten die beschreven zijn in hoofdstukken 5 en 6 wat kleiner waren, waren ze toch representatief, omdat ze nauwelijks van de bevolking verschilden wat betreft man/vrouw verhouding, gemiddelde leeftijd, opleidingsniveau, burgerlijke staat en gezondheid.

De resultaten zijn alleen niet representatief voor andere leeftijdsgroepen. Desalniettemin verwachten we wel dat volwassen mensen van alle leeftijden kunnen profiteren van het vooruit kijken en het al in een vroegtijdig stadium bedenken wat ze kunnen doen om nare veranderingen te vermijden. Als mensen af en toe eens de tijd nemen om over hun toekomst na te denken en door middel van kleine stapjes proberen dingen te voorkomen of te veranderen, kan het zijn dat veel problemen uiteindelijk niet zo groot zullen zijn dan wanneer mensen alles maar op hun beloop laten gaan.

Wat kunnen we in de praktijk met de resultaten uit dit onderzoek?

Het onderzoek dat in dit proefschrift beschreven staat is één van de eerste studies naar proactieve coping en natuurlijk blijven er dan nog veel vragen liggen. Zo hebben we bijvoorbeeld beredeneerd dat het in theorie denkbaar is dat het gebruik van proactieve coping op de lange termijn bijdraagt aan succesvol ouder worden, maar is het niet mogelijk om dat met de gegevens die we nu hebben goed te onderzoeken. Hiervoor zou je het beste mensen een langere tijd kunnen volgen. We zullen dan ook geen sterke uitspraken doen over hoe de resultaten uit dit onderzoek gebruikt kunnen worden in de praktijk. Een mogelijke implicatie kan wel zijn dat op basis van dit onderzoek bepaalde groepen mensen kunnen worden aangewezen die baat zouden kunnen hebben bij het krijgen van meer informatie of training over het voorbereiden op het ouder worden. Zo hebben we gevonden dat mensen met een lagere sociaal-

economische status minder proactieve coping vaardigheden hebben. Maar het is belangrijk om te onthouden dat die relatie niet zo sterk was, dus dat je op basis van iemands inkomen of opleidingsniveau niet zulke sterke aanwijzingen hebt dat iemand tot een risicogroep behoort als het gaat om niet nadenken over de toekomst. Misschien kun je mensen beter selecteren op de mate waarin ze beschikken over die vaardigheden die belangrijk zijn voor proactieve coping, zoals analytische of probleemoplossende vaardigheden. Het is daarbij ook belangrijk om te bedenken dat sommige mensen vaardigheden bezitten, maar ze niet altijd gebruiken. Of dit komt doordat ze ze niet willen gebruiken of dat mensen niet weten hoe ze ze het beste kunnen gebruiken in sommige situaties, moet nog verder onderzocht worden.

Tot slot

Het onderzoek dat in dit proefschrift beschreven staat, heeft op verschillende manieren een steentje bijgedragen aan het begrip van proactieve coping processen. Zowel in theoretisch als empirisch opzicht is dit één van de eerste pogingen om meer inzicht te krijgen in hoe mensen van middelbare en oudere leeftijd zich voorbereiden op het ouder worden en hoe het proberen voorkomen of veranderen van de moeilijke kanten van het ouder worden kan bijdragen aan levensgeluk op oudere leeftijd.

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Appendices

Appendix A

The following three vignettes were used in the vignette study (chapters 3 and 5). The vignettes printed here represent the male version; for the female version 'Mr.' was replaced by 'Mrs.', 'man' by 'woman', and 'he' was replaced by 'she'.

Vignette 1 (Health)

Imagine Mr. Hendricks' situation. Mr. Hendricks is an active man of your age. Over the last year he has noticed that he is getting less supple. He is also suffering from some so-called "old people's complaints", such as finding it more difficult to rise from a chair. Nevertheless, Mr. Hendricks can do everything he used to do, but he does it less easily and often less energetically. These days, he sometimes thinks about the possibility that this situation will not improve in the short term. It is even possible that it will get worse in the future.

