

Social Indicators Research Series 51

Anastasia Efklides  
Despina Moraitou *Editors*

# A Positive Psychology Perspective on Quality of Life

 Springer

# A Positive Psychology Perspective on Quality of Life

# Social Indicators Research Series

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## Volume 51

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Anastasia Efklides • Despina Moraitou  
Editors

# A Positive Psychology Perspective on Quality of Life

 Springer

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# Chapter 1

## Introduction: Looking at Quality of Life and Well-Being from a Positive Psychology Perspective

Anastasia Efklides and Despina Moraitou

### 1 Introduction

When the construct of *quality of life* (QoL) was introduced in the 1980s, the goal was to measure the impact of health problems on people's everyday life (Power 2003). Since then, QoL has come to be used as an umbrella term that covers all aspects of human life – for example, physical and mental health, psychological state (cognitive and emotional), social relations, economic condition, recreational possibilities, and occupational life. QoL is an evaluative judgment based on objective and/or subjective indicators of one's physical, cognitive, and emotional state and of one's social life in various contexts (Costanza et al. 2008; Oort et al. 2005). At the individual level, subjective well-being (SWB) is a potent indicator of the quality of one's life. It capitalizes on one's emotional state (e.g., happiness) and perception of different aspects of one's life, whether they meet the person's standards or expectations about their life.

Recent research on QoL follows two different lines: one that utilizes objective, quantifiable socioeconomic and international development criteria to measure factors that impact health-care systems and even the ecological state of countries in the world (see Yonk and Reilly 2012). The other line of research has been developed, in part, on the basis of the observation that objective indicators of QoL assess the opportunities that a person or a group has to *improve* QoL rather than QoL itself (Costanza et al. 2008; Kaufmann et al. 2008). Thus, this kind of research is capitalizing on subjective indicators such as self-reported levels of happiness, life satisfaction, and fulfillment of one's expectations about their life. This is perceived QoL as indicated by the subjective well-being (SWB) of a person or a group of people (Costanza et al. 2008; Diener and Lucas 1999).

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Although QoL and SWB share commonalities, QoL research is drawing mainly from situations that undermine or endanger quality, whereas work on SWB has been developed in the context of healthy, everyday life. Diener (2000) defined SWB as general evaluation of one's quality of life that consists of the following three, widely accepted, components: (1) a cognitive appraisal of how good one's life has been (life satisfaction), (2) the experience of elevated levels of pleasant emotions, and (3) the experience of relatively low levels of negative emotions. Such a definition of SWB allows the use of the terms happiness and SWB interchangeably (see Diener 2000). SWB in the sense of happiness reflects the *hedonic* aspect of quality of life. Recently, Seligman (2011) proposed a SWB model that includes five components: positive emotion, engagement, accomplishment, meaning, and relationship. This model of SWB, as well as some older ones (see Keyes and Lopez 2002), is highlighting the *eudaimonic* aspect of SWB. This means that people feel happy and satisfied if they have purpose in life, experience growth and fulfillment, and satisfy their need for autonomy, competence, and affiliation (Costanza et al. 2008; Delle Fave et al. 2011). In this vein, SWB can be conceived of as the outcome of the development of individual strengths and virtues as the positive psychology movement posits (Peterson and Seligman 2004).

Positive psychology has emerged as a meta-theoretical framework to the study of QoL and subjective well-being as hedonic or eudaimonic happiness. Positive psychology stresses the importance of personal resources such as positive affect and human strengths and virtues (Seligman and Csikszentmihalyi 2000). Within this framework, different theoretical approaches to the conceptualization of what constitutes a "good life" or a life well-lived (Keyes and Haidt 2003) have been developed, and a series of human strengths and virtues have been proposed as psychological qualities that contribute to good life. However, since positive psychology is a relatively recent framework, it still has much to gain from research on psychological qualities that serve as candidate human strengths and virtues (Richardson and Guignon 2008). Specifically, the differentiation of hedonic and eudaimonic well-being has raised a fruitful debate on what "authentic" happiness is (Delle Fave et al. 2011). For example, Seligman, Peterson, and their colleagues (Peterson et al. 2005) proposed three pathways to authentic happiness: *pleasure*, which mainly involves enjoyable, positive experiences; *engagement*, which refers to being actively involved in life and all that it requires and demands; and *meaning*, which involves the use of one's strengths in activities perceived to contribute to the common good.

## 2 The Book

As indicated above, and despite the differences among the three theoretical traditions, namely, QoL, SWB, and positive psychology, it is possible to find the common ground they share, and each of them can benefit from notions developed by the others. The aim of this book is to bring together these three theoretical

traditions, show the interactions of variables envisaged by them, and give an integrative perspective from the positive psychology point of view. Specifically, the book chapters extend the range of life situations in which one can look for SWB or QoL by including, besides health, economic life, school life, marital relations, or lifespan development. They also include notions that have already attracted interest in the context of each research tradition and extend the range of psychological qualities that can be characterized as human strengths or virtues. Thus, the book chapters refer to (a) notions such as interest, engagement, resilience, wisdom, hope, and optimism that represent unique human strengths (Peterson and Seligman 2004); (b) constructs such as goals and motivation that connect SWB with self-regulation and the management of one's life priorities; and (c) present research on psychological qualities and behaviors that are primarily connected to interpersonal relationships and "community," such as religiosity, altruism, marital satisfaction, and their relation to QoL.

Furthermore, there are review chapters as well as empirical research chapters that present evidence supporting or disputing claims on the beneficial effects of positive psychological qualities on SWB. For example, if SWB is homeostatically regulated, then how effective can interventions inspired by positive psychology for the increase of SWB be? If optimism is beneficial for health, does this effect generalize to all health problems? Is resilience affected by personal characteristics only or by cultural and social factors as well? Is hopeful thinking always beneficial, or can it undermine a careful analysis of a situation and use of appropriate strategies? Is altruism beneficial for the others or for the self as well? Can altruism undermine well-being rather than support it? Is interest, as personal and situational characteristic, and engagement stable, or do they change in critical periods of a person's life? These and other questions are posed, and evidence cautioning us on the complexity of the phenomena related to QoL, SWB, and positive psychology constructs is presented.

More importantly, the chapters of this book make a systematic effort to lighten the mechanisms underlying SWB, QoL, and the potential positive effects of positive psychological qualities on SWB or QoL. For example, a fundamental question regarding SWB pertains to the determinants of happiness (Chap. 2 by Drakopoulos, this volume). Basic needs satisfaction is important but is it critical? Income comparison becomes more important after a certain income level. Moreover, are environmental factors such as income comparison the only sources of SWB? According to Cummins (Chap. 5, this volume), there be innate factors that influence happiness or mood. But if innate, environmental or social factors interact, how are these interactions being shaped? For instance, motivation is particularly important for SWB. Goals, planning (Chap. 3 by MacLeod, this volume), and the congruence between implicit motives and explicit goals (Chap. 4 by Hofer & Busch, this volume) affect SWB. The next question then is if motivation can be reduced to basic needs, such as needs for competence, autonomy, and relatedness, and if these needs suffice to explain the multiple manifestations of hedonic or eudaimonic SWB. Obviously, human behaviors and personal attributes can serve a variety of motives at the same time and lead to different subjective experiences and

judgments about the quality of one's life or SWB. For example, religiosity (see Chap. 6 by Platsidou, this volume) takes different forms (e.g., belief in God and participation in church activities) and serves different needs (e.g., meaning in life or social participation and sense of belonging); hence, there should be multiple pathways through which each form of religiosity contributes to SWB. Similarly, altruism (see Chap. 7 by Schwartz, Quaranto, & Gray, this volume), when embedded in one's value system, can serve both eudaimonic and hedonic SWB of the person, although it is behavior that is primarily aimed to serve the needs of others. This implies that offering or giving support to others can be as beneficial as receiving support. Receiving support is highly important in interpersonal relationships (Chap. 8 by Petaraki & Roussi, this volume) and can help make people more resilient in face of adversity (Chap. 15 by Leontopoulou, this volume).

Another issue this book aimed to bring to the fore pertains to the extent to which there are determinants of QoL and SWB that can be considered positive psychological qualities or traits. Optimism is one such trait. However, there are also others, such as wisdom, hope, interest, or engagement. What is the mechanism through which these positive person characteristics impact well-being? In the case of optimism, one could argue that its role is to support expectations of positive outcomes of one's actions (see Chap. 10 by Karademas, Frokkai, Tsotra, & Papazachariou, this volume; Chap. 9 by Rius-Ottenheim, van der Mast, Zitman, & Giltay, this volume). This may affect the goals selected but also persistence in one's pursuit. But as Karademas et al. show, optimism is acting in accordance with a broader network of beliefs regarding, for instance, illness. Rius-Ottenheim et al. point out that the mechanism may even involve biological processes. Therefore, although there is an understanding of the situations in which optimism can be effective and increase QoL, there is still much to learn about the ways through which this is achieved. A similar conclusion could be drawn in relation to hope, another positive psychological quality, which has not been extensively studied in the past (Chap. 11 by Moraitou & Efklides, this volume; Chap. 12 by Papantoniou, Moraitou, Dinou, & Katsadima, this volume). Hope can be conceived of as an affective variable that enables the person to take action even when the chances for achieving something are small. It also takes the form of hopeful thinking that enables the person to figure out and use pathways to achieve their goal because they feel they can do it (agency). Moreover, it interacts with self-regulation and use of strategies. From this point of view, hope is more related to volition and action than to motivation. It is an asset that can support "wise" decisions and action, particularly as people grow older and physical and cognitive rigor may diminish. However, unjustified hope can also constrain one's efforts through the use of unproductive self-regulation. Finally, another cognitive-affective person characteristic that can enhance SWB through active information seeking and building of schemas that facilitate development and progress is interest and its behavioral manifestation, engagement (see Chap. 13 by Ainley, this volume; Chap. 14 by Salmela-Aro, this volume). Interest has been studied in the context of emotions or motivation and less so from the point of view of positive psychology. However, interest and engagement broaden the person's perspectives, facilitate adaptation, and, consequently, promote well-being.

To sum up, this book comes to complement the related literature on QoL or SWB and goes beyond objective indicators. Its emphasis is on psychological factors that have been discussed in the context of positive psychology and have a bearing on SWB or QoL. The evidence covers different age groups (from children to older adults), healthy people and people facing health problems, people with different cultural background as well as people and people facing problems in their interpersonal lives or in their pursuits. This variability in the groups studied provides not only a wealth of findings but also the possibility to identify mechanisms that are strong and present across groups or specific to some of them only. In what follows, we are introducing the organization of the chapters and their content.

## ***2.1 Organization of the Book***

This book is organized in two parts. Part I is addressing issues related to SWB, QoL, and positive psychology. It includes chapters that focus on potential mechanisms that underlie the association of SWB with QoL, both at the individual and social level. Positive psychology notions are also examined as to their potential to explain QoL or SWB. Part II chapters examine the relationships between widely acknowledged character strengths and QoL.

## **3 Part I. Subjective Well-Being, Quality of Life, and Positive Psychology**

One of the most important topics of research on SWB, measured as self-reported happiness, is the study of the relationship between income and happiness levels. A relatively common finding of many empirical studies on this issue is that substantial increases in real per capita income do not correspond to equivalent increases of individual happiness. Moreover, there are findings suggesting that there is a negative association between real income and happiness levels, known as the Easterlin or happiness paradox (Phelps 2001). In Chap. 2, entitled “Hierarchical Needs, Income Comparisons, and Happiness Levels,” Drakopoulos is offering a theoretical explanation of the happiness paradox. His account is drawing on the concept of needs hierarchy that originated from Maslow (1954). The basic argument is that secondary needs become important once the primary ones have been satisfied. However, needs satisfaction does not necessarily entail happiness because people judge their life by comparing their income to that of others (Clark and Oswald 1996). That is, individuals do not extract much happiness from their absolute income but from their position compared to other people’s income. According to Drakopoulos, the theoretical implication of the combination of these two concepts (needs hierarchy and comparison income) is that income is

important for happiness up to the satisfaction of basic needs. People start comparing their income after basic needs have been satisfied, and thus, further increases of income do not result in equivalent increases of happiness because people focus more on comparisons rather than on their absolute income. Besides needs, goals are also central in accounts of motivation. Goals are hierarchically organized and control behavior through planning. Plans are the designs we construct to guide our attempts to achieve a goal in a given context (Scholnick and Friedman 1993). Goals impact QoL or well-being. The link between goals, plans, and well-being is the focus of Chap. 3, entitled “Goals and Plans: Their Relationship to Well-Being.” Macleod, the author, argues that goals by themselves are not sufficient to gain a well-being benefit; there needs to be a feeling of progress toward our goals and a sense that we can achieve them that gives rise to an experience of anticipatory enjoyment. Moreover, goals should fit the person’s underlying motivation and serve the basic needs of autonomy, competence, and relatedness. A deficit in approach goals, that is, goals with a positive outcome prospect, and an inability to disengage from unproductive goals and engage with alternative ones can harm well-being. Over- and under-activation of the goal system can also have implications for well-being. With regard to planning, although research is only beginning to emerge, it seems that both self-reported propensity to plan and planning ability are positively related to well-being. Macleod proposes that enabling goal progress and reinforcing a sense of control over the environment are plausible mechanisms through which goals and planning influence well-being.

The importance of motivation, and particularly goals, is also stressed by the authors of Chap. 4, namely, Hofer and Busch. They focus on implicit motive–explicit goal congruence as a precondition for well-being. The authors provide an overview of the present state of cross-cultural motive–goal congruence research. The chapter is entitled “Living in Accordance with One’s Implicit Motives: Cross-Cultural Evidence for Beneficial Effects of Motive–Goal Congruence and Motive Satisfaction.” Based on a review of empirical studies conducted in Euro-American cultures, Hofer and Busch conclude that research on motive–goal congruence suggests that pursuance of a goal is more emotionally satisfying when this goal is in line with the person’s implicit motive structure than when it does not. Implicit motives are defined as affective preferences for situations that feature specific incentives, energize and direct spontaneous action and long-term behavioral trends, and operate outside of conscious awareness and control (McClelland 1987). Hofer and Busch present cross-cultural studies that establish the generality of the phenomenon of motive–goal congruence and the implications for well-being. Indeed, the findings from these studies show that commitment to and realization of goals that satisfy implicit motives are associated with a series of indicators of the hedonic dimension of well-being. Conversely, lack of satisfaction of implicit motives seems to result in well-being impairment, negative emotional experiences, and lower levels of mental health. Thus, answering to the main positive psychology’s question, that is, “what makes people happy?” Hofer and Busch claim that the structure of implicit motives can be considered a human strength. People differ in their implicit motives, and this differentiates which

positive experiences will have the greatest impact on their well-being. As such, living in accordance with one's implicit motives is an asset that has a positive influence on QoL.

The next chapter refers to the association between positive psychology and SWB from the standpoint of the SWB homeostasis theory (Cummins 2010). Specifically, in Chap. 5, entitled "Positive Psychology and Subjective Well-Being Homeostasis: A Critical Examination of Congruence," Cummins puts forth the viewpoint that SWB, in the sense of mood, is homeostatically regulated. The theory proposes that SWB is actively controlled by automatic neurological and psychological processes in a manner analogous to the homeostatic maintenance of body temperature (Cummins and Nistico 2002). The role of SWB homeostasis is to maintain a positive sense of well-being that is generalized and quite abstract. The essence of SWB is a deep, stable, positive mood state. In order for this positive mood state to be maintained, levels of SWB are actively regulated to remain within a set-point range for each individual. This implies that efforts to shift SWB above or below this range will be resisted. Based on the examination of empirical evidence coming from a selected group of influential intervention studies, Cummins concludes that the specific benefits claimed by positive psychology interventions have been greatly exaggerated. Considering what homeostasis theory proposes, one could easily explain why positive psychology interventions that usually involve enhancement of a specific human strength or virtue are likely to be effective for people with abnormally low SWB and ineffective for people with normal range SWB. Cummins' critical stance toward empirical studies on positive psychology interventions, however, cautions us on the importance of the strict methodology needed so that the true extent of positive outcomes can be unquestionable.

In the last two decades, research has identified a host of factors that influence SWB and QoL. They range from demographic factors such as SES, marital status or gender to age, perceived (and actual) health state, factors related to social life, sense of belonging to a community, and quality of interpersonal relationships (Diener 2000). In this line of research, Platsidou presents in Chap. 6 an empirical study that tested a model regarding predictors of SWB as life satisfaction. The model involves religiosity, which has been associated with eudaimonic well-being – in the sense that religiosity gives meaning in life (Ryan and Deci 2001) – and with health-related QoL. The latter is defined in terms of worry, as an indicator of mental health state, and perceived physical health state. The chapter is entitled "Life Satisfaction in Adults: The Effect of Religiosity, Worry, and Perceived Physical Health State." Platsidou identifies three dimensions of life satisfaction, that is, personal/emotional life satisfaction, satisfaction with one's social life, and goal-related life satisfaction. The model includes variables that represent two aspects of religiosity, namely, belief in God and involvement in religious practices, as well as worry and perceived health state. Overall, the findings of the study suggest that religiosity influences life satisfaction both directly and indirectly through worry. Religiosity as belief in God was associated with higher levels of personal/emotional life satisfaction, possibly because faith can provide meaning in life. It was also associated with higher levels of



goal-related life satisfaction. Religiosity as involvement in religious practices was related to higher levels of social life satisfaction, probably because attending church activities offers a sense of being member of a community. Higher levels of perceived physical health were associated only with higher levels of personal/emotional life satisfaction and mediated the effects of worry on this dimension of life satisfaction. Religiosity as belief in God was associated with lower levels of worry, possibly as a means of coping with distress. Thus, religiosity effects on SWB cannot be reduced to meaning in life because it serves other functions as well.

A psychological quality that is expressed as social interest behavior and can provide purpose in life is altruism. According to Schwartz (2010), altruism refers to behaviors and attitudes that are focused on helping others. Helping can be realized as (a) emotional support behaviors, (b) general helping behaviors, (c) having a worldview that values being helpful and kind to others, and (d) having the capacity to help others without feeling burdened by their needs or wishes. In Chap. 7, entitled "Altruism and Health: Theoretical Perspectives," Schwartz, Quaranto, and Gray discuss the possible mechanisms through which altruistic behaviors influence health and, hence, health-related QoL. Drawing on response shift theory, social network theory, and the concept of social environment, Schwartz et al. present empirical data from a series of studies designed on the basis of a promising theoretical model that focuses on the internal changes that might impact perceived QoL or health (Schwartz et al. 2009). According to this model, altruistic behavior facilitates outward projection and disengagement from self-reference by focusing on others. By so doing, one formulates a different, more positive perspective toward their life challenges. This disengagement from personal worries enhances perceived QoL in the face of disability or pain. In healthy adults, altruism is associated with higher levels of mental health, above and beyond the benefits of receiving help and other psychospiritual and demographic factors. Nevertheless, giving beyond one's resources is associated with worse reported mental health. Moreover, role expectations and a positive belief system seem to underlie and reinforce altruistic behaviors. Notably, men and women display similar levels of altruism but enjoy different benefits. Discussing their findings, Schwartz et al. claim that altruistic behaviors can eventually be connected with the broader concept of "community," suggesting that the mechanisms by which altruism influences health may be related to social ties.

Social relations are also at the heart of Pateraki and Roussi's chapter that deals with marital satisfaction and social support. In Chap. 8 entitled "Marital Quality and Well-Being: The Role of Gender, Marital Duration, Social Support and Cultural Context," Pateraki and Roussi review recent research and present data from a preliminary empirical study on marital quality and well-being. Marital quality is defined as balance between positive and negative behaviors in marriage. In the study, depression is included as an indicator of absence of well-being. Pateraki and Roussi claim that marital satisfaction has a dynamic, bidirectional "character," with cross-spousal effects. On the positive side, marital quality, defined as marital satisfaction and marital happiness, is linked with global life

satisfaction and overall happiness, and this may result from a series of specific positive aspects of marital relationship such as love, intimacy, and reassurance of one's worth. However, marital quality can be moderated by a number of factors and seems to be mediated by spousal support. The empirical study reported provided evidence that confirms the strong relationship between marital quality as marital (dis)satisfaction and depressive symptoms. Nevertheless, the study also suggests that this relationship is complex: besides spousal support, other factors such as gender, social context, social support, and the mutual influence partners exert on each other also contribute in the shaping of the relationship between marital quality and well-being.