Vignette 2 (Social Relationships)

Imagine Mr. Miller's situation. Mr. Miller is an active man of your age. He is satisfied with the social relationships he has, especially now that he has more time to see and talk to his friends and family. Nevertheless, he has noticed that everyone's life is changing. Most people are about to retire or have already retired and the children have grown up and started their own lives. So, Mr. Miller sometimes thinks about the possibility that he and the people around him may grow apart, as everyone goes his or her own way and becomes occupied with different things. Next thing you know, they will only be seeing each other at birthday parties!

Vignette 3 (Personal Finance)

Imagine Mr. Brook's situation. Mr. Brook is an energetic man of your age. He believes he has enough money to get by. He also believes he has enough money to engage in enjoyable activities and to buy nice things. Now he is getting older, Mr. Brook sometimes thinks about the possibility that at some point in the future he may have less money to spend each month. Although he will manage, he will not be able to do so much or buy so many nice things anymore.

Appendix B

The following four manipulations were used in the experiment (chapter 6).

Long-term and no control (group 1):

Research has also shown the following. Many older people are only suffering from poor health at an advanced age. So, it is possible that you too will not be healthy at that age. Then, it is likely that you will no longer be able to achieve your goals.

Whether you will be healthy or not at that age will mainly depend on your genes. So, you won't be able to do much about it.

Long-term and control (group 2):

Research has also shown the following. Many older people are only suffering from poor health at an advanced age. So, it is possible that you too will not be healthy at that age. Then, it is likely that you will no longer be able to achieve your goals.

Whether you will be healthy or not at that age will mainly depend on your own actions. So, you will be able to do something about it.

Short-term and no control (group 3):

Research has also shown the following. Many older people are already suffering from poor health at a relatively young age. So, it is possible that you too will not be healthy at that age. Then, it is likely that you will no longer be able to achieve your goals.

Whether you will be healthy or not at that age will mainly depend on your genes. So, you won't be able to do much about it.

Short-term and control (group 4):

Research has also shown the following. Many older people are already suffering from poor health at a relatively young age. So, it is possible that you too will not be healthy at that age. Then, it is likely that you will no longer be able to achieve your goals.

Whether you will be healthy or not at that age will mainly depend on your own actions. So, you will be able to do something about it.

Appendix C

The stimuli presented in the table below were used in the Emotional Stroop Task (chapter 6); matched neutral words are next to the negative or positive words (with a translation in English).

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
	<i>Practice</i>	<i>Neutral</i>	<i>Negative</i>	<i>Break</i>	<i>Neutral</i>	<i>Positive</i>
	<i>Block</i>	<i>Block</i>	<i>Block</i>		<i>Block</i>	<i>Block</i>
<i>Duration</i>				20 s		
<i>Feedback</i>	Yes	No	No		No	No
<i>Delay</i>	400 ms	500 ms	500 ms		500 ms	500 ms
<i>Stimuli</i>	YYYYY	ELK (each)	OLD (old)		TINT (tint)	TAAI (tough)
	GGG	SMAL (narrow)	STIJF (stiff)		KAPSTOK (hallstand)	KRACHTIG (vigorous)
	Oooo	LIJN (line)	MOE (tired)		KAART (card)	STERK (strong)
	WWW	DIEP (deep)	ZIEK (ill)		VUUR (fire)	RUST (rest/peace)
	CCCCCC	KETEL (boiler)	KWAAL (complaint)		VINDER (finder)	VITAAL (vital)
	XXXX	BRINK (farmyard)	BROOS (frail)		MAT (mat)	FIT (fit / well)
	AAA	ZOAL (≈ kind of things)	ZWAK (weak)		DIVERSE (various)	GEZOND (healthy)
	SSSS	OOSTKUST (east coast)	ONGEZOND (unhealthy)		WILD (wild)	WIJS (wise)
	PPPPPP	TRAM (tram)	TRAAG (slow)		VAST (fixed)	VRIJ (free)
	KKK	PAK (suit)	PIJN (pain)		KRAGEN (collars)	KRANIG (brave)

Dankwoord

(Expression of Thanks)

Traditioneel wordt een proefschrift altijd afgesloten met een dankwoord. En dat is ook niet zo verwonderlijk, want wetenschap bedrijf je nu eenmaal niet in je eentje. Daarnaast zijn we zeker in de psychologie nog eens erg afhankelijk van mensen die, vaak in hun vrije tijd, mee willen werken aan ons onderzoek, zodat we onze, achter de computer bedachte ideeën ook daadwerkelijk kunnen toetsen.

Als eerste wil ik dan ook alle mensen bedanken die aan één van mijn studies hebben deelgenomen of aan één van de pilot studies voorafgaand aan het 'echte' onderzoek hebben meegewerkt of er commentaar op hebben geleverd. Zonder hen was dit proefschrift er sowieso niet geweest.

Het proefschrift was er ook niet geweest zonder prof. dr. Denise de Ridder die als dagelijks begeleider en later ook als promotor mij de beginselen en de kunsten van het vak heeft bijgebracht. Denise, dankjewel voor alles. Je bent een no-nonsense en kritische, maar ook rechtvaardige en gepassioneerde leermeester en ik heb het gevoel dat ik daadwerkelijk veel van je heb geleerd. Dankjewel ook voor de vele kansen die je me hebt geboden. Ik heb bewondering voor het feit dat jij als wetenschapper niet alleen in je eigen straatje blijft hangen, maar juist ook multidisciplinair kunt denken en ik hoop dan ook in de toekomst met je te kunnen blijven samenwerken.

Ook prof. dr. Jozien Bensing wil ik hier graag speciaal bedanken. Jozien, hoewel je door allerlei omstandigheden wat minder bij het project betrokken was, heb ik je begeleiding altijd als prettig ervaren. Ik voel me gestimuleerd en gesteund door jou. Ook was het heerlijk om af en toe eens te horen dat ik als AiO gelukkig nog niet alles hoefde te kunnen en te weten. Bovendien ben je een bron van inspiratie als ik zie hoe je je er zelfs in moeilijke tijden doorheen weet te slaan en je vak blijft uitoefenen. Ik wens je natuurlijk nog steeds veel sterkte voor de komende tijd.

De leden van de leescommissie wil graag bedanken voor de tijd die ze hebben gestoken in het lezen en beoordelen van mijn manuscript. Dit zijn prof. dr. M.A.G. van Aken, prof. dr. M.A. van den Hout, prof. dr. C.M. Knipscheer, prof. dr. R. Sanderman, en prof. dr. G. Schrijver.

Zonder de hulp van verschillende afstudeerstudenten had ik nooit zoveel onderzoek kunnen doen. Zij hebben veel uitvoer- en invoerwerk van me overgenomen. Dit waren Marlies Brinkman voor de focusgroep studie, Bianca Hesdal, Klaske van Loon, Anoeke Spitsbaard en Marie-Janne van Toorn voor de vignettenstudie, en Barbara Kooijman en Irene Lergner voor het experiment. Dankjulliewel allemaal!

François Schellevis en Gert Westert van het NIVEL wil ik graag bedanken voor de soepele samenwerking aan het begin van mijn AiO-tijd wat betreft de data van de Tweede Nationale Studie. Lizet Hoekert en Willemijn Corver van het P&H-bureau wil ik heel erg bedanken voor alles wat zij voor de AiO's doen. En Clariet natuurlijk voor het ontwerpen van de kaft en de uitnodigingen. Ik vind het echt heel mooi geworden!

De (oud-)leden van de StiTch onderzoeksgroep wil ik graag bedanken voor het lezen en becommentariseren van mijn conceptartikelen en de gezellige StiTch-uitjes en

dans- en kroegmomenten op congressen. Een speciaal woordje van dank wil ik daarbij richten aan Christina Bode. Christina, ik was erg blij dat jij me na verloop van tijd kwam vergezellen als post-doc op hetzelfde, pittige onderwerp. Ik heb veel gehad aan je ideeën (ook al zijn we het nog steeds niet eens over proactieve coping...) en ik kijk met veel plezier terug op onze discussies. En daarnaast vind ik je gewoon een tof mens.