## 4 Part II. Positive Psychology and QoL

In Chap. 9, entitled "The Role of Dispositional Optimism in Physical and Mental Well-Being," Rius-Ottenheim et al. review the large literature on dispositional optimism and its connections to physical and mental well-being. Dispositional optimism is a personality trait that refers to the extent to which an individual expect positive outcomes for their future (Carver et al. 2010). Higher optimism has been associated in the literature with better physical health and mental well-being. The question, however, is whether these benefits are real and, if so, what are the mechanisms underlying the association between optimism and QoL as physical and mental well-being. Rius-Ottenheim et al. provide the reader with an overview of current research on optimism and its relations with several biological and psychosocial markers. The main conclusions can be summarized as follows: (a) Dispositional optimism is strongly correlated to health-related QoL. Highly optimistic persons rate their health more positively and are at lower risk for cardiovascular disease than less optimistic persons. The evidence for a link between optimism and cancer, however, is less clear. The protective effect of optimism on physical health may be mediated by health-promoting behaviors but also by biological processes. (b) Optimists enjoy higher levels of well-being due to better mental health. This favorable outcome likely results from the more effective coping styles used by optimists, such as goal-oriented strategies. (c) The effects of interventions aiming at increasing optimism are not conclusive, and it remains controversial whether it is possible to lastingly change one's dispositional optimism as a personality trait.

In the "Concluding remarks and recommendations" section of their chapter, Rius-Ottenheim et al. mention that, besides the progress, it remains to be elucidated which mechanisms actually mediate the beneficial effect of dispositional optimism on health. Karademas et al. aim to illuminate one such pathway. In Chap. 10, entitled "The Relation of Optimism to Cardiac Patients' Subjective Health Through Illness Representations: Does the Level of Optimism Matter?" Karademas et al. present a research study that examined the meditational role of illness representations in the relationship between dispositional optimism and subjective health state in chronic cardiac patients. The findings suggest that in the special population

of chronic cardiac patients, health-related QoL – conceptualized as higher level of subjective health – is associated with the positive quality of dispositional optimism in a rather complex way. Actually, higher levels of optimism appear to be in any case associated with better subjective health. Yet, at average and lower levels of optimism, subjective health seems to be analogous to the type of illness representation: better at the higher levels of “positive” representations and worse at higher levels of “negative” representations.

Dispositional optimism has been related to another well-known positive psychological quality, that is, dispositional hope (Bryant and Cvenegros 2004). In fact, optimism has been found to be significantly correlated with hope. However, hope differs from optimism in that it appears to refer more directly to the attainment of specific goals, whereas optimism seems to reflect more general beliefs about positive future events. Chap. 11 deals with hope and is entitled “Wise Thinking, Hopeful Thinking, and Positive Aging: Reciprocal Relations of Wisdom, Hope, Memory, and Affect in Young, Middle-Aged, and Older Adults.” In this chapter, Moraitou and Efklides present an empirical study that connected hope in the form of hopeful thinking (Snyder et al. 1991) with wisdom, another human strength in the context of positive psychology. Wisdom has the potential to support QoL as positive and effective psychological functioning during lifespan development and aging. Moraitou and Efklides (2011) define wisdom as wise thinking consisting of three interrelated dimensions: (a) integrated-dialectical thinking, (b) practical wisdom, and (c) awareness of life uncertainty. Although the study is correlational, a series of confirmatory factor analyses showed that it was hope that affected wisdom and not the other way round. The findings of the study also suggest that affect, and mainly positive affect, directly influenced hopeful thinking and indirectly (via hope) wise thinking. On the other hand, contrary to what one would expect, memory ability was directly predicted by wisdom as integrated-dialectical thinking and indirectly, via wisdom, by hope as pathways thought. Moreover, there were positive age effects on specific facets of hope and wisdom, and the interplay between the two positive qualities has the potential to decrease negative age effects during lifespan development.

In Chap. 12, entitled “Dispositional Hope and Action-State Orientation: Their Role in Self-Regulated Learning,” Papantoniou et al. also adopt Snyder et al.’s (1991) conceptualization of hope and connect hope with a volitional characteristic, namely, action control, in the form of action–state orientation (Kuhl 1994). Hope and action orientation are goal-related constructs; Papantoniou et al. conjectured that action orientation is a candidate positive character quality that, jointly with hope, could affect QoL in learning contexts. QoL in educational contexts was defined as use of effective learning strategies and successful course attainment. The findings of the study with university students confirmed the assumption that hope and action control are interrelated constructs. Moreover, both of them are involved in top-down self-regulation as both of them appear to be associated with self-reported learning strategies use and course attainment. Among the hope and action control components, hope as agency thinking (Snyder et al. 1991) stood out as the most critical person characteristic that can impact strategy use since it was

positively related to the use of almost all of the learning strategies examined in the study. As regards course attainment, both hope and action orientation enhanced course attainment through the use of learning strategies and strategies related to time and study environment management. Nevertheless, Papantoniou et al. caution that there can be negative effects of specific facets of hope and action control on QoL in learning contexts as well, depending on the type of the task at hand.

Besides hopeful thinking, interest is another well-known human strength that is associated with wisdom. Interest is part of a group of related constructs that constitute the overarching virtue “wisdom and knowledge” (Peterson and Seligman 2004). Fredrickson clarifies that, in contrast to knowledge acquired when cynicism and boredom prevail, interest initiates exploratory behavior in the moment. This helps building knowledge and functions as a personal resource for future behavior (Fredrickson and Branigan 2005). In light of such approaches to interest, Ainley, in Chap. 13, entitled “One Ingredient in the Mix: Interest and Psychological Well-Being,” connects interest to eudaimonic well-being across the lifespan. Ainley claims that the contribution of interest to eudaimonic well-being arises from its character as motivating affective experience and from its functional significance for the onset and maintenance of information-seeking behavior. At a more general level, interest represents an organization of feelings, cognitions, and behavior that has become part of one’s personality and which orients the person to engage with the objects of those feelings, cognitions, and actions (Krapp 2003). To set interest within the context of positive psychology and highlight the processes through which interest regulates and guides behavior, Ainley explores the associations between interest and related constructs such as curiosity and enjoyment. In the next step, based on sampling research evidence from across the lifespan, she claims that interest, curiosity, and exploratory behavior are major factors in the development of cognitive–affective schemas in infancy and early childhood. These schemas underpin information-seeking behaviors that are essential for later academic adjustment. Interest is also a key component of the personal schemas through which adolescents understand themselves and confront developmental challenges. A similar picture emerges from research on motivation of adults returning to formal studies and affective processes related to life satisfaction in older adults. Ainley’s conclusion is that “when one examines the psychological makeup of productive growth promoting schemas, interest is revealed as one of the most important ingredients,” highlighting in this way its influence on well-being and especially its eudaimonic aspect.

One of the key processes through which interest influences behavior is engagement with the object of one’s interest. In the next chapter of this book (Chap. 14), entitled “From Burnout to Engagement During Transition from School to Work,” Salmela-Aro presents evidence from longitudinal studies on the differential effects of engagement, as compared to burnout, during times of transition in students’ educational career, including transitions from school to work. School burnout is conceptualized in terms of three dimensions: (a) exhaustion due to school demands, (b) cynicism toward the school, manifesting itself as a distal attitude toward and loss of interest in schoolwork, and (c) feelings of inadequacy referring to a

diminished sense of achievement and competence (Salmela-Aro et al. 2009). On the contrary, schoolwork engagement is defined as a positive, fulfilling state of mind characterized by (a) vigor, that is, high levels of energy and mental resilience as well as a willingness to invest effort in schoolwork; (b) dedication, manifested as interest in the academic work, strong involvement in studying, and a sense of enthusiasm, pride, challenge, etc.; and (c) absorption that leads to feelings of competence as well as successful achievement at school (Salmela-Aro and Upadyaya 2012). The findings of the studies suggest that both motivational factors and transitions play a role in the formation of burnout or engagement. Indicatively, the transition from comprehensive school to the next school level is a significant occasion when change in burnout can take place. Intrinsic motivation and goal progress appear to be related to a high level of engagement in upper-secondary school. A higher level of school engagement, in turn, predicts a successful educational trajectory. Increasing engagement and supporting those suffering from burnout would help students in their later educational trajectories and transition to working life. In terms of the transition from university to working life, it appears that the motivational strategies, and especially the optimistic ones, young people adopt at university predict work engagement or burnout during their early career. Salmela-Aro proposes that intervention programs can be developed to increase the levels of school-related well-being and QoL by reducing burnout and enhancing the positive mind state of schoolwork engagement.

As Ainley points out, resilience is another positive process associated with interest. Resilience is conceived as the outcome of a complex process that involves factors and mechanisms that aid people overcome adversity (Masten 2001). Such factors can be categorized as positive personal, family, and environmental psychosocial characteristics that are activated in face of negative events in a person's life. In Chap. 15, entitled "A Comparative Study of Resilience in Greece and Cyprus: The Effects of Negative Life Events, Self-Efficacy, and Social Support on Mental Health," Leontopoulou presents an empirical study on resilience in Greece and Cyprus, two related but also differing in recent historical events countries. The aim of the study was to identify the effects of personal resources, such as self-efficacy, and psychosocial characteristics of children at the verge of adolescence, such as family support, on the development of resilience under pressure of negative events. The resilience process was defined as (a) perceived adversity and/or risk, (b) adaptation under adversity indicated by both absence of psychopathology and positive development (self-esteem), and (c) availability of personal and environmental resources. Based on the findings, Leontopoulou claims that presence of adversity in the form of "actual" rather than "imagined" negative life events is critical for the triggering of the resilience process. Self-efficacy as a personal resource and mainly the availability of social support from family members as environmental resource are critical for adaptation, that is, (absence of) mental health problems and self-esteem. Cultural differences were found in the perception of negative life events and the resources invoked for the facing of adversity in the two countries.

To conclude, the chapters included in this book aim at bringing to the fore new theoretical developments and research on QoL, SWB, and positive psychology that bridge previously distinct theoretical traditions. This book covers a broad range of topics, addresses different theoretical interests, and paves the way for a more integrative approach. In this pursuit, it brings together an international set of authors, from the USA, Europe, and Australia, who enrich our conception of QoL and SWB and offer insights on the role of human strengths in the shaping of well-being.

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**Part I**  
**Quality of Life, Well-Being, and Positive**  
**Psychology**



# Chapter 2

## Hierarchical Needs, Income Comparisons, and Happiness Levels

Stavros A. Drakopoulos

### 1 Introduction

The study of happiness and well-being and their relationship with economic variables was a relatively neglected research issue for most academic economists. With a few notable exceptions such as Easterlin (1974) and Scitovsky (1976), the dominant attitude of the economics academic community was that happiness was the subject matter of other social sciences and mainly of psychology. However, in the last decade, an increasing number of economists have started to study the concept of happiness at both the microeconomic and the macroeconomic level. The recent increase of academic articles and books on happiness and economics is a clear manifestation of this current interest (see, for instance, Alesina et al. 2004; Frey and Stutzer 2000; Kenny 1999; Oswald 1997; and for a general review of the literature, Frey and Stutzer 2002a, b, and Layard 2005a).

One of the most important topics of happiness research is the study of the relationship between income and happiness levels. There have been many empirical studies which examine this relationship in many countries using a variety of micro- and macro-level data. There have also been studies that concentrate on international comparisons of happiness levels. One relatively common empirical finding is that substantial increases in real per capita income do not correspond to equivalent increases of individual happiness. Furthermore, some findings suggest that there is a negative correlation between real income and happiness levels (see, for instance, Blanchflower and Oswald 2004; Easterlin 1974, 1995; Lane 2000; Oswald 1997; Wright 2000). These empirical findings, termed usually as the happiness or the Easterlin paradox, are difficult to explain given that for most economists income has a constant positive impact on reported happiness (Bruni 2002, 2004; Phelps

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2001). As one would expect, a number of explanations have been suggested for this paradox. However, one might get an additional insight from the concepts of hierarchical needs and of comparison income.

Human needs hierarchy is an old idea, but its modern version originates from work in psychology (mainly Maslow 1954). Its basic notion is that there are primary and secondary needs and that the secondary needs become important once the primary ones have been satisfied. It can be argued that income increases for lower income levels satisfy mostly basic needs. Thus, hierarchy might explain why additional increases in income do not have significant effects on reported happiness levels.

The concept of comparison income is another idea which can also contribute to an explanation of the happiness paradox (Clark and Oswald 1996). The main thrust of the comparison income argument in the context of happiness research is that individuals do not extract much happiness from their absolute income, but from their position relative to other people's incomes. Thus, raising everybody's income might not result in an increase of general happiness.

This chapter discusses the role of the above two notions in providing explanations for the observed happiness paradox and also of studies showing a positive relationship between income and happiness up to a certain level of income. With these in mind, the second section of this chapter discusses the empirical aspects of the relationship between income and happiness. The next section provides a brief presentation of the proposed explanations of the income-happiness paradox. Sections 4 and 5 examine the hierarchical formulation and the concept of comparison income and also the way that they can contribute to the better understanding of the income-happiness relationship. A concluding section closes the chapter.

## 2 Income and Happiness

Before we proceed to an examination of the relationship between income and happiness, a short discussion of the terms that are usually employed in the relevant literature is necessary. In economic theory, the term "utility" has no psychological meaning, but it refers to individual preferences. Thus, a utility function is a numerical representation of a preference ordering. However, in the recent literature on happiness and economics, the term "utility" is again related to the original Benthamite meaning of utility which refers to pleasure and satisfaction. In this sense, the term "total utility" is equivalent to the term "life satisfaction" that is more common in psychology (Clark and Oswald 1996).

Furthermore, "life satisfaction" is often used interchangeably with "happiness," although it has been argued that the former has an advantage over the latter because it emphasizes the subjective nature of the concept (Easterlin 2001). "Subjective well-being" is also another term perceived as synonymous to the previous two, but it is not only used for satisfaction with one's entire life as a whole but also for

specific discomforts and passing moods (Veenhoven 2000). In empirical work, reported subjective well-being is taken as a proxy measure for individual welfare and of happiness (Studer and Frey 2010).

Thus, in this chapter the terms “total utility,” “life satisfaction,” “subjective well-being,” and “happiness” are used interchangeably as it is the case in most recent studies. Finally, we also follow the standard definition in the relevant literature which conceives happiness as the degree to which someone evaluates positively the overall quality of his or her present “life as a whole” (Veenhoven 2000).

Given that for many years most economists were not interested in concepts like well-being and happiness, research on happiness and its relation to economic variables was conducted by a few economists who were oriented toward the study of the social dimensions of economic growth. The pioneering work of R. Easterlin in 1974 which dealt with the relationship between income, happiness, and economic growth is a representative example of this minority attitude (see also Easterlin 2004). Gradually though, and especially in the last decade, the interest of economists in happiness has increased dramatically. There are three main reasons for this. The first has to do with the rise of positive psychology and its impact on other social science fields and thus on economics (see, for instance, Snyder and Lopez 2002). Another reason was the realization that in final analysis, the purpose of economic growth is the presumed overall increase in happiness levels. Finally, another reason that helped the promotion of happiness research was the realization that government intervention can help increase overall happiness by reducing unemployment and inequality levels (see also Layard 2005a). Thus, as one would expect, the focus of happiness research by economists is the study of the relationship between income and happiness.

Traditionally, most economists believe that income has a positive impact on happiness and this is taken as obvious and common fact. There is almost universal agreement that the main aim of economics and economic policy is the raising of incomes so as to ultimately achieve higher levels of individual and aggregate happiness. This can also explain the emphasis on economic growth given that the increase of incomes is attained through economic growth. Thus, the standard treatment found in many economic texts is to assume that life satisfaction or happiness ( $U$ ) is a function of income ( $y$ ) and that life satisfaction is raised by income

$$U = U(y) \text{ with } dU/dy > 0 \quad (2.1)$$

Many economic texts use the notions of total utility and life satisfaction interchangeably and do not provide a theoretical reason for the above relation (Atkinson and Stiglitz 1980). In spite of its wide acceptance until recently, few economists had argued that there is no straightforward relationship between the two constructs (see, for instance, Frank 1999; Scitovsky 1976). Furthermore, it has been maintained that the relation between objective (income) and subjective well-being involves complicated methodological assumptions and requires interdisciplinary work in order to be understood properly (see Gasper 2005).

Given the above, there have been a large number of empirical studies examining the income-life satisfaction relationship within a single country at a given moment in time but also across time and countries. Most studies start from the postwar period and concentrate on the US and European countries. In the last few years, other countries are also the subject of empirical investigation (see, for instance, Kenny 2005). As these specialist studies began to proliferate, two general findings have emerged. The first one suggests that the relationship between income and happiness at a particular point in time and country is positive. This implies that higher income individuals, on average, report higher levels of happiness. Given that this relationship has been tested using simple and multiple regressions from various datasets, most specialists accept it as robust (for a review, see Clark et al. 2008). This also supports the standard theoretical approach regarding the two variables.

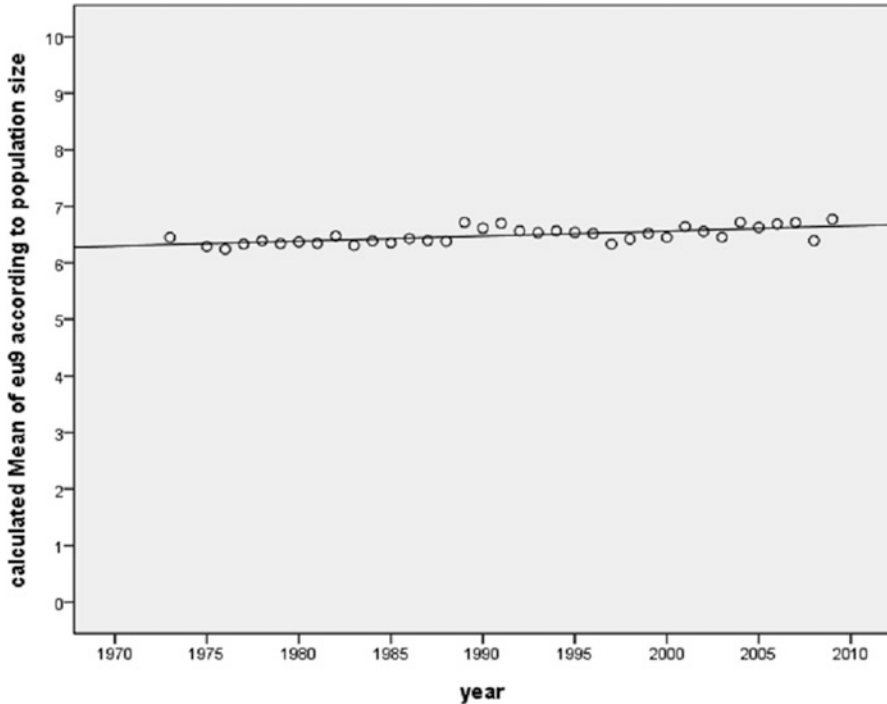
The second category of findings, however, was not in the direction of the theoretical expectations. In particular, many studies have indicated that increases of income over time do not correspond to equivalent increases in reported happiness (see Layard 2005b). Furthermore, the income-happiness correlation across developed countries is very problematic revealing weak or zero income effects on happiness (Frey and Stutzer 2002b). Clearly, the second set of findings is difficult to be reconciled with the first and with the standard theory, and for this reason, it has been called the “paradox of happiness” (Bruni 2002).

One of the first studies to identify the paradox was Easterlin’s (1974), and for this reason, it is also known as the “Easterlin paradox.” Easterlin’s study is based on post-World-War II US time-series data and shows that although real per capita income has risen dramatically, there is no definite trend on self-reported happiness level. This finding also holds for more recent studies. More specifically, many studies indicate that there has been no improvement in happiness in the USA for over almost half a century although real income per capita more than doubled (Easterlin 1995; Maddison 1991). The findings for Japan are even more strange given the tremendous rise in real income. Although Japanese income increased by almost five times, there was no improvement in mean subjective well-being (Easterlin 1995; Inglehart and Rabier 1986). Similar results hold true for many European countries. There is almost no trend in a period where real income per capita rises within all these countries from 25 to 50% (Blanchflower and Oswald 2004; Easterlin 1995; Kenny 1999). Figure 2.1 presents the trend of life satisfaction in nine European countries.

However, the empirical evidence for less developed countries is more in line with the theoretical expectations. A survey of 22 countries indicates that the higher the gross national product, the lower the correlation between happiness and income (Veenhoven 1991). More recent data from a world survey of country data shows that additional income provides more happiness at low levels of economic development (Frey and Stutzer 2002b).