Ook alle mensen van de capaciteitsgroep Gezondheidspsychologie wil ik bedanken voor de jarenlange gezelligheid. Ik ben er echt van overtuigd dat ik in één van de geweldigste vakgroepen van de UU heb gewerkt. Dank voor de inspirerende discussies en leuke gesprekken tijdens de lunch, en de boottochtjes en culturele kerstavonden! Dat het beeld van de eenzame AiO alleen zwoegend op een zolderkamertje niet hoeft te kloppen, heb ik wel te danken aan alle andere AiO's die onze vakgroep rijk was en is. Ercolie, Henriët, Junilla, Annet, Paula, Eelco, Marije, Raymond, Saar, Jan (hoort er toch ook nog steeds een beetje bij), Bart, Mieke, Saskia, Maaïke, Paul, dankjulliewel voor de AiO-etentjes, tennispartijen, dansavondjes en alle andere leuke dingen!

En dan mijn paranimfen. Lieve Ercolie, ik heb het hele proces van promoveren met jou van A tot Z mogen beleven. En ik was blij dat jij het was! Ik vind het dan ook fantastisch dat ik ook dit allerlaatste stukje met jou naast me ga beleven. Dankjewel voor je steun en interesse en ik hoop dat ik ook jou een beetje van steun heb mogen zijn. Lieve Cathelijne, ik kan me niet voorstellen dat iemand anders dan jij tijdens m'n promotie naast me zal staan. We zijn al jarenlang vriendinnen en ik hoop dat we dat nog lang zullen blijven. Ik kijk al erg uit naar de dag dat jij hetzelfde zult meemaken.

Zonder iemand van mijn andere vrienden of (schoon)familieleden tekort te willen doen, wil ik tot slot nog mijn moeder, mijn vader, Lenneke en Joep, en Annemieke bedanken. Mama, dankjewel dat ik bij jou altijd al mijn 'zeur'-, maar ook leuke verhalen kwijt kan. Was eigenlijk best gezellig dat vele bellen, hè? Papa, dankjewel voor je steun op vele manieren. Zussie Lennie en Joepie, jullie horen gewoon bij mij. Annemieke, binnen de Petrignani-clan voelde ik zeker de afgelopen tijd toch wel een speciale band met jou, omdat jij als geen ander weet hoe het is om te promoveren. Gelukkig voor ons en de familie hebben we nu beiden onze 'scriptie' af en kunnen we eindelijk 'afstuderen' en aan een 'echte' baan beginnen. Of zullen we toch nog maar even doorgaan?!

En mijn laatste woorden zijn natuurlijk voor Frédéric, omdat partners nou eenmaal alles het meeste meebelevan. Ook de negatieve kanten van het promoveren, zoals wisselende stemmingen, teleurstellingen en andere soorten chagrijnigheid. Dus sweetie, dankjewel voor je luisterend oor, maar ook voor je peper-in-de-reet opmerkingen en je humor, dankjewel voor je vertrouwen, dankjewel voor je rust en je liefde, maar bovenal dankjewel dat je er gewoon bent!

Carolijn

Curriculum Vitae

Carolijn Ouwehand werd geboren op 4 augustus 1977 in Rotterdam, maar groeide op in Oss waar zij in 1995 haar Gymnasium β diploma behaalde aan het Titus Brandsma Lyceum. In datzelfde jaar ging zij Gezondheidswetenschappen studeren aan de Universiteit Maastricht. Een jaar later begon zij ook aan een studie Psychologie. Tijdens haar studie is zij tweeëneenhalf jaar werkzaam geweest als student-assistent bij de vakgroep Psychiatrie & Neuropsychologie en twee jaar als tutor Statistiek. Daarnaast was zij penningmeester en vervolgens voorzitter van het landelijke bestuur Psychologiestudenten van het Nederlands Instituut van Psychologen (NIP). In de zomer van 2000 rondde zij haar beide studies af met als afstudeerrichtingen Geestelijke Gezondheidskunde en Neuropsychologie. In september van dat jaar is zij als AiO begonnen bij de capaciteitsgroep Gezondheidspsychologie van de Universiteit Utrecht op het onderzoeksproject dat uitmondde in dit proefschrift. Haar activiteiten bij het NIP continueerde zij nog tot 2003 als vice-voorzitter in het eerste bestuur van de Werkgroep Onderzoekers in de Psychologie. Ook is zij een tijdlang redactielid geweest van de newsletter van de onderzoeksschool Psychology & Health. In de toekomst hoopt zij financiering te vinden voor haar eigen onderzoeksvoorstel.