With these empirical results in mind, some authors such as Easterlin (1995), Lane (2000), and Veenhoven (1991) have suggested that the relationship between income and happiness might be curvilinear. As Frey and Stutzer (2002b) state:

Income provides happiness at low levels of development, but once a certain threshold has been passed, income has little or no effect on happiness. (p. 75)



**Fig. 2.1** Trend average happiness in EU9 nations (Weighted average of the first nine member states of the European Union 1973–2009; The population weights are about as follows (1995): Belgium 0.037; France 0.215; (West)Germany 0.234; Ireland 0.015; Italy 0.207; Luxembourg 0.002; The Netherlands 0.058; Denmark 0.019; The United Kingdom 0.212; Source: Veenhoven 2011)

This is also supported by the fact that for US data, there is a positive correlation between income and happiness up to the average income level of US \$10,000 (see Frey and Stutzer 2002b). Relative to this, the US population who felt “very happy” peaked in 1957 and has decreased since then, although real income has been increasing continuously (Schor 1991). Furthermore, many cross-sectional empirical studies indicate that more developed countries do not report higher happiness levels once GDP per capita exceeds half that in the USA in mid-1990s (see, for instance, Helliwell 2003; Kenny 1999). In a similar vein, there is evidence that when a country’s income per head is below the threshold level of \$15,000, countries with higher per capita income seem to be happier than those with lower per capita income (Layard 2005b). In general, the curvilinear nature of the income-happiness relationship is currently recognized by many specialists, and it is also supported by many empirical studies (for a review, see Inglehart et al. 2008). However, there is no universal agreement for a theoretical explanation of the curvilinear relationship, but, as we shall see, the hierarchical and the income comparisons approaches might serve as a basis.

### 3 Explanations of the Paradox

Given the controversial nature of the relationship between income and happiness over time and also of the cross-country studies, it is not surprising that there have been a number of explanations regarding the paradoxical relationship between income and happiness. As one would expect, one reaction was to challenge the empirical findings. Stevenson and Wolfers (2008), for instance, dismiss the long-term evidence for Japan as a result of changes in survey questions. However, many specialists seem to agree that many of the above empirical findings concerning the paradox have stood many reliability tests using various econometric methods (Blanchflower and Oswald 2004; Ferrer-i-Carbonell and Frijters 2004; Myers and Diener 1995). A similar criticism focuses on the semantic aspect: the meaning of the word “happiness” might differ among languages. However, research using bilingual and multilingual participants as well as different stated preference ranking measures suggests that language is not a significant factor (Cummins 2003; Layard 2005a; Veenhoven 2000).

Apart from the above reactions, researchers have attempted to tackle the paradox by focusing on the components of happiness. More specifically, they argue that a number of noneconomic and economic variables affect the level of happiness (Frey and Stutzer 2002a, b). Such variables can be social capital, relational goods, lacking of goals, economic inequality, and unemployment, among others. In particular, it has been pointed out that the deterioration of social capital (trusting people, friendship) in many advanced countries might be a crucial factor for the paradox of happiness (Bjornskov 2003; Putnam 2000). Similar to this line of explanation is the idea of relational goods (for a discussion of this concept, see Sugden 2002). The main argument here is that the lack of relational goods such as close personal relationships might be common in advanced countries and this may reduce overall well-being (Pugno 2009). This approach also draws from current work in psychology (see, for instance, Ash 2000; Gui 2000; Pugno 2005). Lacking of goals, active interests, and meaning (or boredom) has also been proposed as explanations for the observed high levels of unhappiness although incomes were high (Scitovsky 1976; Loewenstein 1999). The concept of freedom has also been connected with the level of well-being. In particular, the three main dimensions of freedom – political, economic, and personal – have been found to exhibit a positive relationship with happiness in many countries (Veenhoven 2000). For Phelps (2001), the paradox of happiness in the USA is attributed to a decline in the percentage of altruists in the population. This is because altruists are more likely to report themselves happy than people with other personality attributes.

Finally, a number of economic variables have been used in order to explain the paradox. The level of income inequality and unemployment are among the main ones that have been suggested. The basis of the negative effects of inequality is the concept of diminishing marginal utility of money: an extra dollar provides much more utility to a poor than to a rich person. This implies that if there is a transfer of money from the rich to the poor, average happiness increases. Thus, the more

equally income is distributed, the higher the level of happiness level in a country (Alesina et al. 2004; see also Layard 2005a). The level of unemployment has also been found to negatively affect happiness levels given that apart from the obvious individual costs, unemployment leads to social problems that affect society as a whole (Di Tella et al. 2003).

All of the above explanations to the paradox of happiness, no doubt, contribute to our understanding of the complex relationship between income and happiness. They all have empirical support and some backing from research in psychology and sociology (for further discussion, see Layard 2005a). In spite of this, however, many leading researchers in the field still claim that these approaches are not adequate in explaining the paradox. As Frey and Stutzer (2002b) state: “The causal factors that relate wealth to happiness, however, are not yet fully understood” (p. 76). This is mainly due to some recent empirical findings and some conceptual problems which undermine the above explanations. For instance, social relations have been found to account for only a fraction of the initial variance of life satisfaction (Ehrhardt et al. 2000). As far as inequality is concerned, there is recent evidence that some groups treat it as a feature of their environment and have a positive attitude toward it. In particular, when individuals focus on other people’s circumstances, extra income might have a strong positive effect on life satisfaction even for high levels of income. This can reduce the effect of the diminishing marginal utility of money mentioned above. This holds true especially for groups who exhibit a large variation of their income mainly due to higher job mobility (Clark 2003). In addition, inequality may also affect social relationships, and this complicates further its impact on happiness level (Helliwell 2003).

It seems that a combination of economic and noneconomic factors might shed more light to the paradox. For this reason, in the next two sections, we concentrate on the idea of needs hierarchy and the role of income comparisons.

## 4 The Needs Hierarchy Approach

Many authors consider the psychologist A. Maslow as the basic proponent of the needs hierarchy (Maslow 1954, and also Alderfer 1969, with less emphasis on hierarchy though). Today, the idea of needs hierarchy can be found in social sciences such as psychology, politics, and sociology (see, for instance, Ardrey 1970; Deci and Ryan 2000; Doyal and Gough 1984; Levi 1986; Tversky 1969). Furthermore, although this approach has not made a substantial impact to the established contemporary economic theory of choice, a number of influential economists like Little (1957), Encarnacion (1964), Georgescu-Roegen (1966), and Day (1971) have long emphasized the importance of needs hierarchy for choice theory. Furthermore, Earl (1986), Falkinger (1990), Pfouts (2002), Lavoie (2004), and others have recently discussed hierarchical-type preferences (for a review, see Drakopoulos 1994; Drakopoulos and Karayiannis 2004).

The standard approach to economic rationality assumes that economic agents engage in full substitutability which means that all preferences can be substituted fully. To take an example, food can in theory be substituted completely for perfume. This approach is in contrast to needs hierarchy. The conceptual basis of hierarchical choice is that human needs are of varying importance and that they are hierarchical. Primary needs must reach a given level of satisfaction first before the secondary ones are considered. In other words, preferences are hierarchical in the sense that higher priority choice variables must reach certain levels before lower priority choice variables are considered (for a discussion of the definition of primary and secondary needs, see Gasper 2005; Max-Neef 1995).

It must be noted that hierarchical needs-related behavior manifests itself quite strongly in many empirical studies of consumption patterns. In particular, the hierarchical approach predicts that when income is low, a very high percentage of it would be spent on food since food satisfies a basic need. (A detailed analysis of the role of income and substitution effects in the hierarchical model can be found in Lavoie 2004.) There are numerous empirical studies which indicate a significant and positive impact of household income on food variety. This is in line with the hypothesis that consumption evolves along a hierarchical order as income increases (for relevant empirical work in a number of countries, see, for instance, Canterbury 1979; Jackson and Marks 1999; Lluch et al. 1977; Thiele and Weiss 2003). The same pattern of behavior is observed with respect to the saving patterns which is the mirror image of consumption (Canova et al. 2005; Xiao and Noring 1994).

The incorporation of needs hierarchy in the framework of happiness research can provide some interesting insights. The standard approach to an individual's happiness level or life satisfaction is given as

$$U = U(y, z) \quad (2.2)$$

where  $U$  is happiness level or life satisfaction,  $y$  is the level of income, and  $z$  is a vector of characteristics comprising variables that affect life satisfaction. There is no accepted list of these variables, but as we saw, it can include social capital, social aspiration, freedom, emotions, goal completion, and meaning (Clark et al. 2008). These variables may or may not affect income.

There is also no agreement concerning the conceptual basis of happiness or life satisfaction. More specifically, there are two main approaches: the hedonic and the eudaimonic conceptions. The hedonic viewpoint defines well-being in terms of pleasure seeking and pain avoidance, and thus, the basic criterion for happiness is hedonic well-being. The eudaimonic approach focuses on meaning, self-development, and functioning, and the basic criterion for happiness is eudaimonic well-being (Ryan and Deci 2001; Waterman 1993). Both approaches have convergent and divergent aspects but are distinguishable in the sense that according to the eudaimonic approach, pleasure attainment alone should not be identified with happiness. The philosophical roots of these approaches can be found in ancient Greek philosophers and also in the utilitarianism of J. Bentham and J.S. Mill (for a discussion, see Drakopoulos 1991). Modern psychological theories like self-determination



theory attempt to reconcile the two approaches by identifying three fundamental psychological needs which, if satisfied, result in both hedonic and eudaimonic well-being (Ryan and Deci 2000).

The incorporation of needs hierarchy into a happiness or life satisfaction framework implies that the individual has a priority approach to life satisfaction. This means that the most important variables must be satisfied first before the second priority variable comes into the picture. In terms of hedonic and eudaimonic well-being, the hierarchical approach fits better with the latter. The multidimensional character of the eudaimonic approach might be accommodated better with an ordered structure of needs that hierarchical choice implies (see also Drakopoulos 1994). This idea is also supported by empirical findings by a number of job satisfaction (a major determinant of life satisfaction) specialists (see, for instance, Clark and Oswald 1996; Drakopoulos and Theodossiou 1997; Locke 1976).

The application of the hierarchical system in a life satisfaction framework can be the following: we take a simple life satisfaction vector:

$$U = (y, y^*, z) \quad (2.3)$$

where  $y$  is the most important variable which can be income,  $y^*$  is the aspiration or target level of income which can be determined by a number of factors, and  $z$  is the secondary variable which can represent a vector of other variables affecting life satisfaction. The target level of income  $y^*$  satisfies the basic needs, and its inclusion in Eq. (2.2) reflects the essence of hierarchy. (For a discussion concerning the determination of  $y^*$ , see Ferrer-i-Carbonell 2005.) The other variables ( $z$ ) satisfy secondary needs and are taken into consideration only when  $y$  reaches a satisfactory level or target  $y^*$ . We can incorporate all the above by taking a two-part life satisfaction function

$$U(y, z) = \{U_1(y, z), U_2(y, z)\} \quad (2.4)$$

where  $U(y, z) = U_1$  for  $y \leq y^*$

and  $U(y, z) = U_2$  for  $y > y^*$

with the following conditions:

$$\partial U_1 / \partial y > 0, \quad \partial U_2 / \partial y > 0,$$

and

$$\partial U_1 / \partial y > \partial U_2 / \partial y$$

The conditions provide the essence of the hierarchical approach to life satisfaction. The first two conditions imply that income has a positive effect on life satisfaction. The last condition indicates that income does not provide the same rate of satisfaction once a given level ( $y^*$ ) has been reached (although it continues to have a positive effect).

One potential difficulty with the empirical dimension of the hierarchical system might be the definition of basic needs. However, it has been maintained that needs

lower in the hierarchy are likely to be common among individuals of different cultures and that needs higher in the hierarchy are likely to be common among individuals of the same culture (see Georgescu-Roegen 1966; Little 1957; Max-Neef 1995).

The above formulation of happiness can be used as an additional explanation of the observed curvilinear relation between income and happiness: income has strong impact on happiness, but after a certain income level, the effect becomes much weaker.

## 5 Income Comparisons

As was mentioned above, a strand of literature toward explaining the happiness paradox focuses on “missing” economic variables. One idea which has been suggested is that of income comparisons. The idea that individuals compare their income to the income of similar individuals belongs to the general theoretical framework of reward comparisons. The general notion of comparing rewards with others has a long and persistent presence in the social sciences and in particular in many psychological, social, and managerial theories. Examples of theories where the idea of comparing rewards is central are: social comparison theory, reference group theory, relative deprivation theory, adaptation level theory, dissonance theory, and equity theory (see, for instance, Adams 1963; Deci and Ryan 2000; Festinger 1954; Greenberg 1990; Martin 1981; for surveys, see Earl 1990; Kapteyn and Wansbeek 1982).

The main thrust of the income comparisons argument in the context of happiness research is that individuals do not extract much happiness from their absolute income but from their position relative to other people’s incomes. In terms of the life satisfaction framework that was used above, this implies

$$U = (y, y^c, z) \tag{2.5}$$

with  $\partial U / \partial y > 0$

and  $\partial U / \partial y^c < 0$

where  $y^c$  is the “comparison income” or the “reference group income.” The negative sign of the last relation shows that life satisfaction falls as the income of the relevant reference group increases. Thus, raising everybody’s income does not necessarily increase general happiness. This is because in comparison to others, income has not improved (Andrews 1991; Easterlin 1974, 2001; Ferrer-i-Carbonell 2005; Frank 1985, 1999; Kenny 1999; Veenhoven 1991). A similar line of thought has to do with the changing income aspirations. More specifically, it has been argued that aspirations change over the life cycle roughly in proportion to income and this means that they have offsetting effects on happiness levels. According to this outlook, happiness level has a positive relationship with current income but a

negative one with aspirations about future income. Moreover, aspirations are based on past income. Given that material aspirations change over life cycle in proportion to income, it is likely that happiness level remains constant while income rises. The main example of this approach is the work of Easterlin, but it also draws from work in psychology (Easterlin 2001; Inglehart 1990; Kahneman et al. 1997).

The idea of comparison or relative income is quite important in economics and has been used in many theoretical contexts (Drakopoulos 2011; Lommerud 1989).<sup>1</sup> It was first suggested as a possible way of explaining the paradox by Easterlin (1974). The same author uses it in a later paper (Easterlin 2001), in which he elaborates on the idea of income aspirations in relation to actual income. A number of empirical papers have focused on the empirical testing of the idea in relation to happiness at both the individual and the aggregate level. On individual happiness, McBride (2001) presents an empirical analysis to test for the effect of an individual's own income, past financial situation, and cohort (reference) income on subjective well-being. McBride (2001) finds that the higher the income of the peers, the less satisfied is the individual. Similar findings are presented in a relatively early paper by Tomes (1986) which utilizes social-psychological measures of happiness and satisfaction.

There are numerous empirical studies on the aggregate level. A recent study by Blanchflower and Oswald (2004) investigates happiness in the United States and Great Britain. Apart from confirming the existence of the happiness paradox for the USA and the UK, the authors find that people care about comparison income. They also find indications that income is still important for lower income groups. Similar results are found by other empirical papers concentrating on the USA (Luttmer 2005), Latin America (Graham and Felton 2006), and Canada (Helliwell and Huang 2005) but also for emerging economies like China (Knight et al. 2009). The gist of these works is that life satisfaction or happiness is largely relative in income. Finally, a survey of empirical research on happiness and income shows a clear connection between income comparisons and happiness levels. As Frey and Stutzer (2002b) write: "It is not the absolute level of income that matters most but rather one's position relative to other individuals" (p. 411; see also Ferrer-i-Carbonell 2005).

The concept of income comparisons has also attracted criticism given that there is no universal agreement about the income group that people compare themselves within the relative income hypothesis (Sousa-Poza and Sousa-Poza 2000; but see also the discussion in Rablen 2008). However, the relative income approaches to the paradox might be enhanced (and respond more adequately to criticism) if a hierarchical system is also taken into account. The hierarchical approach implies that happiness depends only partly in comparisons. Basic needs cannot be substituted, and this limits the human capacity for adaptability. As Root Veenvhoven (1991) states: "To a great extent happiness depends on the gratification of innate

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<sup>1</sup> In some formal specifications,  $y$  is income,  $y^c$  is called reference group or comparison income, while the ratio  $y/y^c$  is called relative income (see also Clark et al. 2008).

bio-psychological needs which do not adjust to circumstances” (p. 32). Comparisons and adaptation are important once the basic needs are met. Therefore, further increases of income do not result in equivalent increases on happiness because people start comparing their income with the income of similar individuals, and this implies that their absolute income is not as important as before. Thus, a combination of the two approaches might contribute toward a more complete understanding of the paradox of happiness.

## 6 Concluding Comments

According to most economists, income is among the most important determinants of happiness. This is also supported by many empirical studies which focus at a particular point in time and country. However, the relationship is problematic given that there is ample evidence that increases of income over time do not correspond to equivalent increases in reported happiness and this is the central idea of the paradox of happiness. There have been a number of explanations of the paradox which include economic and non-economic considerations.

The basic aim of this chapter was to highlight two concepts which might enhance further our understanding of the income – happiness relationship. More specifically, it suggested that the combination of the notion of needs hierarchy and of comparison income can shed more light to the issue. Hierarchical choice has been studied by many social scientists and has been applied in a wide variety of social and economic issues. The notion of comparison income belongs to general theoretical framework of reward comparisons. Both needs hierarchy and income comparisons have strong empirical support in many studies across a number of fields. After a discussion of the characteristics of the two concepts in the context of happiness research, the present chapter argued that their combination might explain many empirical results that point to the happiness paradox. In particular, empirical studies indicate that income might be very important variable in providing happiness up to a certain level. After that level has been reached, it ceases to do so and other variables become important. In other words, there exists a curvilinear relationship between the two variables: income has a positive relationship with happiness up to a certain level of income but the relationship weakens after that level. The theoretical implications of needs hierarchy and comparison income mean that income is very important for happiness up to the satisfaction of basic needs. People start comparing their income after the basic needs have been met. Thus, further increases of income do not result in equivalent increases on happiness because people start focusing on comparing their income with the income of other people rather than on their absolute income. The same argument holds when there is a fall in average income: happiness levels will also fall but not to the same extent, unless the reduction in income is so substantial as to affect basic needs satisfaction. One can also get an insight of these points from the recent economic recession in the US and Europe in 2008. Some preliminary studies indicate that due to average income drop,

overall reported happiness has also dropped but not to the same extent as income (see Stellar 2011). This finding also implies that income is not very important for happiness when basic needs are satisfied and when people compare their incomes.

Thus, although many studies have concentrated on suggesting a number of variables which might account for the happiness paradox, a combination of the above two notions might be a way forward towards a more complete understanding of the complex relationship between income and happiness.

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# Chapter 3

## Goals and Plans: Their Relationship to Well-Being

Andrew MacLeod

### 1 Introduction

Human beings are future-oriented: we plan and anticipate; we assume and expect. This ability to project into the future is shared with other animals, but humans are distinctive in the extent to which they are able to think about the future in a way that is not stimulus-dependent. Gilbert (2006) calls non-human animal prospection ‘nexting’, which is the ability to detect something that is going to happen next based on the current stimulus conditions. The capacity to think about the future in a quite different way is the result of the enormous increase in frontal lobe size that has taken place in the human species. Of particular relevance to the focus of this chapter is the fact that these future-oriented states are often affective—there are things we look forward to or desire and things that we worry about or dread. Positive thoughts about the future are often in the form of goals that we set, around which we organise our lives and construct plans to bring the goals about. The link between future-oriented cognitions, in particular goals and plans, and well-being is the focus of this chapter. First, concepts of well-being will be discussed, followed by a discussion of goals and how they relate to well-being. Finally, planning for goals will be highlighted as a specific aspect of goal-directed behaviour that is pertinent to well-being. The overall conclusion is that goals and planning are related to well-being but that there are a number of complexities that moderate that relationship and that goal-directed behaviour can even be negatively related to well-being.

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## 2 Well-Being

There are two broad ways of thinking about well-being (e.g. Brulde 2007; Varelius 2004). The subjectivist approach defines well-being in terms of the subjective experience of the person—essentially, well-being is about how a person feels and thinks about their life. If someone, for example, feels happy, experiences lots of pleasure in the absence of pain, evaluates their life favourably, feels satisfied with their life, and so on, then they have high well-being. From an extreme subjectivist perspective, it makes no difference for the well-being of the individual how the happiness arises, although of course, it may matter in other ways, for example, in moral ways. It should be noted that what is being considered when discussing any concept of well-being is what it is that defines a life that is *good for the person who is living that life*, what is sometimes called prudential value, as opposed to other values, such as moral value, for example, the goodness of that life for other people, which is a separate concern (Haybron 2008).

Objectivism, in contrast, is the view that levels of well-being can be determined independently, or at least largely independently, of the subjective experience of the person under consideration. Well-being objectivists take the view that a person has well-being to the extent that their life contains the ‘good things’ in life. At the most extreme version of objectivism, these good things would be defined entirely independently of the subjective experience of the person. Examples would be income, length of life, and years of schooling, the ingredients that make up the UN Human Development (United Nations 2010) commonly used to compare the well-being of nations. A somewhat more psychological version of objectivism would include goods such as friendships, knowledge, and aesthetic experience. These are qualities that can be defined at least partly independently of how good or how bad a person’s subjective experience is or how they view their life. Note, that, for well-being objectivists, the value of such goods does *not* lie in their ability to make someone happy (in the sense of producing a desirable or satisfactory experience, which they may well do); they are good as final ends in themselves whether they make someone happy or not. In contrast, those of a subjectivist persuasion have no problems with these goods being seen as valuable but see them as having instrumental value in leading to subjective states of happiness rather than being intrinsically good, that is, final ends in themselves.

Within the psychological literature, these two concepts are broadly represented by what are called hedonic and what has come to be called eudaimonic approaches (e.g. Kashdan et al. 2008; Ryan and Deci 2001). Hedonic approaches emphasise subjective states, in particular feelings, whereas eudaimonic approaches argue that goods other than subjective states like happiness should be considered in deciding what constitutes well-being. As noted earlier, these eudaimonic approaches tend to produce lists of other goods, such as relationships, achievement, health, and so on. Of particular relevance to the discussion here is the fact that having goals is often one of the items on the list. Therefore, within a list approach goals simply are seen

as a component part of well-being, part of the definition, and therefore there is no empirical argument to be had about whether goals are related to well-being. Not surprisingly, most empirical work has adopted subjective well-being as its well-being indicator. The empirical question then becomes how do various aspects of goal-related experience relate to subjective well-being? Much of this research examines this question within the general population, or more specifically, within samples of undergraduate students. The second main empirical strand lies within the clinical domain. Here, the question is to what extent those with psychological disorders, for example, depression, anxiety, suicidal behaviour, and so on, show differences in their goals and planning behaviour compared to controls. Evidence from both empirical strands will be reviewed.

## ***2.1 Subjective Well-Being***

Subjective well-being has become operationalised as the presence of positive affect, the absence of negative affect alongside the presence of life satisfaction. The measures that have come to be accepted as operationalising the concepts are the Positive and Negative Affect Schedule (PANAS; Watson et al. 1988) and the Satisfaction with Life Scale (SWLS; Diener et al. 1985). The PANAS provides a list of affective words (e.g. excited, interested, tense, worried), and respondents are asked to indicate the extent to which they have felt this way during a given period, for example, the past week. Notably absent from the PANAS are low activity positive (serene, calm) and negative (lethargic, bored) states. Despite this limitation, the PANAS has been the most common way that affect has been measured within the well-being research tradition. The SWLS asks respondents to indicate on a 7-point scale the extent to which they agree or disagree with five statements regarding their satisfaction with their life as a whole (e.g. ‘I am satisfied with my life’; ‘the conditions of my life are excellent’). These three elements are either looked at separately or combined to form a unitary measure of subjective well-being (Pavot and Diener 2008).

## **3 Goals**

The goal concept is one that is used extensively in psychology, as well as being common in everyday language. Goals are defined in the psychological literature as ‘internal representations of desired states, where states are broadly construed as outcomes, events, or processes’ (Austin and Vancouver 1996, p. 338). A definition that does justice to the complex, multifaceted aspects of what a goal means as well as encompassing a number of factors including cognition, affect, and behaviour

comes from Cochran and Tesser (1996): ‘a cognitive image of an ideal stored in memory for comparison to an actual state; a representation of the future that influences the present; a desire (pleasure and satisfaction are expected from goal success); a source of motivation, an incentive to action’ (p. 100). Goals are essentially mental representations that people are (mostly) aware of that represent a desired future state that they have some intention to move towards. It is the intention to move towards the desired outcome and active engagement in its pathways that differentiates goals from fantasies (Oettingen and Mayer 2002). It is worth bearing in mind that although much of the time people are consciously aware of having goals, there are unconscious influences in goal-related behaviour (see Dijksterhuis and Aarts 2010). For example, the work of Bargh and colleagues (e.g. Bargh et al. 2001) has shown that priming of broad goal states, such as achievement, can lead to greater persistence and superior performance at a task, even though people are unaware of having been primed.

Goals are central in accounts of motivation, providing a middle level of analysis that links higher levels of motivation, needs, and values to lower level individual behaviours (Emmons 1986). For example, a higher level motivation like affiliation might be served by a goal of ‘getting to know John better’, which might be instantiated by a particular behaviour such as inviting John to dinner. This hierarchical organisation is central to goal theories. There are numerous levels that could be described in a goal hierarchy, but Carver and Scheier (1990) suggest three broad levels. The highest, most abstract level contains representations of ‘system concepts’. These are goals that typically incorporate a sense of the idealised self (e.g. to be a good person). They define the next level as the level of ‘principal control’. Carver and Scheier (1990) suggest that goals at this second level are used as reference points, linked to goals on the higher level (to be considerate, to be generous, etc.). These intermediate goals provide behaviours which people can enact in order to achieve abstract goals. The lowest level of the hierarchy, termed ‘programmes’, consists of concrete goals that are low level activities or actions (e.g. cook a meal, go to supermarket).

This hierarchical way of thinking about goals introduces the idea of plans. Later sections discuss planning in more detail, but to avoid confusion, something will be said here briefly about the relationship between goals and plans. Essentially, plans are the steps that are thought about that need to be enacted to bring goals about. Because of the hierarchical nature of goals, something can be both a plan (for a higher level goal) and a goal with its own underlying plan. In the words of Paul Simon (1973), ‘one man’s ceiling is another man’s floor’, or applied to what is being discussed in this chapter, one goal’s plan is another plan’s goal. However, something that is being thought about mainly in instrumental terms for bringing about another outcome can be thought of at that point in time as a plan whereas something that is seen as some sort of end in itself, even if at some other time, it could be thought of as part of a higher goal and therefore as a plan, is best thought of in that context as a goal. Planning will be returned to at a later stage in this chapter.

## 4 Goals and Well-Being

It is widely assumed that goals are related to well-being. As pointed out earlier, it has been suggested that human beings are essentially goal-directed organisms (e.g. Carver and Scheier, 1990; Emmons 1986), and as such, their well-being must be linked to goals. List-based approaches to well-being often have in their list of goods something that is related to goals. For example, one of the most influential list approaches with the psychological literature comes from Ryff (1989) who proposed six dimensions making up well-being. One of the dimensions is purpose in life. A high scorer on this dimension ‘has goals in life and a sense of directedness’ (Ryff 1989, p. 1072). Accounts that put goal-based behaviour at the absolute heart of well-being have been called ‘telic theories’, which essentially express the view that people experience a sense of well-being when they are engaged in striving towards valued goals (Schmuck and Sheldon 2001).

Leaving to one side the question of whether the assumption is valid about the inherent link between goals and well-being, *how* might goals relate to well-being? This question is particularly interesting because there is a seeming paradox at the heart of the goal–well-being relationship. Having a goal is an indicator of a discrepancy between the way things are and the way the person would like things to be. Goals are thus an indicator of dissatisfaction at some level, and, as such, ultimate well-being might be indicated by being free of having any goals. Such a line of thought can be found in Eastern, particularly Buddhist thinking which views this kind of discrepancy-based processing, with attendant goals and striving towards goals as part of the cycle of suffering. A different line of thinking is more prevalent in the Western way of thinking, which accepts that there will always be a future state that is more desirable than the current one. Engagement in striving towards those better states is therefore healthy. Goals, then, relate to well-being because they reflect engagement in life, which is linked to, or perhaps just part of, well-being. Goals motivate engagement in life tasks (Cantor and Sanderson 1999) and also direct that engagement so serving the function of organising and directing behaviour. Engagement in life tasks, as well as being intrinsically good, will also create positive affect (hedonic well-being) and produce a sense of purpose (eudaimonic well-being), though goal investment may also be associated with increased negative affect and worry (Pomerantz et al. 2000). States of well-being may also then promote goal-directed activity, producing a goal–engagement–well-being cycle. Additionally, goals, and their associated plans, may be negatively reinforcing through reducing anxiety associated with uncertainty about future outcomes and providing structure for ill-structured problems.

The implication is that having goals is an essential component of well-being (eudaimonic view) or an important contributor to a subjective state of well-being (hedonic view). But, the relationship may not be so simple. Other goal-related dimensions may come into play. Is it enough simply to be engaged with goals, or is it essential that people progress towards and achieve their goals? Are certain types

of goals good for well-being and others not? Is the way that goals are held important? Can goals be bad for well-being? These are some of the questions that empirical research has addressed.

## 4.1 Goal Progress

The goal–engagement–well-being cycle almost implies that simply having goals is good for, or an element of, well-being. But an obvious question is whether it is important to achieve the goal or at least have a sense of progressing towards the goal. In a number of models of emotion, one of the main roles of affect is to provide feedback about goal status. Positive emotions signal that goals are going well, whereas negative emotions signal problems with ongoing goals and plans and direct the person towards problem-solving efforts or reappraisal (e.g. Carver and Scheier 1990; Oatley and Johnson-Laird 1987). Thus, in these models, well-being (positive affect) is a direct result of felt goal progress. Affect is also not simply an output of the goal system. It fuels goal commitment and energises goal-directed behaviour as part of the cycle.

A number of empirical studies have shown that experience of goal progress relates to well-being over time (e.g. Sheldon and Elliott 1999; Sheldon et al. 2010). It is worth noting that progress is not the same thing as attainment and that the progress–well-being link suggests that while simply having a goal may not be enough, neither is goal attainment essential to well-being. The link between goals and well-being does not simply depend on the actual achievement of goals but entails a strong anticipatory element. A sense of goal progress is likely to be intrinsically rewarding but is also likely to have the effect of increasing anticipation of the goal, which includes two linked states: feeling good in the moment when progress is experienced (anticipatory affect) and anticipation of feeling good when the goal is achieved (anticipated affect). This pre-goal attainment positive affect is hypothesised to be a core feature of motivated behaviour (Davidson 1998).

In support of this, MacLeod and Salaminiou (2001) found that depressed patients anticipated less enjoyment from future positive events than did matched controls. Gard et al. (2007) found that participants with a diagnosis of schizophrenia also showed a similar deficit in anticipated enjoyment but interestingly were not significantly different from controls in the actual pleasure they experienced when events occurred (consummatory pleasure). Linking back to the importance of goal progress that is central to models, clinical groups have been found to show lower likelihood estimates of goals being achieved. Such lowered likelihood estimates are strong indicators of a sense of lack of progress towards goals and hence likely to be important for the well-being benefit of anticipating future positive outcomes. At the extreme low end of well-being, suicidal patients have been found to be able to provide goals but showed markedly lower estimates of goals ever coming about (Danchin, et al. 2010; Vincent et al. 2004). In the terms talked about already, they are able to describe goals but are not able to derive anticipatory well-being benefit

from those goals due to the lack of sense of progress, now or in the future, towards their goals. In fact, MacLeod and colleagues (Danchin et al. 2010; MacLeod and Conway 2007) have argued that this configuration—having goals but not having a sense of them being achievable, what they called ‘painful engagement’ (Danchin et al. 2010, p. 915)—is the kind of goal-related thinking that is most pernicious for well-being.

So, it appears that having goals is something that is broadly beneficial for a person’s well-being. For well-being benefit to be derived from those goals, it is not necessary for the goal to have happened, but, there does need to be a feeling of progress towards goals and a sense that they will be achieved, giving rise to an experience of anticipatory enjoyment.

However, evidence suggests that the idea of goal progress being related to well-being needs to have some qualifications added. Brunstein et al. (1998) found that well-being benefit was determined by whether people were pursuing goals that were congruent with underlying motivations of agency (effectiveness) or communion (relatedness). Agency-motivated participants did not derive well-being benefit from progressing towards communal goals, but they did derive benefit from agentic goals; communion-motivated participants showed the opposite. Sheldon and Elliott (1999) found that those who pursued goals because of more internal motives (because they enjoyed them or valued them: high self-concordance) showed increases in well-being with goal progress, whereas those who pursued their goals because they felt they ought to or would feel bad if they did not (low self-concordance) did not. Progress needs to be linked to goals that fit with the person’s underlying motivation or values, and goals related to external motivations do not appear to be beneficial for well-being.

## 4.2 *Goal Content*

A further potential qualification to the goal–well-being link concerns the type of goals that people have, independently of fit with individual differences or sources of motivation. Are certain specific kinds of goal content related to well-being and other kinds not? Or, put another way, is it people who have particular kinds of goals who exhibit high levels of well-being? The work of Sheldon and colleagues (2010), described above, shows that only goals that are identified strongly with the person’s values and enjoyment have the potential to relate to well-being through goal progress. Can these concordant goals be about more or less anything, or are there only certain types of goals that are inherently able, or at least more likely, to have this concordant quality? For example, take someone who is actively and successfully pursuing the goal of dominating other people, which he values and is very interested in and enjoys; can such a person enhance their well-being through having and progressing in this goal? It is easier to see that, in theory, this might potentially give rise to the subjective sort well-being, but it could also increase the more prescribed aspects of well-being, such as, increasing a sense of autonomy and

mastery and purpose. Of course, there may be other reasons why we think it is a bad thing for a person to pursue these goals, for example, for moral reasons—it is bad for other people and lowers their well-being, but can it be good for someone's own well-being?

There is some evidence that certain kinds of goals, that is, goals that relate to particular facets of life, are more likely to be linked to well-being than are other types of goals. Kasser and colleagues (e.g. Sheldon and Kasser 1998; Kasser and Ryan 2001) distinguish between goals that are about affiliation, self-acceptance, and community feeling, which they characterise as intrinsic goals related to basic psychological needs, and goals concerned with financial success, appearance, or social recognition, which they call extrinsic goals. Having achieved or progressing towards intrinsic goals or aspirations is related to well-being, whereas the same is not true for extrinsic goals (Kasser and Ryan 2001; Sheldon and Kasser 1998). Cohen and Cohen (2001) found that in a sample of 16-year-olds, putting a high priority on goals of being rich (and also having a good sex life) was related to the presence of a wide range of psychological disorders. In a recent intervention study, Sheldon et al. (2010) found that participants asked to pursue goals that would increase their feelings of autonomy, competence, and relatedness showed increases in well-being compared to those asked to pursue goals to improve their life circumstances. This latter finding does not address the issue of the limited well-being value of extrinsic goals but does appear to support the idea from self-determination theory (Deci and Ryan 2000) which proposes that well-being is linked to satisfying the basic needs of autonomy, competence, and relatedness.

A number of caveats need to be inserted at this point. First, the findings describe what is true in general, for groups, rather than for individuals. For example, it may still be the case that certain individuals can enhance their well-being through having financial goals or popularity goals or other types of goals. This idea is made more convincing by the fact that well-being is probably not a unitary concept and some aspects of it may be more linked to intrinsic goals but some aspects may be served by extrinsic goals. Second, it is likely to be what the goal serves rather than the goal content itself that is important. Although there may often be a clear link between the two, this is not necessarily so. So, someone may have what appears to be an extrinsic goal (making a lot of money before they are 35), but that goal may serve different motives (to provide security and care for their elderly parents vs. gaining the admiration of their peers). Because goals are part of a hierarchy, it is not always possible to detect the underlying motive from the surface content of the goal.

Finally, causality should not be assumed. It is not difficult to see that being unhappy might well lead a person to having goals that are about the self and might also lead them to clutch at more concrete goals involving money and recognition as escape routes from unhappiness. Such extrinsic goals may appear to offer an obvious route out of unhappiness. Nevertheless, if such goals are limited in their capacity for well-being enhancement, then there is a negative cycle where those low in well-being try to pursue goals to improve their situation not realising that those goals have little of that capability.



So far, it has been argued, and evidence presented, that goal-based thinking and action is good, albeit qualified by certain other constraints related to perceived progress, goal type, and motivation. The message is that goal-related behaviour and experience are not always related to well-being and this raises the question of whether that can even be to the extent of being a harmful relationship. The following three sections discuss some ways in which goal-directedness may be harmful or at least associated with low well-being.

### ***4.3 Goal Orientation: Approach Versus Avoidance Goals***

A major distinction has been made between approach and avoidance goals (e.g. Elliot et al. 1997). Approach goals are generally defined as being focused on moving towards a positive outcome, and avoidance goals are about preventing an occurrence of something undesirable. So, approach goals are usually about something new happening and avoidance goals about something new not happening. One complication is that the appearance of the goals may not always match underlying motivation, in much the same way as already discussed for intrinsic and extrinsic goals. So, an approach goal (being promoted at work) may have an avoidance motivation (so that my parents will not think I am a failure) or an approach motivation (so that I can push myself and develop my skills further or so that I can buy my own house). This discordance is perhaps easier to envisage for approach goals but could potentially also arise for avoidance goals. The distinction maps well on to traditional motivational accounts of basic approach and avoidance motivational systems (e.g. Gray 1982; Fowles 1994).

Having a greater proportion of approach versus avoidance goals has been found to be related to higher levels of well-being (Elliot and et al. 1997). Using proportion as a measure does not identify whether it is the goodness of approach goals, the badness of avoidance goals, or both that is the active ingredient in the well-being link. In a series of studies, Dickson and MacLeod (2004a, b, 2006) tried to separate out relationships to depression of increased avoidance motivation and decreased approach motivation. They asked adolescent participants to generate approach goals (in the future, it will be important for me to. . .) and avoidance goals (in the future, it will be important for me to avoid. . .). In all three studies, levels of self-reported depression were associated with fewer approach goals. Having more avoidance goals was only related to levels of depression in one of the three studies. However, to add some confusion to the picture, in the one clinical study conducted to date, depressed patients did not differ from controls on number of approach or avoidance goals they were able to generate (Dickson et al. 2011). Thus, there is some evidence that a decrease in approach goals is related to depression, at least in adolescent non-clinical samples.

There is less evidence of a relationship between avoidance motivation and depression. A deficit in approach motivation is consistent with approaches that highlight deficits in positive aspects of experience in depression (Bylsma et al. 2011).

Thus, although it has been suggested that avoidance goals are inversely linked to well-being, the evidence is stronger that it is a deficit in approach goals that is more important. It is worth noting, however, before drawing general conclusions that age may be a factor in the relationship between goal type and well-being. Older age is known to be associated with more goals related to preservation of capacities and independence, predominantly avoidance themes (Heckhausen 1997), and so, the approach goal–well-being link may operate differently as a function of age, although there is currently not the evidence to suggest that it does.

#### **4.4 Goal Organisation**

As goals are organised and interlinked in a structured way, there are obvious possibilities for well-being to be related to the way that goals are structured. The self-concordance approach already discussed is really about the extent to which there is consistency across different levels of motivation—well-being depends on goals being consistent with higher levels of motivation. However, several approaches have argued that problems arise when goals are too interlinked. McIntosh and colleagues use the term ‘linkers’ to describe people who perceive their higher level goals to be dependent on lower level goals being achieved (see McIntosh 1996). Street (2002) describes a similar idea of ‘conditional goal setters’ who see their higher level goals, especially the goal of being happy, to be dependent on particular lower level goals being achieved. According to Street, there are two sources of problems—believing that a higher level outcome such as being happy can be treated as a goal at all and, secondly, believing that it is linked to the attainment of lower order goals. Evidence tends to focus on the second of those aspects. For example, Street found levels of depression to be correlated with the extent to which people endorsed the items ‘I can only be happy/fulfilled/have self-worth if . . .’ where the sentence was completed by goals relevant to the person. Hadley and MacLeod (2010) found that within a sample of people with a history of chronic depression, levels of hopelessness correlated highly with Street’s conditional goal-setting measure. Danchin et al. (2010) also found that those with a recent suicidal episode showed particularly high levels of conditional goal setting when compared with non-suicidal depressed/anxious controls or population controls. Within these studies, both clinical groups were able to provide goals but were differentiated from controls by being significantly higher on conditional goal setting: they placed more weight on those goals being achieved as routes to well-being. Clinical groups also gave significantly lower likelihood ratings of their goals being achieved.

The elevated conditional goal setting found in clinical groups may help explain why individuals persist in holding on to goals that they feel are relatively unlikely to come about. Recent studies have shown that the ability to disengage from unproductive goals and engage with alternative goals characterises healthy

functioning and those who are low in well-being are less likely to show this disengagement/re-engagement ability (Wrosch and Miller 2009). Conditional goal setting might explain why: if people feel that their happiness is dependent on a particular goal, they have little choice but to stick with it even in the face of believing that it is relatively unlikely. This is the state of ‘painful engagement’ described by MacLeod and Conway (2007)—having goals, believing that they are unlikely but having little option but to remain attached to them because of believing that future well-being is dependent on them.

## **4.5 Goal Excessiveness**

It has been argued fairly clearly so far that on the whole goals are good for well-being or at least a constituent part of well-being. Caveats are whether the goals are felt to be progressing and the goals are of a certain type (e.g. intrinsic, approach-oriented, linked to higher order motives) and not held in a certain way (i.e. a dependent, conditional way). Some of these qualifications suggest that goal-oriented behaviour might sometimes be harmful for well-being. A new line of research supports this idea. It is being suggested that bipolar disorder is linked to an excess of goal-directed behaviour; bipolar disorder is characterised by swings in mood from depression to mania. There are different types of this kind of experience and varying severities, but they share the commonality of unusual variability in mood. Johnson and colleagues (Johnson et al. 2012) argue that the fundamental problem in bipolar disorder is an oversensitivity and over-reactivity to goals. Those with bipolar disorder report greater effort in pursuit of goals (Alloy et al. 2009) and see goals as more important (Lam et al. 2004). There is a greater tendency to invest in difficult-to-attain goals and a heightened sensitivity to goals being achieved or being thwarted (Johnson and Carver 2006). These findings suggest that over-activation of the goals system, as well as under-activation, can have implications for well-being.

## **5 Plans**

### **5.1 What Are Plans?**

Scholnick and Friedman (1993) described plans as ‘the designs we construct to guide our attempts to reach a goal in a given environment’ (p. 146). The key elements of these definitions are that planning is (1) future-oriented (i.e. it refers to actions not yet taken), (2) it is conscious and strategic, (3) it entails an intention to act, and (4) it is about steps or strategies aimed at reaching a particular end point or goal. Plans are the route by which goals are to be achieved. As indicated earlier, the distinction between goals and plans is a fine one. A particular goal is often also

a subgoal for a higher level goal and therefore can be seen as part of the plan for attaining that higher level goal. As soon as a plan is formed, it becomes a kind of goal. The goal of getting promotion at work may be part of the plan to achieve the goal of eventual financial independence, which may, in turn, be a step towards the goal of being autonomous. So, something can be both a plan (serving achievement of a higher order goal) and a goal that then is supported by more detailed plans to achieve it, but whenever something is being thought of primarily as a step rather than an end, it becomes a plan.

Smith (1996) has pointed out that the literature on planning refers to two quite different activities—planning for discrete tasks and planning for life goals. Planning for discrete tasks is often concerned with solving laboratory-based problems where the parameters are known. The commonest example is the Tower of London task, where participants have to move a set of different sized rings from a starting point on three poles into a particular configuration on the poles (e.g. Carlin and et al. 2000). It is unclear to what extent this kind of planning relates to planning applied to the pursuit of life goals, which are much more complex and open-ended (Smith 1996). Discrete task planning involves a linear series of steps, whereas life goal planning requires complex parallel activities.

Planning is linked to a variety of other factors, but these can be grouped into two broad dimensions of planning ability and planning propensity (Friedman and Scholnick 1997). Planning ability will depend on cognitive capacity but also on long-term knowledge which is relevant to the particular goal or the planning process. Planning propensity will depend on a wide range of factors including cultural, interpersonal, and social factors but also motivational factors such as belief in the importance of the goal and the efficacy of planning.

## ***5.2 Are Plans Linked to Well-Being?***

There is small but clear body of evidence to support the idea that planning is linked to well-being. This evidence comes from studies using a variety of methodologies, covering both planning ability/performance and self-reported planning propensity. The inclusion of performance measures is important because it broadens any relationships found beyond simple self-report. The studies also cover a wide range of levels of well-being.

Several studies have found that self-reported planning relates to well-being. Prenda and Lachman (2001) in a large community sample found that those scoring high on items such as ‘I like to make plans for the future’ and ‘I believe there is no sense planning too far ahead because so many things can change’ (reverse scored) reported higher levels of life satisfaction than those scoring low. Nezlek (2001) also used a self-report measure of planning to look at the relationship with well-being. Participants were asked to keep a daily diary, including mood ratings and a rating of how carefully they had planned their activities that day and to what extent the activities occurred as planned. Those who were elevated on depression scores

reported, at the end of each day, planning their activities for that day less carefully and were less likely to say that their plans had been realised fully. Over all participants, anxiety was lower, and self-esteem was higher on days that they said they had planned more carefully and their plans had been realised more fully.

Planning ability measures also show a link between planning and well-being. MacLeod and Conway (2005) developed a measure of planning based on the means–end problem-solving task (MEPS; Platt and Spivack 1975). Participants were asked to provide goals in a number of life domains and then have to say how they would get from where they are now to the goal. As in the MEPS, various measures can be taken such as the number of steps to the goal, where more steps represent good planning, independent overall ratings of the effectiveness of plans (how likely the plans are to achieve the goal), and specificity of plan steps. Specific plans were those where the plan was specific to the goal in question and gave enough detailed information not to need to be further broken down into subplans. For example, in relation to the goal of becoming fit, a specific plan would be ‘to play tennis at the local park each Sunday with my brother David’, whereas a non-specific plan would be ‘to do more exercise’.

In a community sample, a number of planning steps and ratings of planning effectiveness were correlated with having future positive outcomes to look forward to, which was in turn related to higher levels of subjective well-being (MacLeod and Conway 2005). Using the same measure, Vincent et al. (2004) found that recent suicide attempters gave fewer steps in plans to achieve goals. Both mildly to moderately disturbed groups (Dickson and MacLeod 2004b) and severely mood-disturbed individuals (Vincent et al. 2004) have been found to provide less specific plans to achieve goals than non-mood-disturbed controls.

Overall, although research is only beginning to emerge, it seems clear that planning, both self-reported propensity to plan and planning ability, is positively related to well-being.

### ***5.3 How Are Plans Linked to Well-Being?***

Clearly, causality is difficult to address. Low mood may, and probably does, lead to people having less confidence in planning and impaired ability to plan. However, there is a plausible mechanism whereby planning influences well-being. The most obvious way that plans link to well-being is that plans enable goal progress and goal progress results in well-being. Plans create a bridge between intention and action, making goal-directed behaviour, and therefore goal progress, more likely. Within motivational theories such as the health action process approach (Schwarzer 1992) and the theory of planned behaviour (Ajzen 1991) intentions represent a state of readiness and willingness to engage in some behaviour. However, that readiness needs to be translated into action, and it is here that planning plays a key role. For example, Luszczynska and Schwarzer (2003) found that women who reported having had a plan about carrying out breast self-examination, including where

and when they were going to do it, were more likely to carry it out. Van Osch et al. (2008) found that action planning—when, where and how to implement a behaviour—increased the variance explained in sunscreen use over and above intention to use sunscreen. Scholz et al. (2008) found a similar result in predicting engagement in physical activity. Additionally, they found that coping planning, which involves anticipating barriers and how to overcome them, also added to the ability to predict behaviour along with action planning. A particular kind of planning, where goal-related behaviour is linked to specific environmental cues of place and time, has been labelled ‘implementation intentions’ (e.g. Brandstatter et al. 2001). Implementation intentions can be thought of micro-level plans linked to particular environmental cues that are in form of ‘when I encounter x then I will y’. For example, someone who has a goal of having a better relationship with Tomas, a shy colleague at work, might have the implementation intention: ‘whenever I see Tomas at the water dispenser I will smile and ask him how he is’. Koestner et al. (2002) report a meta-analysis showing that participants who were asked to form implementation intentions relating to specific goals showed greater goal attainment than those not asked to.

There are likely to be other effects of planning on well-being. Planning, it has been argued, both reflects and reinforces a sense of control over the environment (Prenda and Lachman 2001), which itself makes planning more likely. Likewise, it is probably the case that planning has a reciprocal relationship with well-being. Isen (1999) and Fredrickson (2004) have shown that positive emotional states increase cognitive flexibility, which is likely to include planning. The third possibility is that planning is neither a cause nor caused by well-being but is simply part of a constellation or cluster of positive psychological characteristics that are not easily separated into causes and effects. MacLeod and Conway (2005) found that planning correlated with social network size and household income, as well as both subjective and psychological well-being. Prenda and Lachman (2001) found that planners were more educated, had higher levels of social support, had higher incomes, and were generally higher on desirable personality traits.

There is evidence that planning is linked to well-being and there are plausible mechanisms through which it would exert an influence on well-being but more direct evidence would be needed to be confident about causality. More direct evidence comes from studies that have manipulated planning and observed effects on well-being. MacLeod and colleagues (MacLeod et al. 2008) developed a brief programme aimed at teaching goal setting and planning skills (goals and plans—GAP training). The skills taught are to identify goals that are self-concordant and have an approach orientation. The second stage is to develop planning skills that then leads to implementing plans and dealing with anticipated obstacles. MacLeod et al. (2008) found that with a general non-clinical sample, those taking part in GAP showed significant increases in subjective well-being compared to controls. Reductions in psychiatric symptoms and hopelessness as well as increased positive future thinking have been also found in a long-term, forensic psychiatric sample receiving GAP training (Ferguson et al. 2009).

## 6 Conclusion

Well-being is a concept that has been defined in different ways. Some approaches to well-being include goal-directed behaviour and experience as an element of the list that makes up well-being, and so, goal-based experience becomes part of the definition of what constitutes a good life for a person. Other approaches that take a more subjective approach to well-being have examined whether goal-oriented behaviour and experience, including planning, relate to the subjective experience of well-being. Evidence from clinical and non-clinical samples suggests a clear link: high well-being is associated with progressing towards approach-oriented goals that are held for internal reasons consistent with the person's values and having plans in place to reach those goals. It appears that for well-being, goals can also be held too strongly and tenaciously and have too much well-being value invested in them. There is evidence of a causal link between goal-related experience and well-being, and plausible causal mechanisms, providing grounds for accepting the influence of goals and plans on well-being. However, like many aspects of human experience, these relationships are likely to be reciprocal. Further research is needed to understand individual and cultural differences, and there is much to be learned about how a goal-based understanding of well-being can be applied to help those with low well-being.

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# Chapter 4

## Living in Accordance with One's Implicit Motives: Cross-Cultural Evidence for Beneficial Effects of Motive-Goal Congruence and Motive Satisfaction

Jan Hofer and Holger Busch

### 1 Introduction

In their tremendously influential introduction to Positive Psychology, Seligman and Csikszentmihalyi (2000) name three issues that Positive Psychology turns attention to. These are positive experience (e.g., well-being, flow), positive personality (e.g., strengths, virtues, resources), and social contexts (e.g., culture, social relationships) fostering the previous two. Thus, broadly speaking, the central question tackled by Positive Psychology is what makes people happy and flourish.

In this chapter, we argue that implicit motive research can contribute unique answers to this question. Coming from a research tradition founded on the works of David McClelland (e.g., McClelland 1987; McClelland et al. 1989), we view preconsciously represented social motives as a weighing disposition which determines the extent to which certain activities are considered emotionally pleasant and fulfilling. That is, we see the satisfaction of a number of motives as pivotal antecedent of well-being. This hypothesis has found increasing empirical support in recent motivational research. Specifically, research on motive-goal congruence has shown that pursuance of a given goal is more emotionally satisfying when this goal is in line with the person's implicit motive structure than when it does not match the implicit motive system well (Brunstein et al. 1998).

In what follows, we will provide an overview of the present state of cross-cultural motive-goal congruence research. To do so, we will first elaborate on the effects of the alignment of implicit and explicit motives on well-being in Euro-American samples. We will then continue to argue that, although culture and well-being are meaningfully related, cross-cultural studies can also provide valuable

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insight into which associations are not affected by culture. We suggest that the association between motive-goal congruence and well-being is an example of the latter case. Consequently, the main body of this chapter is dedicated to the host of studies on motive-goal congruence that has been conducted cross-culturally to maximize the degree to which results on motive-congruence effects can be generalized. These studies show with remarkable convergence that beneficial effects of motive-goal congruence can indeed be found in a variety of cultural contexts. Finally, we will close with a discussion of questions that motive-goal congruence research should address in future.

## 2 Human Strivings and Well-Being

The idea that striving for meaningful goals and personal projects gives meaning and direction to life (Bühler and Massarik 1968; Little 1983) is well fostered by empirical research. Conclusive evidence suggests that commitment to and successful pursuance of goals and life plans represent a fundamental source of personal well-being, happiness, and mental health (e.g., Brunstein 1993; Emmons 1996). These remarks seem to suggest that, in principle, any significant goal has beneficial effects on an individual's well-being. However, theorizing and empirical findings do not allow us to ignore the motivational orientation of human conscious strivings. That is, a variety of theories assumes that the pursuit of some goals is more beneficial for well-being and psychological functioning than the pursuit of others.

For example, in self-determination theory (SDT), Deci and Ryan (2000) argue for the existence of three innate basic needs: autonomy, competence, and relatedness. Individuals' goals are defined as intrinsically motivated if they serve to satisfy at least one of the basic psychological needs. Satisfaction of needs results in ongoing psychological growth, integrity, and well-being, while thwarting basic needs negatively affects mental health (Deci and Ryan 2000). In contrast, pursuance of extrinsically motivated goals, namely, strivings that do not satisfy deeply rooted needs but rather revolve around social status, fame, and popularity, is considered to be detrimental to optimal human functioning and development over the life course. Thus, acting in line with need-congruent goals rather than purely adopted social norms and obligations is associated with enhanced levels of happiness (Deci and Ryan 2000). Similarly, Waterman (1993) proposes authenticity as the central determinant of optimal functioning. According to his view, living and acting in accordance with the true self (daimon) cause an intense experience of well-being. In this chapter, however, we will present studies that highlight the importance of the matching of personal goals and implicit motives. That is, we will argue that it is the implicit motivational system that determines whether and to what extent the pursuit of a given conscious goal is experienced as associated with well-being.

### 3 Types of Motivational Systems

Thus, the focus of our chapter on the relationship between need fulfillment and psychological as well as subjective well-being is set on implicit needs or motives that represent a decisive component of personality (McClelland 1987). Above all, theoretical elaborations and empirical research focus on three implicit needs: the need for affiliation and intimacy, as reflected by seeking contact and closeness to others; the need for achievement, defined as a concern for efficacy and competence; and the need for power, the concern for having an impact on others' behavior and emotions (see Schultheiss and Brunstein 2010, for an overview).

Implicit needs reflect our biological heritage shaped by pressures in the environment of evolutionary adaptedness (i.e., the epoch in human phylogenesis that human psychological mechanisms to this day are adapted to). Thus, these motive systems have evolved as they serve to enhance survival and reproductive success (Winter 1996; see also MacDonald 1991). For example, the need for affiliation and intimacy increases the likelihood for successful reproduction by facilitating bonding with potential mates.

Although implicit needs are innate, they show high plasticity by being sensitive toward the presence or absence of environmental events. Starting from early childhood, when language mastery has not yet been established, implicit motives develop based on affectively toned experience and learning by processes of classical and instrumental conditioning.

For example, age-appropriate, early childhood experiences of reward and affection for mastery and child-rearing practices highlighting early independence are associated with a pronounced positively toned adult implicit achievement motive (McClelland and Pilon 1983; Winterbottom 1958). As a consequence, individual differences in implicit motive strength are likely to reflect both genetic and environmental sources of variance.

*Implicit motives* are defined as affective preferences for situations which feature specific incentives, energize and direct spontaneous action and long-term behavioral trends, and operate outside of conscious awareness and control (McClelland 1987; McClelland et al. 1989). However, implicit motives express themselves in individuals' fantasy and, thus, are measurable by indirect means. Typically, Picture Story Exercises (PSE; McClelland et al. 1989), which represent modifications of the classical TAT (Murray 1943), have been established as a reliably scored and valid instrument for the measurement of implicit motives.

In contrast to implicit motives, McClelland and colleagues (1989) define *explicit motives* as consciously represented human strivings associated with values, goals, and expectations that are normative for a given group. Evidence suggests that explicit teaching by parents and other significant agents of socialization with respect to what is important for the child (e.g., to pursue particular goals, to follow certain rules) shapes components of the explicit motivational system. Thus, explicit motives develop later in childhood when children are able to grasp the significance of the linguistic information and to organize its meaning into such constructs as self, others, and sociocultural norms (McClelland et al. 1989).

In the studies that will be reviewed in the following, people's explicit motives such as values and goals were assessed by various self-report measurements. To measure individuals' strength of implicit motives, in contrast, PSE measures were predominantly used. In a small number of studies, different instruments for the assessment of implicit motives were used such as the Operant Motive Test (Baumann et al. 2005) and the semi-projective Multi-Motive Grid (e.g., Kehr 2004; Schüler et al. 2008).

Ideally, a person's explicit motives such as his/her goals and values are likely to give direction to the realization of implicit motives by specifying behavioral correlates in certain domains of life (French and Lesser 1964; McClelland et al. 1989). Yet, conscious strivings can also be obstructive for and override one's motivational impulses, resulting in a discrepancy between both types of motives (see Brunstein 2010). Mostly, such discrepancies are tested by a close examination of the interaction coefficient computed by multiplying implicit motives by explicit motives. Again, a small number of studies examined effects of motive alignment by use of discrepancy measures, that is, motive difference scores (e.g., Kehr 2004).

In any case, lack of congruence between implicit and explicit motives can certainly lead to trouble (McClelland et al. 1989). Before we go into details on the detrimental effects of lacking motive congruence, let us briefly see for what reasons some people can and other people cannot bring their motivational systems in line.

## 4 Determinants of Motive Congruence

Empirical studies have shown that individuals vary in their alignment of motive systems. Brunstein et al. (1999) propose that congruence between motivational systems is not preprogrammed ontogenetically into the individual. Rather, if congruence between implicit and explicit motivational system is achieved, it will occur during the course of individual development. In recent years, research has made substantial progress toward identifying determinants of congruence between both motive systems (see Thrash et al. 2010, for a recent overview).

In principle, two lines of research have been applied. Firstly, studies on bridging the gap between implicit and explicit motives have highlighted the importance of sensory experience of affective incentives for implicit motives (Job and Brandstätter 2009; Schultheiss and Brunstein 1999). These studies have shown that individuals are likely to benefit from goal imagery interventions to commit themselves to motive-congruent strivings. Secondly, the effect of particular personality dispositions on alignment of motives has been examined. To briefly summarize, those studies indicate that those personality dispositions facilitate congruence of motives that enable the person to be aware of and ground decisions on needs represented in their self (e.g., Baumann et al. 2005; Schultheiss et al. 2011; Thrash et al. 2007). In contrast, people who do not have access to their inner needs are not able to test how congruent any given goal really is with their implicit motivational system, sometimes even confusing goals that were imposed upon them with those they chose themselves (Kuhl and Kazén 1994).

## 5 Consequences of Motive Congruence

As noted earlier in this chapter, individuals differ in their motive strength as a function of motive-relevant experiences and learning starting in prelingual childhood. In our view, these differences in motive strength are decisive for well-being effects of goal-striving in later life. A fair number of studies have examined the relationship between motive congruence and psychological and behavioral correlates. As one of the first, Brunstein and colleagues (1998) have picked up the suggestion by McClelland and colleagues (1989) that the pursuance of goals that are not energized by or even at odds with one's implicit motives is detrimental to well-being. Differentiating between the motivational domains of agency and communion (see Bakan 1966), the authors report that progress toward motive-congruent goals, but not toward motive-incongruent goals, was associated with daily experiences of emotional well-being of students. Moreover, over a 4-month period, students' increase in emotional well-being could be predicted by high commitment to and high attainability of motive-congruent goals. In contrast, a lack of motive-satisfying experiences as reflected by high commitment to motive-incongruent goals predicted a decline of students' well-being. Thus, implicit motives are deeply involved in individuals' experiences of well-being as, above all, goals that carry motive-relevant incentives result in enhanced emotional pleasure (Brunstein 2010).

Following this line of argument, Schultheiss et al. (2008) differentiate a *hot* and a *cold* mode of goal pursuit. The authors termed goal pursuits as being hot if supported by strong implicit motives and, thus, allowing people to consummate affectively charged incentives (motivational gratification). In contrast, goal pursuits that lack the backup of implicit motives are described as cold. The authors report that solely successes and failures in the hot mode of goal pursuit had effects on emotional well-being and depressive symptoms: Among students with strong implicit motives, goal progress was associated with experiences of emotional well-being and few depressive symptoms, but little progress predicted low levels of well-being and increased depressive symptoms. Similar effects could not be identified among participants low in implicit motives. Thus, commitment to motive-incongruent goals might impair emotional well-being only if it distracts from pursuing motive-congruent goals and, therefore, from satisfying implicit motives (Schultheiss et al. 2008).

Focusing on the motivational domain of achievement, detrimental effects of motive incongruence on well-being were also reported by Baumann and colleagues (2005). The authors consider motive incongruence to be a hidden source of stress that reduces positive emotional states, that is, subjective well-being, and facilitates symptom formation unless the maladaptive mood related to motive discrepancies can be alleviated by individuals' self-regulatory capacities (see Job et al. 2010, for the link between motive incongruence and unhealthy eating behavior). Similarly, Kehr (2004) argues that negative effects of motive discrepancies on subjective well-being result from decreases in volitional strength as it is more difficult to keep

motive-incongruent strivings on track. Of course, additional variables may have an effect on how closely alignment of personal strivings to implicit motives is associated with enhanced well-being. In line with this assumption, motive congruence seems particularly beneficial for subjective well-being if the person does not restrain his/her motivational impulses (Langens 2007) and if the person in fact shows the behavior required for the satisfaction of the implicit motive (e.g., Schüler et al. 2008).

To conclude, effects of motivational congruence and incongruence, respectively, on components of well-being are well established. While an alignment of implicit motives and consciously represented strivings within a given motivational domain typically is beneficial for well-being and happiness, commitment to and pursuance of goals that are not underpinned by implicit motives or even at odds with their satisfaction are often associated with detrimental effects on well-being and mental health. However, above-cited studies were exclusively conducted in Euro-American contexts. Thus, the generalizability of findings to other cultural contexts is at least questionable. As personality develops by a complex interaction of genetic and environmental factors, with cultural influences being among the most important of the contextual influences (Benet-Martínez and Oishi 2008), and behavior is strongly conditioned by cultural pressures and demands such as norms, beliefs, and values (Hofer and Bond 2008), it becomes crucial to examine whether alignment or misalignment of conscious strivings with the implicit motivational system entails similar effects on well-being in divergent cultural contexts.

## **6 Acknowledging Culture's Impact on Behavior and Well-Being While Also Looking Beyond Culture**

Culture has a major impact on how we behave in our daily lives, whether we are aware of this influence or not. Mostly, people realize their own cultural imprint only when they get in contact with people holding divergent cultural beliefs. However, how to define culture and how to analyze the role it plays in shaping how people act, perceive, and feel have steadily attracted the attention of empirical psychologists (see Van de Vijver et al. 2011, for an overview). Culture has proven to be an elusive concept. Thus, not surprisingly, a variety of definitions of culture exist. Bond (2004) understands culture as “a shared system of beliefs (what is true), values (what is important), expectations, especially about scripted behavioral sequences, and behavior meanings (what is implied by engaging in a given action) developed by a group over time to provide the requirements of living (food and water, protection against the elements, security, social belonging, appreciation and respect from others, and the exercise of one's skills in realizing one's life purpose) in a particular geographical niche” (p. 62) because this shared system facilitates communication and coordination among members of the same cultural group. This psychological definition of culture has the advantage of summarizing several dimensions along which cultural groups differ and which accordingly can be used



to distinguish between cultural groups or explain behavioral differences across cultural groups. In particular, we will later come back to the value dimension included in Bond's statement because it has guided the cross-cultural research on motive-goal congruence effects on well-being that will be reviewed.

To open the broad term of culture for empirical investigation, several approaches toward studying culture have been introduced. For example, Hofstede (1980) coined the terms of individualism/collectivism for describing cultures. According to this approach, societies differ in how interpersonal relationships are organized. In individualistic cultures, people are seen as separate entities with little coherence to other members of their society while in collectivistic cultures people are inherently connected to other members of their society. Thus, individualism/collectivism denotes whether a society gives primacy to the individual or the collective.

Other approaches focus less on society as such but rather define culture as the prevalence of certain styles of how the individual construes the self. A prominent example of an individual-level approach to culture is the concept of independent and interdependent self-construal (Markus and Kitayama 2010). While an independent self-construal means that the individual sees himself/herself as a distinct person whose own desires have priority over those of the group, an interdependent self means that the individual sees himself/herself as intricately intertwined with others whose collective desires have priority over one's own ones. Cultures widely differ in how strongly individuals generally pursue an independent or interdependent self-construal.

Across cultures, individuals not only differ systematically in their self-construal but also in the values they endorse. Values can be defined as relatively broad and abstract evaluations of what is desirable (Schwartz 1992). In his influential theory, Schwartz has demonstrated that across a host of cultural groups, values can be clustered into ten value types (e.g., hedonism values, security values) which in turn can be summarized to four second-order value types. Two of these can be used to distinguish reliably between cultural groups in terms of whether people are oriented to live according to their own interests (Openness to change) or adhere to the security provided by their cultural group (Conservation) (Schwartz 1992): Openness to change is more highly endorsed in so-called Western cultures (which also score high in independent self-construal and individualism), while Conservation is more strongly esteemed in so-called non-Western cultures (which also score high in interdependent self-construal and collectivism).

Along these lines, the cultural samples that were selected for the studies on motive-goal congruence that will later be reviewed differ in the extent they endorse Openness to change and Conservation values: Cameroon, Zambia, and People's Republic of China are examples of cultures highly valuing Conservation but having only little esteem for Openness to change values, while the pattern is reverse in Germany. Costa Rica and Hong Kong, on the other hand, are cultures which are characterized by equivalently high Openness to change and Conservation values. That is, all studies on motive-goal congruence reviewed in the following have been conducted with samples from highly diverse cultural backgrounds.

On the basis of such ways of distinguishing cultural groups, a host of studies has been conducted to identify how cultures differ in substantial psychological

variables. For example, there is a multitude of reports on cross-cultural differences in well-being (for an overview, see, e.g., Diener et al. 2003). Indeed, the search for differences has dominated cross-cultural psychology over the past years and decades (as Brouwers et al. 2004, nicely illustrate).

However, research across cultural groups also offers the opportunity to look for what humans have in common despite their various cultural backgrounds (Brown 1991). That is, despite the multitude of ways that culture affects human behavior, there still are some basic behaviors that people universally share. We will illustrate this with a very simple example. People all over the world show the same reaction when experiencing something funny: laughter. But of course this reaction is qualified by cultural rules: How openly may I display my laughter? To which situations do I react with laughter?

Thus, examining cross-cultural differences in behavior certainly is a worthwhile scientific endeavor because it helps promote knowledge and hence understanding between people with different cultural imprint. Also, it helps us understand how culture systematically shapes human behavior. Yet, we propose that cultural invariants must not be overlooked because they help us understand what humans have in common and hence help us understand an aspect of human nature.

Admittedly, we can only make careful statements about whether any given behavior or psychological process is truly universal. Theoretically, it cannot entirely be ruled out that some cultural group not yet examined does not show the same behavior. Imagine a previously unknown tribe is discovered whose members do not laugh in funny situations. Cross-cultural research can nevertheless state with reasonable confidence whether any given behavior can be assumed to be universal (see, e.g., the sheer number of cultural groups that Schwartz's 1992, value model was confirmed in). Such a statement requires a theory-guided selection of cultural groups to be investigated (Van de Vijver and Leung 1997): If a psychological process can be found to be equivalent in cultures differing on important cultural dimensions such as value orientations, it can tentatively be assumed to be universal. As explained above, this condition for testing for universals in human functioning was met by our selection of cultural groups. So, in the following, cross-cultural examples of research on motive-goal congruence which illustrate that an alignment of the explicit and implicit motive system has beneficial effects on people's well-being irrespective of their cultural background will be elaborated on. Please note that all studies specifically tested if test materials (i.e., questionnaire items, picture cues) were suitable for use in the cultural samples under investigation (see Hofer et al. 2005, for procedural details).

## **7 Cross-Cultural Findings on Beneficial Effects of Motive-Goal Congruence**

First evidence for effects of motive congruence on subjective well-being in a non-Western cultural context stems from a study with male adolescents in Zambia (Hofer and Chasiotis 2003). Participants were recruited among the Gwembe Tonga

(see Colson 1960) who originally settled in the southern part of Zambia along the Zambezi River. Despite the social and cultural changes in sub-Saharan Africa that dramatically affect the life of local communities, Gwembe Tonga adolescents still appear to embrace the traditional cultural orientations and values taught by their parents and other older members of the society (e.g., significance of kinship ties; strong feeling of community affiliation).

In the study, 120 adolescents aged between 12 and 21 years provided data on life goals and implicit motives for the motivational domains of achievement, affiliation-intimacy, and power. As a measure of well-being, adolescents' reports on their global life satisfaction were collected. Analyses indicated that commitment to life goals was positively associated with satisfaction with life regardless of the motivational domain. Yet, high evaluations of intimacy-oriented and achievement-oriented life goals were only associated with greater life satisfaction if they occurred in tandem with a strong implicit need for affiliation-intimacy and achievement, respectively. Thus, above all, commitment to achievement- and intimacy-related goals that are able to satisfy corresponding implicit motives when successfully pursued is linked to enhance life satisfaction as those goals are furnished with incentives that give rise to positive affective experiences.

Another genuine cross-cultural study examined the relationship between individuals' life satisfaction and the alignment of implicit motives and value orientations specified as people's prominent guiding principles in life (Hofer et al. 2006). Both, goals and values, are defined as consciously represented psychological constructs. Personal goals and value orientations motivate and direct behavior. However, they differ in their level of abstractness with goals being more in touch with an individual's intentions than values (Schmuck and Sheldon 2001). Moreover, values that reflect culturally prevalent norms to a greater extent mandate how a person ought to act, whereas goals indicate how a person wants to act (Jolibert and Baumgartner 1997).

Hofer and colleagues (2006) collected data on power- and affiliation-related value orientations, corresponding implicit motives, and life satisfaction from 319 adults recruited in the Anglophone part of Cameroon (Bantu peoples), in Costa Rica, and in Germany. Analyses verified that individuals from all three cultural groups reported higher life satisfaction when their high evaluations of guiding principles representing individuals' aspiration for affiliation and a valuing of positive interactions with and a concern for the welfare of close others matched the strength of the implicit affiliation-intimacy motive. A similar effect on life satisfaction was not found for the motivational domain of power.

There is a single cross-cultural study testing effects of motive congruence on well-being that also examines determinants of motive-goal congruence. Hofer et al. (2010a) assumed that across their cultural samples that were recruited in Cameroon, China (Hong Kong), and Germany, individuals' degree of self-determination, defined as a trait-like aspect of personality that reflects being aware of the self's needs and grounding decisions of whether (not) to give way to behavioral impulses relating to this awareness, is associated with an alignment of implicit motives and goals (see also Thrash and Elliot 2002). Thereby, the study exclusively

focused on the motivational domain of achievement. In fact, findings of the study show that regardless of the culture of origin, importance of achievement-related goals corresponds with the strength of the implicit achievement motive more closely among individuals who are obviously able to test their conscious striving for its fit with their implicit motivation. Moreover, it could be shown that importance of motive-congruent goals is associated with global life satisfaction when goals are successfully realized (see Schultheiss et al. 2008).

Two recent cross-cultural studies with adult samples from Cameroon and Germany (Hofer and Busch 2011a, b) provide evidence that strength of implicit motives affects consequences of need satisfaction and lack of need satisfaction, respectively, whereas, for example, research based on SDT (e.g., Deci and Ryan 2008) has impressively shown that higher levels of satisfaction of basic innate needs are reliably related to a variety of indicators of well-being and psychological adjustment. However, differences in need strength are typically not considered in research on need satisfaction.

In a first study (Hofer and Busch 2011a), 259 adult Cameroonian and German participants provided data on implicit achievement and affiliation-intimacy motives, successful need satisfaction of competence and relatedness (autonomy, the third need proposed by SDT, could not be considered in the study as there is no counterpart of the need for autonomy in the implicit motive research tradition), and job and relationship satisfaction. Replicating well-established findings, it was found that need satisfaction of competence was positively associated with higher job satisfaction. Furthermore, need satisfaction of relatedness was positively related to satisfaction in close relationships. However, strength of implicit motives moderated the relationship between need satisfaction and domain-specific well-being measures. In detail, satisfaction of the need for competence and job satisfaction were more closely associated among participants with a pronounced strength of the implicit achievement motive. Moreover, satisfaction of the need for relatedness was associated with enhanced relationship satisfaction only among participants characterized by a pronounced implicit affiliation-intimacy motive. Among participants with a low implicit motive for affiliation-intimacy, need satisfaction was unrelated to satisfaction in close relationships. Most importantly, analyses on equivalence of relationships between psychological constructs verified that the relationships between need satisfaction, implicit motives, and domain-specific well-being measures were not qualified by participants' cultural background: Cameroonian and German participants reported higher domain-specific well-being when the reported level of need satisfaction corresponded to their implicit motive strengths.

In a second study with 273 participants recruited in Cameroon and Germany, the assumption was tested that a lack of need satisfaction entails negative effects particularly for individuals high in implicit motivation (Hofer and Busch 2011b). Thereby, the study focused on the implicit affiliation-intimacy motive as literature indicates the "dark side" of the motive in the face of motive frustration. For example, Mason and Blankenship (1987) report that women with a strong implicit

affiliation motive under highly stressful conditions inflict more psychological and physical abuse on their partner when they have a low tendency to suppress motivational impulses. Hofer and Busch (2011b) tested the assumption that the frustration of the need for relatedness leads to negative experiences (i.e., reported level of envy) and behavior (i.e., indirect aggression against other people) among individuals characterized by a strong implicit motive for affiliation-intimacy. Envy is defined as unpleasant and often painful feelings of inferiority and resentment and develops from an unfavorable outcome of social comparisons (Smith and Kim 2007). Indirect aggressive acts include behaviors such as spreading rumors and backbiting (see Archer and Coyne 2005).

The affiliation-intimacy motive is a composite of two emotional tendencies toward interpersonal relations. The affiliation aspect reflects the tendency to seek company of others to avoid loneliness, while the intimacy aspect reflects the tendency to seek interaction with others to experience warm mutual exchange (see Weinberger et al. 2010, for a recent review). In order to gain a detailed pattern of relationships among psychological constructs, assumptions on effects of need frustration were tested separately for both aspects of the affiliation-intimacy motive.

In line with the hypotheses of the study, low experiences of relatedness were associated with enhanced levels of envy among individuals with a pronounced strength of the affiliative and intimacy component, respectively, of the implicit motive. With respect to indirect aggression, significant results were, above all, found for the affiliative component of the implicit affiliation-intimacy motive: Individuals with a strong implicit fear of rejection showed higher levels of indirect aggression when facing need frustration. All reported effects hold true across both cultural groups, thus pointing again to the prominent role of the implicit affiliation-intimacy motive for interpersonal emotions and behavior in diverse cultural contexts.

Cross-cultural studies reviewed so far, have highlighted the effect of congruence between conscious strivings and implicit motives on well-being for the motivational domains of achievement and affiliation-intimacy, respectively. However, cross-cultural findings on the relationship between personal well-being and motive congruence in the domain of power are less available. In fact, there is no agreement among scholars with respect to positive effects of power-oriented strivings on individual well-being and mental health. For example, proponents of the self-determination approach (Deci and Ryan 2000) argue that the pursuit of power is detrimental to well-being as power is not an intrinsic motive. Having in mind the adaptive function of power in human evolution (MacDonald 1991), others, however, propose that power-related strivings that are aligned to the implicit power motive result in an enhancement of well-being. Brunstein et al. (1998), for example, report that the successful realization of motive-congruent agency-oriented goals (including power-related strivings) is associated with enhanced emotional well-being (see also Schultheiss et al. 2008). Cross-cultural support for the suggestion that the power domain is not an exception in its relation to well-being in that

pursuing power goals is perceived as satisfying if the corresponding implicit motive is strong stems from a study with samples from China (Hong Kong and mainland China) and Germany (Hofer et al. 2010b). In the study, data on the implicit power motive, power values and goals, and basic components of subjective well-being (i.e., mood states and life satisfaction) were assessed. In line with established findings (e.g., Hofer et al. 2006), power values – as well as the interaction between values and implicit motives – did not directly predict variance in individuals' well-being. However, power values had a positive effect on well-being if they were translated into power-oriented goals that fit one's implicit power motive: Power-motivated individuals whose implicit power motive and explicit power goals were better aligned reported more life satisfaction and positive affect. Most importantly, the conjoint effect of the implicit power motive and explicit power goals could be identified in three cultural contexts which widely differ in their approval of personal and institutional power. Thus, implicit motives may universally be considered as a type of weighing disposition determining whether the pursuance of a particular goal is experienced as satisfying and pleasurable.

## 8 Conclusion and Open Questions

In his approach, Winter (1996) proposes that implicit motives constitute one of the major components of personality. Evidence suggests that implicit motives predict individuals' development by shaping long-term behavioral trends (e.g., Winter et al. 1998). Recent research also indicates that these basic inner needs play also a decisive role in leading a happy life as meaning and emotional consequences of consciously represented human strivings are also determined by the satisfaction of implicit motives. Waterman (1992) noted that not all commitments to goals and strivings are an indicator of personal expressiveness (see also Deci and Ryan 2000): Only personal commitments that relate positively to a sense of personal well-being and, thus, allow a feeling of personal fulfillment correspond to the true self of an individual. Thus, implicit motives may be a crucial component of an individual's true self.

Reviewed findings derived from cross-cultural studies on motive-goal congruence impressively show that commitment to and successful realizations of strivings that allow satisfying implicit motives are related to a wide array of indicators of well-being. Moreover, a lack of motive satisfaction, particularly if motive strength is high, seems to result in impairment of well-being and mental health as well as to negative emotional experiences and behavior detrimental to the maintenance of smooth interpersonal relationships.

Undoubtedly, the investigation of the interplay between implicit motives and cognitively represented motivational constructs has begun just recently. We also easily follow the argument that the cultural context represents one of the chief elements affecting what we typically call personality and its obvious implications.

People who grow up in a similar sociocultural context are likely to develop similar beliefs, guiding principles in life, and dispositions concerning meaning and consequences of behavior as they have similar learning experiences (Bond 2004). Yet, we also underline that those culture-bound experiences per se may not result in variability in basic psychological mechanisms or processes.

Even if available cross-cultural evidence on effects of motive congruence on indicators for quality of the personal life supports our argument, further research in a wider range of cultural contexts is indispensable. Thereby, future studies might have a closer look at different components of implicit motives and their – possibly – distinct associations with individuals' well-being. For example, literature on the implicit achievement motive emphasizes that different facets of achievement motivation can be distinguished: hope for success, fear of failure, and fear of success (e.g., McClelland et al. 1953; Schultheiss and Brunstein 2005; similar notes apply to the affiliation-intimacy and the power motive as well). These different aspects of the achievement motive are shaped by experiences with rewarding and punitive parenting techniques in response to a child's early attempts to meet standards of excellence (Rosen and D'Andrade 1959). In other words, individuals high in fear of failure and individuals high in hope for success, respectively, show a preference for mastery experiences, although based on different learning experiences (Schultheiss and Brunstein 2005) and likely to be associated with different affective experiences associated with the satisfaction of the motive: While motive satisfaction leads to positive affective experiences in people high in hope for success, the avoidance of negative affective experiences represents the major force for achievement behavior of people high in fear of failure. Thus, depending on the predominant aspect of a given motive, motive congruence is likely to entail different consequences for individuals' well-being.

Given that we considered implicit motives to represent a decisive component of individuals' true self, a term that is closely associated with a eudaimonic view of well-being (e.g., Ryff and Singer 1998), one has to admit that most research examined effects of motive-goal congruence on hedonic or subjective well-being (Diener et al. 1999). While the eudaimonic approach defines well-being in terms of full (psychological) functioning, the hedonic approach focuses on pleasant emotions, relative lack of unpleasant moods, and life satisfaction. As definitions and attainment of well-being widely differ between both theoretical approaches, future research on effects of alignment and misalignment of motives, respectively, ought to include dimensions of eudaimonic well-being (see, e.g., Hofer et al. 2008).

To sum up, we hope to have shown that an answer to Positive Psychology's big question, "What makes people happy and flourish?" requires a closer look at what people are motivated for. Depending on their implicit motive strength, people can differ in what positive experiences (such as need satisfaction, goal pursuit) have the greatest impact on their emotional and cognitive well-being. This pattern is found for members of a variety of cultural groups. As such, living in accordance with one's implicit motives, that is, pursuing goals that match one's implicit motive structure, has a positive effect on people's quality of life.

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# Chapter 5

## Positive Psychology and Subjective Well-Being Homeostasis: A Critical Examination of Congruence

Robert A. Cummins

### 1 Introduction

The construct of positive psychology was introduced to the literature by Seligman and Csikszentmihalyi in 2000, and the first major empirical study concerning the benefits of training in positive psychology techniques was published 3 years later (Emmons and McCullough 2003). Many subsequent studies on this topic have been reported, and it is timely to consider the weight of their evidence. This chapter critically examines this literature from two perspectives: first, the empirical evidence for efficacy derived from intervention studies involving gratitude and, second, the degree of congruence between intervention outcomes and theoretical predictions derived from homeostasis theory.

This chapter starts by considering definitions of positive psychology and the views of reviewers who have fostered a positive regard for the area. This will be followed by a description of the theory of subjective well-being homeostasis and, in particular, the predictions made by this theory in relation to the limitations of positive psychology interventions. The empirical evidence for the efficacy of such interventions will then be examined using a selected group of influential studies. Finally, the views of other critics will be presented, and the overall balance of evidence and opinion will be presented. It is concluded on the basis of the reviewed studies that the specific benefits claimed for positive psychology interventions have been greatly exaggerated.

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## 2 Definition

The earliest journal articles to describe the idea of positive psychology are within Issue 55 of the *American Psychologist* edited by Seligman and Csikszentmihalyi (2000). In introducing this issue, their description of positive psychology (p. 5) encompasses the universe of positive psychological constructs, which Fredrickson (2001) later abbreviated to, ‘The mission of positive psychology is to understand and foster the factors that allow individuals, communities, and societies to flourish’ (p. 218). However, Seligman (2007) remained more expansive as ‘positive psychology is the study of positive emotion, of engagement, and of meaning, the three aspects that make sense out of the scientifically unwieldy notion of “happiness”. Positive psychology attempts to measure, classify, and build these three aspects of life’ (p. 266).

From the outset, these definitions wrong-foot positive psychology. The first confuses ‘flourishing’ with a morally desirable life (see Sect. 4 of this chapter), while the second uses misleading terminology. It suggests that the affect ‘happy’ can be deconstructed into positive emotion, engagement, and meaning. In fact, the scientific definition of ‘happy’ is a basic affect on the circumplex (see Yik et al. 1999) with no expectation it can be deconstructed. Moreover, the hedonic aspects of well-being (positive emotions) have no simple additive relationship with eudaimonic aspects, such as engagement and meaning, to create a higher-order construct (see Kesebir and Diener 2008). Despite this terminological opacity, the area of positive psychology has received considerable attention from the lay and research communities.

### 2.1 *Positive Reviews of Positive Psychology*

A number of scholars have offered highly positive and uncritical reviews of the positive psychology literature. In the most systematic, Sin and Lyubomirski (2009) performed a meta-analysis on 49 studies which had used positive psychology interventions to relieve depression. They report that the interventions significantly enhanced well-being and were effective for treating depressive symptoms. They found the magnitude of these effects to be medium sized (mean  $r$  effect size = 0.29 for well-being and  $r = 0.31$  for depression) and conclude ‘not only do positive psychology interventions work, they work well.’ (p. 482). In the way of meta-analyses, the authors do not offer critical analysis of individual studies. Several authors of conventional reviews also refrain from critiquing their material. For example, in reviewing gratitude interventions, Wood et al. (2010) state, ‘experimental interventions to increase gratitude...cause higher levels of well-being’ (p. 896), while Lyubomirsky et al. (2005) state, ‘The potential of happiness-enhancing interventions is further reflected in emerging research in the positive psychology

tradition demonstrating that practicing certain *virtues*, such as gratitude... can bring about enhanced well-being' (p. 114). In a similar vein, reviewing positive psychology interventions in adolescents, Norrish and Vella-Brodrick (2009) state, 'there is steadily accumulating evidence for the effectiveness of positive psychology interventions' (p. 276). While these reviewers describe some studies in detail, they do not engage in methodological critiques. They appear to accept authors' conclusions at face value and weave these into a positive story.

Finally in this genre, there are reviews which serve to recommend the incorporation of positive psychology techniques into professional practice. It might be expected that they would project the worthiness of these techniques in the absence of deep analysis, and so it appears to be. For example, in relation to child education, Craig (2007) proposes teaching about optimism training and 'flow', thereby 'providing students with the research findings on what makes for fulfilling flourishing lives' (p. 96). Similarly, Seligman et al. (2009) state, 'There is substantial evidence from well controlled studies that skills that increase resilience, positive emotion, engagement and meaning can be taught to school children' (p. 293). In the area of professional counselling, Harris et al. (2007) introduce positive psychology and claim 'intervention studies also have demonstrated notable reductions in chronic anger (trait-based), perceived stress, and depressive affect compared with randomized wait-list or assessment control groups' (p. 7). In the area of clinical supervision for psychologists, Howard (2008) states, 'Research into concepts from the field of positive psychology... has begun to provide detailed understanding of workers' happiness, health and betterment' (p. 105).

The final section to this chapter will present critical reviews of positive psychology. To set the stage for these critiques, two kinds of information will be presented. First is the theory of homeostasis, and second is an in-depth analysis of some of the key studies whose findings have been uncritically incorporated into the reviews above.

### 3 Subjective Well-Being Homeostasis

The theory of subjective well-being homeostasis spans 15 years of development (Cummins 1995, 2010). It proposes that the major component of SWB is positive mood (homeostatically protected mood: HP Mood; see below). Further, that in a manner analogous to the homeostatic maintenance of body temperature, this positive mood is actively controlled and maintained by automatic neurological and psychological processes (Cummins and Nistico 2002). The strong perfusion of subjective well-being (SWB) by HP Mood means that our experience of SWB is generalized, personalized, and rather abstract. It can be measured by the classic question 'How satisfied are you with your life as a whole?' Given that people are able to respond to this question almost without hesitation, their response is clearly not based on a meticulous cognitive evaluation of their life aspects. Rather, people

respond using HP Mood as information (for the use of affect as information, see Schwarz 1999; Schwarz and Strack 1991). It is this general and abstract sense of positive mood which homeostasis seeks to defend. As a consequence of homeostatic maintenance, subjective well-being has some interesting characteristics.

### ***3.1 SWB Is Normally Stable and Positive***

The stability of SWB at the level of population sample mean scores is remarkable. The Australian Unity Wellbeing Index has been used to monitor the SWB of the Australian population since 2001 using the Personal Wellbeing Index (International Wellbeing Group 2006). A total of 24 surveys were conducted from 2001 to 2010, each involving a new sample of 2000 people (Cummins et al. 2010). All results are standardized to a 0–100 scale, and, using the survey mean scores as data, the average of these surveys is 75 points with a standard deviation of 0.8 points.

To explain this stability in SWB, it is proposed that each person has a set point for their SWB that constitutes a genetically determined, individual difference (see, e.g., Lykken and Tellegen 1996). We propose, on the basis of empirical deduction (Cummins 2010), that the range of set points within large normative samples is from 60 to 90 points, with a mean of 75. We also calculate that each set-point range has a width of about 6 percentage points on either side of its mean. Homeostatic processes seek to maintain SWB within this set-point range for each person.

The assumed normal distribution of set points within large samples, together with the set-point ranges, explains why no population group chosen on the basis of demographic criteria has a reliable SWB higher than about 81–82 points (Cummins et al. 2007b). That is, if all members of a demographically advantaged sample, such as people who are very wealthy and in an intimate relationship, are operating at the top of their respective set-point ranges, then the sample SWB should be about  $75 + 6 = 81$  points.

### ***3.2 SWB Is Homeostatically Protected***

While SWB is normally held positive with remarkable tenacity, it is not immutable. A sufficiently adverse level of challenge can defeat the homeostatic system, and, when this occurs, the level of subjective well-being falls below its homeostatic range, and this is likely to signal depression (Cummins 2010). However, under normal levels of challenge, homeostatic processes maintain SWB within its set-point range for each person through three levels of defence we call ‘buffers’.

The first line of defence is behaviour. People are generally adept at avoiding strong challenges through established life routines that make daily experiences predictable and manageable. However, strong and unexpected events will inevitably

occur from time to time. Such events will shift SWB out of its normal range, as attention shifts to the emotion generated by the event. Such deviations from the set-point range will usually last for a brief period of time, until adaptation occurs. Adaptation to unusual positive challenges is very predictable and well understood (Helson 1964). Adaptation to negative challenges is less certain but is assisted by the buffering capacity of the two 'external buffers' as relationship intimacy and money. Of these two external buffers, the most powerful is a relationship that involves mutual sharing of intimacies and support (Cummins et al. 2007a). Almost universally, the research literature attests to the power of good relationships to moderate the influence of potential stressors on SWB (for reviews, see Henderson 1977; Sarason et al. 1990).

Money is also a powerful external buffer, but there are misconceptions as to what money can and cannot do in relation to SWB. It cannot, for example, shift the set point to create a perpetually happier person. Set points for SWB are genetically determined (Lykken and Tellegen 1996; Røysamb et al. 2002; Stubbe et al. 2005), so in this sense, money cannot buy happiness. No matter how rich someone is, their average level of SWB cannot be sustained higher than a level that lies towards the top of their set-point range. People adapt readily to luxurious living standards, so genetics trumps wealth after a certain level of income has been achieved.

The true power of wealth is to protect well-being through its use as a highly flexible resource (Cummins 2000) that allows people to defend themselves against the negative potential inherent within their environment. Wealthy people pay others to perform tasks they do not wish to do themselves. Poor people, who lack such resources, must fend for themselves to a much greater extent. Poor people, therefore, have a level of SWB that is far more at the mercy of their environment. One consequence is that their mean SWB is lower than average.

While the external buffers assist with homeostatic management of SWB, they are not always successful. If these defences fail, then the experience of SWB moves outside the set-point range, and, when this occurs, it is proposed that the internal buffers are activated. The internal buffers comprise protective cognitive devices designed to minimize the impact of personal failure on positive feelings about the self. Such devices have been variously described as downward social comparisons (Wills 1981), secondary control (Rothbaum et al. 1982), benefit reminding (Affleck and Tennen 1996), and positive reappraisal (Folkman and Moskowitz 2002).

A detailed discussion of these internal buffers in relation to SWB is provided by Cummins and Nistico (2002) and Cummins et al. (2002). Internal buffers protect SWB by altering the way we see ourselves in relation to homeostatic challenge, such that the negative potential in the challenge is deflected away from the core view of self. The ways of thinking that can achieve this are highly varied. For example, one can find meaning in the event ('God is testing me'), fail to take responsibility for the failure ('it was not my fault'), or regard the failure [dropping a fragile object] as unimportant ('I did not need that old vase anyway').

In summary, the combined external and internal buffers ensure that subjective well-being is robustly defended. There is, therefore, considerable stability in the SWB of populations, and, as has been stated, the mean for Western societies like Australia is consistently at about 75 points on a 0–100 scale. But what is the composition of subjective well-being?

### 3.3 *Homeostasis Is Defending HP Mood*

Most contemporary theorists regard the composition of SWB, obtained through a verbal or written response, to involve both affective and cognitive components. This was first recognized by Campbell et al. (1976) who suggested that this amalgam should be measured through questions of ‘satisfaction’ with various aspects of life. This form of question has since become standard for SWB measurement. However, relatively little research has examined the relative contribution of affect and cognition. Whether, as claimed by Diener et al. (2004), SWB represents a dominantly cognitive evaluation is moot. Indeed, to the contrary, more recent research (Blore et al. 2011; Davern et al. 2007; Tomin and Cummins 2011) weighs the balance strongly in favour of affect, in the form of a deep and stable positive mood state we refer to as homeostatically protected mood (HP Mood: Cummins 2010).

A detailed description of HP Mood and its parent construct, core affect, is available from Cummins (in press). The term core affect was coined by Russell (2003) to describe a neurophysiological state that is experienced as a feeling and which may be conceptualized as a deep form of trait affect, or mood. He describes it as analogous to felt body temperature in that it is always there, can be accessed when attention is drawn to it, extremes are most obvious, and it exists without words to describe it. He regarded core affect in conformity with the circumplex model of affect, comprising a blend of hedonic (pleasant-unpleasant) and arousal values (activation-deactivation).

Russell’s description of core affect was as a biologically influenced mood, rather than an emotion. He made it clear that while the feeling of core affect can be consciously accessed, it is not tied to any specific object in the manner of an emotional response. Instead it is a mood state, which refers to how the individual senses themselves in an abstract but personal way. If the perception of the core affect feeling becomes linked to a cause, then the feeling state makes the transition from mood to emotion. However, a more recent account of core affect muddled this distinction. Russell (2009) makes it clear that core affect may be involved in either moods or emotions. He proposes that core affect may become directed at something and, indeed, that core affect may itself be changed by a variety of other influences. Thus, a new term is required that describes the mood/affect associated with homeostasis, and we have proposed the term homeostatically protected mood (HP Mood) for this purpose.

We propose that HP Mood comprises a blend of hedonic (pleasant) and arousal values (activation). The studies cited above show that SWB is highly saturated with HP Mood. We therefore propose that a genetically generated level of HP Mood provides each person with a unique level of felt positivity, which constitutes an individual difference between people. This level represents their ‘set point’ and is the level of positivity that SWB homeostasis seeks to defend.



### 3.4 Normal Ranges

A major implication of homeostasis is that it should be possible to create normal ranges for the variables that comprise, or are heavily saturated with, HP Mood. The most closely defined of these is the normal range for SWB. Two kinds of normal range can be generated, one for individuals and one for normative groups.

The range for individuals is presented within Cummins et al. (2010). Section 2.12 in that publication describes the combined data set derived from 24 independent national surveys conducted between 2001 and 2010 in Australia. SWB is measured through the Well-being Index (International Wellbeing Group 2006), and the number of respondents is 48,225. Their mean is 75.19 points, the standard deviation is 12.40, and so the normal range defined as two SDs around the mean is 50.39–99.99 points. Thus, the normal range for individuals fits the positive sector of the standardized 0–100 range.

The normal range for groups is derived by using the survey mean scores as data. Thus, combining the 24 survey means yields a grand mean of 75.17 points, an SD of 0.76, and a normal range for groups of 73.65–76.69, which is a range of just 3.04 points. However, this range has been achieved through the use of constant methodology and a stable population. When the criteria for data collection are relaxed, the range naturally expands. Cummins (1995, 1998) determined that the normal SWB range for Western nations is 70–80 points, while the range for a broader set of countries was determined as 60–80 points. This applied equally for single-item scales (‘satisfaction with life as a whole’) and multi-domain scales.

The normal range for the Satisfaction with Life Scale (Diener et al. 1985) is about 5–10 points lower than the above estimates, caused by the extreme nature of the item wording and the consequential avoidance of the extreme upper end of the response scale. Numerous studies have shown that the normal range for this scale is about 65–75 points. For example, survey data collected by our team in 2004 from a general Australian population sample of 557 respondents produced a mean of 69.4 points. Other results from comparable cultural groups have been reported by Renn et al. (2009) [Austrian medical students – 72.0 points]; Koo and Oishi (2009) [European American college students – 67.3]; Proctor et al. (2011) [English undergraduate students – 66.1]; and Christopher and Gilbert (2010) [USA college students – 62.7 points].

The final normal range to be estimated is for positive affect (PA) and negative affect (NA). PA tends to approximate the 70–80-point range for SWB measured through questions of satisfaction, while NA tends to be the reciprocal. However, choosing specific affects for the purpose of creating measurement scales is uncertain territory. The only commonly used list is that of the Positive and Negative Affect Schedule (PANAS: Watson et al. 1988). This is a 20-item self-report measure made up of two subscales each comprising ten items: ten positive affects (PA: interested, excited, strong, enthusiastic, proud, alert, inspired, determined,

attentive, and active) and ten negative affects (NA: distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid), each of which is normally rated 1–5. The problem with this scale is that it only samples affects from the activated half of the circumplex model (Yik et al. 1999) and thus excludes the deactivated affects such as contented and sad.

Some data are as follows: Proctor et al. (2011), PANAS, English undergraduates,  $N = 135$ , PA = 49.75 (12.71), and NA = 29.25 (9.46); Culbertson et al. (2010), PANAS, USA employed,  $N = 102$  and PA = 67.50 (11.68); and Curhan et al. (2010), home-made scale, elite graduate students,  $N = 387$ , PA = 71.50 (12.41), and NA = 27.25 (11.73). The PA for the English undergraduates appears anomalous, but otherwise, the means are much as predicted.

In summary, while these ranges are rough and ready, they do give ballpark views as to the normal ranges as follows: SWB, Satisfaction with Life Scale, and PA 65–80 points; NA 20–30 points. It is a reasonable assumption that results lying outside these ranges are likely to be abnormal. This information will be used in the evaluations of positive psychology interventions to follow.

### 3.5 The Implications of Homeostasis for Positive Psychology

The operation of homeostasis makes the following predictions in relation to positive psychology research:

1. No group comprising people selected at random will be able to sustain a level of SWB that exceeds 82 points.  
*Rationale:* Assuming that (a) the sample contains a normal distribution of set points between 60 and 90 points and (b) that the group is initially operating at the population average of 75 points and (c) a 12-point range around each set point. Then  $75 + 6 = 81$  points.
2. For a group of people operating normally within their set-point range, it will not be possible to cause them to sustain an increased level of SWB exceeding about 6 points.  
*Rationale:* See above.
3. For people suffering homeostatic defeat, a successful intervention will be able to raise their SWB to the point that they regain homeostatic control.  
*Implication:* Groups with initially very low levels of SWB will show dramatic increases in SWB after a successful intervention.
4. Groups with initially low levels of SWB will be highly sensitive to the effects of interventions, as the provision of coping resources assists the return of homeostatic control.  
*Implication:* For groups with a low initial level of SWB, almost any supportive intervention is likely to be effective in raising SWB. This is because the new resources provided by the intervention are working together with the homeostatic processes to restore SWB back into its normal range. Importantly, this

'low-baseline sensitivity' means that many forms of intervention will be effective in raising SWB. This has been found in a 'gratitude' intervention by Froh et al. (2009b) and in the treatment of depression by Sin and Lyubomirski (2009) and Seligman et al. (2009). One implication is that little useful information is gained by studies using a single form of intervention. It is likely that most will be effective, and so comparisons between different intervention techniques are required to determine relative efficacy.

## 4 Evidence for the Claims of Positive Psychology

What follows in this section is not intended as a comprehensive coverage of evidence for the efficacy of positive psychology techniques. Rather, some influential articles related to gratitude training have been selected based on citation ratings, and they have been submitted to detailed analysis. The purpose of this analysis is to establish whether the claims made by the authors in their abstracts and discussions can be reasonably supported from their results.

A further perspective onto the selection of papers is the distinction between common sense and surprise. The former applies to interventions that have obvious substance, to a level such that most reasonable people would expect the generation of at least some positive outcome. For example, Kirschman et al. (2010) report that an intensive 6-week day camp, teaching dance and life skills to disadvantaged youth, resulted in enhanced levels of hope. This is a common sense result, and such studies will not be further considered here.

Of more interest are the surprising reports, where the link between the intervention and the reported outcome is not intuitive. These are the studies where an intervention seems so insubstantial that most reasonable people would be surprised at the production of a reliable positive outcome. Of course there is a continuum of intervention intensity between common sense and surprise. From their meta-analysis, Sin and Lyubomirski (2009) describe such a continuum concerning the personalized nature of the intervention, being strongest with individual therapy and least with self-administered programmes. They also found that longer interventions were more effective than shorter ones. So the concentration of this review is on the claims made by the use of the least intensive interventions and will be described for each study evaluated.

Just why the surprise studies are so surprising is informed by an excellent intervention study by Seligman et al. (2009). This provides an informed view of how hard it is to make a long-term difference through positive psychology interventions. This ambitious project involved screening first-year undergraduate students, over three intake-years, on the basis of *being at risk for depression* determined by low scores on the Attributional Style Questionnaire (Seligman et al. 1979). The 231 selected students were separated into intervention and control groups. Students in the intervention group were given intensive training and long-term follow-up. The training involved 2-h sessions per week over 8 weeks, in small

groups, learning positive psychological techniques such as secondary control, behavioural activation strategies, stress management, and interpersonal skills. In addition, individual trainer-contact was made on six occasions both during the training period and into their second year at university.

Students were assessed on a battery of measures at baseline and over the next 3 years. The major question of interest was whether the intervention would protect these vulnerable students from developing depression measured through self-assessment (Beck Depression Inventory: Beck et al. 1961) and by clinical assessment (the 17-item clinician-rated Structured Interview Guide for the Hamilton Depression Rating Scale: Hamilton 1960). The depression scores submitted to analysis were determined on the basis of a complex derived value, where 1–2 was normal and 3–6 was depressed. When the outcome was judged using BDI scores of 3–6, it was found that the groups did not statistically differ, with 40% of the intervention group and 48% of the control group developing depression sometime during the 3-year period. However, when the authors separated the scores to reflect just ‘moderate’ depression, determined as a score of 3, they found a significantly lower proportion in the intervention group ( $p < .03$ ). Curiously, the groups did not differ in the proportion of people who developed more severe depression (scores 4–6). Moreover, these differences were not evident from the clinician-rated Hamilton ratings of depression. Pretty clearly, despite the huge effort that had gone into the intervention, the result was, at best, a very marginal demonstration of advantage.

Assessments of the positive psychology literature, according to Seligman (2007), should follow conventional scientific criteria. He writes, ‘positive psychology is rooted in empirical research. It uses traditional methods of psychometrically established measurement, of experiments, of longitudinal research, and of random assignment, placebo-controlled outcome studies to evaluate whether interventions work. It discards those that do not pass these gold standards as ineffective and it hones those that do pass (Seligman et al. 2005, p. 266)’. So, the following section follows this lead to see how the surprising studies in positive psychology stand up to close scrutiny.

*Gratitude.* An excellent account of the definition and meaning of ‘gratitude’ is provided by Emmons and McCullough (2003), who also conducted the first systematic research into whether ‘counting one’s blessings’ yields enhanced well-being. Among the definitions they favour is ‘an estimate of gain coupled with the judgment that someone else is responsible for that gain’ (Solomon 1977, p. 316). However, their restriction to ‘someone else’ is too narrow since a religious person may attribute their ‘estimate of gain’ to their God. Rephrasing yields ‘an estimate of gain coupled with a causal attribution directed to someone or entity other than the self.’ This definition denotes a purely cognitive appraisal. Emmons and McCullough (2003) also note, however, that gratitude ‘stems from the perception of a *positive* personal outcome’ (p. 377). So, combining these ideas yields the following working definition: ‘gratitude yields positive affect, resulting from an estimate of gain, where the causal attribution is directed to someone or some entity other than the self.’

Deciding on a clear definition is a crucial first step for advancing understanding. Consider, for example, the definition offered by Wood et al. (2010) who suggest 'it involves noticing and appreciating positives in the world' (p. 890). This is so broad as to include all positive affective states that are consciously experienced. This definition has lost the specific nature of 'gratitude' and can include positive experiences with no cognitive content, such as basking on a warm beach.

*Does gratitude advantage the self?* Gratitude gets a good rap from almost everyone. A North American study of over 800 descriptive trait words found it was rated in the top 4% in terms of likeability (Dumas et al. 2002). Moreover, reviewers of the empirical literature inevitably find that gratitude is strongly related to well-being (e.g., Wood et al. 2010). Curiously, however, as noted by Emmons and McCullough (2003), its positive utility in relation to the self is ambiguous. In order to feel gratitude, the person must recognize that they are the recipient of good fortune due to someone or some entity that has acted on their behalf. This means feeling indebted to that someone or entity, thereby acknowledging a debt to be repaid.

The state of indebtedness is commonly experienced as unpleasant and aversive (e.g., Greenberg and Westcott 1983). Therefore, making people experience gratitude may be a negative experience. If it creates the recognition of unwanted obligations, then people may develop strong negative feelings against the causal agent (Elster 1999). In this context, the activity of writing a gratitude letter (see below) is interesting because the act of writing constitutes debt repayment which, presumably, negates the negative potential of gratitude acknowledgement.

*Mood induction using gratitude.* Underlying the rationale for using gratitude acknowledgement to enhance well-being is the assumption that such cognition is a positive experience. The above section indicates that this may not necessarily be so, so its ability to induce positive mood as a simple cognitive exercise is uncertain. Positive mood induction is a routine procedure which may involve, for example, a monetary surprise (Hicks et al. 2010) or watching a movie clip (Forgas et al. 2005). So, how does 'gratitude' rate as a means of mood induction?

To answer this question, Watkins et al. (2003) conducted two intervention studies. In the first, two groups of students were given 5 min to either recall things they did over summer for which they felt grateful (gratitude), or things they wished they could have done, but did not do (disappointment). A battery of nine before and after measures showed that only one, reduced negative affect, was significantly different at  $p < .05$ . Moreover, as the authors point out, this result was due to increased negative affect of the control group and so was not relevant to the 'gratitude' condition. Nevertheless, this result has been misinterpreted by reviewers as 'those who focused on what they were grateful for reported less negative affect' (Wood et al. 2010, p. 898).

Their second study involved three gratitude groups as: thinking about gratitude, writing about gratitude, and writing a gratitude letter. All three conditions showed higher activated positive affect (PANAS change score) after 5 min of the respective activity, while a group with a neutral-negative task (writing about the layout of their living room) showed no change. However, no pretreatment means are provided, and

the levels of significance for each group difference are not provided. Despite this weak evidence and the absence of a 'gratitude' effect in their first study, the authors state, 'in two studies we found that gratitude interventions improved mood' (p. 448).

In summary, both theory and empirical data show that acknowledging gratitude has weak potential to induce positive mood. This was noted by Koo et al. (2008) who thought one reason may be adaptation. That is, even though one can, on demand, recall a positive happening in one's life, the emotional attachment to the happening is weak because it has been assimilated into the milieu of 'self' and therefore appears just part of normal life. As an alternative approach to enhancing SWB, they offer the 'George Bailey effect'. This uses counterfactual reasoning (Roese 1997) to imagine how life would be without the positive happening, rather than with it. Their study involved three groups, gratitude, imagined absence, and no-task control group. Immediately after the task, participants rated a set of 13 affects, both positive and negative (reverse scored). This yielded 67.7 points for the no-task control group, 69.2 points (*ns*) for the gratitude group, and 77.8 points for the absence group, which is higher than both of the other groups. No pretesting was employed. A second study essentially replicated this result. A third study incorporating pretest measures showed that people in the absence condition rated higher happiness with their romantic relationship. This set of studies is quite convincing in showing that imagining absence, rather than gratitude, is a stronger influence on mood induction. It is also consistent with adaptation theory.

*Long-term interventions.* Given the uncertain personal advantage of generated gratitude presented above and the weak mood-induction capacity of gratitude, it would be surprising indeed if a few periods of 'counting one's blessings' would have a lasting influence on well-being. This proposition, however, was first tested by Emmons and McCullough (2003) in a series of three studies. The first two involved college students and so may be considered to approximately represent the general population. The third involved a medically compromised group and will be considered separately. The first study allocated students to one of three groups, each with a different weekly task: to write a list of five things during the past week that they were grateful for, a list of the five things that had hassled them, or a list of five self-chosen events (their 'neutral' condition).

They measured 30 affect items assessing mood (the extent to which each has been experienced over the past week) and used these to generate three summary variables: (a) a composite measure of gratitude, comprising the adjectives grateful, thankful, appreciative; (b) positive affect; and (c) negative affect. Three other dependent variables are (d) perceived health, (e) satisfaction with life as a whole, and (f) optimism for the forthcoming week. Thus, a total of six measures were made, with the results of each summed over the nine weeks of effective data collection.

Their second study had a similar design except that (a) diaries were kept on a daily basis over a 2-week period and (b) the life events group was replaced with a downward social comparison group, where they listed the ways they were better off than others. All data were aggregated across 13 days and involved variables

(a), (b), and (c), together with other variables that will not be considered here and which failed to show a simple advantage to the gratitude group. In sum, these two studies yield nine separate analyses of variance (ANOVAs) involving the variables of interest. These compared the outcome from three forms of intervention, which always involved the gratitude and the hassles conditions. Of the nine ANOVAs, only two showed a significant advantage for the gratitude group. Both were from study 1 and both significant at  $p < .05$  (life as a whole and optimism). However, due to the lack of baseline measures, it is not possible to deduce whether the gratitude condition had elevated scores or whether the hassles and life events had depressed scores.

Their final study involved people with either congenital or adult-onset neuromuscular diseases. The intervention comprised two conditions as either the gratitude condition used in study 2 or a control condition, in which participants completed the affect, well-being, and global appraisals *only*, each day. Over 21 days, they measured the same set of affects, life as a whole and optimism, as in study 1. The authors report significantly improved scores on all variables for the gratitude group, relative to the control group. While interpretation of this result is uncertain since no baseline measures are reported, insight can be gained by referring to the normal range.

These participants rated satisfaction with their 'life as a whole' from  $-3$  to  $+3$ , yet the mean score of the control group in their Table 5 is 4.80. Clearly some data transformation had been conducted, but this is not described. Assuming they had rescored the scale from 1 (replacing  $-3$ ) and assuming their scales had the form  $-3 -2 -1 0 +1 +2 +3$ , then a rescaled range would be from 1 to 7. If this is so, then conversion to a 0–100 scale (International Wellbeing Group 2006, p. 17) yields 63.3 points, which is below the normal range of 65–80 points (Section 2.4), while the gratitude group mean (5.54) yields 75.7 points. Thus, if it is assumed that the control group mean of 63.3 points at follow-up approximated both groups at baseline, then the intervention succeeded in raising the SWB of the gratitude group back into its normal range.

This result would be consistent with a principle from homeostasis theory (Section 2.5) that while interventions cannot cause SWB to be maintained above each set-point range for any protracted period, a successful intervention may restore SWB from a depressed state back to its normal level. Notably, however, the results from all three studies shed a cautionary light on the authors' statement, in their abstract, that 'The gratitude-outlook groups exhibited heightened well-being across several, though not all, of the outcome measures across the three studies, relative to the comparison groups' (p. 377). This is hardly true of the first two studies while the third involved people with low-baseline well-being.

Another widely cited study on the use of gratitude lists is Froh et al. (2008). School children (11–14 years) were randomly assigned to one of three groups over a 10-day, classroom-based intervention, Monday to Friday over 2 weeks: (1) listing up to five things for which they felt grateful, (2) listing five hassles, and (3) no-treatment control. Data were collected at pretest, immediate posttest, and follow-up at 3-weeks following the last intervention day. The abstract to this paper states,



'Results indicated that counting blessings was associated with enhanced self-reported gratitude, optimism, life satisfaction, and decreased negative affect' (p. 213). However, this misrepresents their results.

Consider first 'life satisfaction'. This was measured in three ways: Two items measured 'life as a whole during the past few weeks' and 'how they expected to feel about their life next week'. They also used the 5-item Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS) (Seligson et al. 2003). However, even though they state, 'Overall life satisfaction composites were created by summing the five items' (p. 11), the only results that achieved significance from this scale were obtained by using individual items. Their Tables 3 and 4 report their significant results. Each time period involved eight variables (life as a whole, expected life, BMSLSS total, and 5 BMSLSS items) analysed through univariate ANOVAs across the three groups within each time period. No pretest comparisons are provided. A total 16 ANOVAs were run, with 8 at each of posttest and follow-up. Of these only two were significant at posttest and three at follow-up, all at  $p < .05$ , so 69% of these comparisons failed to reach significance. Of the ones that did, only two ANOVAs, *both involving the same single item* from the BMSLSS 'satisfaction with school experience', showed the intervention group to have higher satisfaction than both the hassles and control groups. Notably, levels of life satisfaction did not distinguish between the groups.

In terms of the other variables, the measures of gratitude, optimism, and negative affect, analysed as above, failed to show a clear advantage for the intervention group over the other two groups. In summary, the results within this paper fail to support the claims made in the abstract.

In the following year, Froh et al. (2009a) published another study in which they claim that a gratitude intervention raised positive affect (PA) more than a control condition at 2-month follow-up. However, this effect was confined to adolescents with low initial levels of PA. For a period of 10–15 min on 5 days scattered within two consecutive weeks, students composed a gratitude letter, while a control group wrote about what they did yesterday. Sometime before the end of the second week, the students read their gratitude letter to their benefactor and completed a second measure of PA. Follow-up data were collected at 1 and 2 months later. The authors initially found no significant effect. However, when they split the sample into high, medium, and low PA groups at baseline, the intervention had a significant effect for the low-baseline group.

There are several features of this study which make the reliability of this result uncertain. First, the groups were small (gratitude  $N = 44$ ; control  $N = 45$ ) and would have become very small indeed when split into low, medium, and high PA. While the size of these subgroups is not provided, the application of hierarchical regression to find the significant result is permissive of type I errors, as the authors acknowledge. Second, their baseline PA of 52.2 units converts to 87.5 points, which is extremely high (see above). This may indicate acquiescent responding by some children. Even though the authors employed the PANAS-C (Laurent et al. 1999) it is quite possible that some of their youngest children (Grade 3) did not understand some items and simply responded, in an acquiescent manner, at the top of the response scale. Third, while the 2-month follow-up was significant for the



low-baseline group, the 1-month follow-up was not. Since there is no theoretical reason to expect the effect of the intervention to increase with time after intervention, it is possible that the significant result is unreliable.

In summary, these key studies hardly inspire confidence that a gratitude intervention can be expected to have long-term effects. This is quite consistent with expectations based on the weak power of gratitude as a positive mood inducer and homeostasis theory. However, such is the strength of belief in gratitude interventions, many reviewers seem blinded to flaws in supportive publications and even report hearsay as evidence. In their review, Wood et al. (2010) cite Seligman (2005) as finding that ‘the effects of gratitude lists persisted up to 6 months’ (p. 897), with this statement based on the primary author’s recollection of a verbal conference presentation and no published documentation (Wood, personal communication, 2nd May 2011).

#### ***4.1 Meditation and Mindfulness***

A different form of gratitude intervention incorporates the use of meditation or mindfulness. Described by Fredrickson et al. (2008), ‘Loving-kindness meditation’ is a form of meditation where people initially ‘focus on their heart region’ contemplating a person for whom they feel warm and tender feelings. They then extend these feelings, first to themselves and then to an ever-widening circle of others. Their study applied this technique to employees of a large company who volunteered for a study on ‘the benefits of meditation...[to] reduce stress’ (p. 1048). Thus, they were likely to attract people positively disposed to meditation and who were feeling stressed. Each day over 9 weeks, participants visited a secure website to report their emotions and time spent in ‘meditation, prayer, or solo spiritual activity’ (p. 1048) over the past day. The study employed multiple measures of outcome with data collected prior to the intervention and 1 week after it ended. They found a significant increase in most measures.

The major problem for the interpretation of results lies in the very low levels of well-being at baseline. These show an initial value of about 52 points, rising to about 58 points after the intervention. Since the normal range for the Satisfaction with Life Scale is about 65–80 points (see above), it is clear that at baseline the participants were, indeed, stressed and in homeostatic defeat, being some 13 or more points below the base of the normal range. Because of this, it is unsurprising that this intervention caused SWB to briefly rise. It is likely that almost any intervention would have been at least as effective under the circumstances and, notably, the intervention did not return these people to their normal range of values.

In summary, these cited authors who have used gratitude and mindfulness interventions have all published positive and affirmative statement of outcome, which has been uncritically accepted as evidence for the special efficacy of positive psychology techniques by many authors. However, a detailed examination of their studies has failed to show results that inspire confidence. Other authors have also been critical of such studies and the area in general.

## 5 Other Critiques and Summary

The critiques of positive psychology come from several different viewpoints. Some concern a moral perspective (Fowers 2008; Martin 2007; Sundararajan 2008), taking exception to the definitions of positive psychology offered in the Introduction as though they describe a good life. Sundararajan points out, as also has Seligman (2002), that all of the attributes of positive emotion, engagement, meaning, and flourishing can be achieved by evil people doing evil deeds willingly and well. In a similar vein, Fowers and Martin argue that positive psychologists present virtue incompletely, focusing on a few ‘signature strengths’. Virtue ethicists, on the other hand, emphasize the unity of character and the development of a full range of virtues. Thus, all three reviewers decry positive psychology for representing the good life devoid of a moral map.

From a humanist perspective, Held (2004) lashes the ‘tyranny of the positive attitude’ and notes the vital importance of negative affect in human functioning. In the field of education, Suissa (2008) points to obscurity in the meaning of happiness, as used in positive psychology and notes the introduced confusion between education and therapy. For Miller (2008), concern lies with the exemplary characteristics championed by positive psychology and argues that ‘The model of mental health depicted by positive psychology turns out to be little more than a caricature of an extravert’ (p. 606).

While it has taken longer for empirical critiques to emerge, Coyne et al. (2010) present a heavy critique of conclusions reached by reviewers Aspinwall and Tedeschi (2010), who concluded support for the idea that positive psychological states predict health. Coyne et al. (2010) take exception to these authors’ ‘uncritical acceptance of the claims made in the literature, which we have shown to be biased in publication of positive findings, regardless of the quality of studies, biased in its portrayal of findings in subsequent publications, and exclusion of null and negative findings’ (p. 39).

In summary, it seems clear that the literature reviewed in this chapter is most disappointing. It does not hold up as a philosophy of desirable human functioning, and the claim of special efficacy for positive psychology training, at least in the form of gratitude or ‘loving-kindness meditation’, has yet to be substantiated. Certainly such techniques may raise the well-being of people in homeostatic defeat, at least on a short-term basis, and this might be considered as a realistic therapeutic goal. However, as argued above, a wide variety of other interventions are probably just as effective. The crucial demonstration that positive psychology techniques are superior has yet to be reported.

It is disturbing that so many academic authors continue to cite these studies in the absence of critical appraisal. This is especially so since homeostasis theory explains why positive psychology interventions are likely to be *effective* for people with abnormally low well-being and *ineffective* for people with normal range well-being. Homeostasis theory also explains why these techniques may have a

useful role to build resilience, through strengthening the internal buffers. However, whether the skills taught by positive psychology can effectively assist people to avoid depression remains to be seen. Certainly the Seligman et al. (2009) study, described earlier, presages that such training will need to be intensive, rather than surprising, if it is going to be effective.

The substantial critiques of positive psychology included in this chapter have not been answered within the academic literature. In the spirit of informed debate, it is surely time for the apologists to do so.

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# Chapter 6

## Life Satisfaction in Adults: The Effect of Religiosity, Worry, and Perceived Physical Health State

Maria Platsidou

### 1 Introduction

Over the last decades, the association between psychological well-being and religiosity has acquired a renewed interest in psychological research and remains a complex and intriguing area for investigation. Religiosity has been operationalized in different ways in various studies. Most of these studies have found that religiosity is positively, albeit weakly, associated with subjective well-being (Kim-Prieto and Diener 2009; Powell et al. 2003). Nevertheless, research findings are often contradictory and appear to depend on the measures employed and the sample studied. Moreover, research on the association between religiosity and subjective well-being has been carried out with Protestant or Catholic Christian samples, while research concerning Greek Orthodox Christians is sparse.

The present study examined life satisfaction – a component of subjective well-being – and its relations with religiosity, worry, and perceived physical health state in a sample of Greek Orthodox Christian adults. Specifically, it examined the possible mediating role of worry and perceived physical health state in the relation between religiosity and life satisfaction. Also, it explored individual differences in relation to these measures. In what follows, I will first refer to conceptualizations of life satisfaction and religiosity as well as significant factors affecting them. Then, an empirical study will be presented that aimed to reveal the relation between different aspects of life satisfaction and religiosity and the mediating role of worry and perceived physical health state.

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## 2 Life Satisfaction and Other Components of Subjective Well-Being

Subjective well-being refers to the subjective assessment of quality of life or, in other words, how people evaluate their lives. These evaluations can be both cognitive and affective and refer to life as a whole and/or to specific domains of it such as work or marriage (Diener et al. 1999). Subjective well-being involves a number of distinct components: life satisfaction (global judgments of one's life), satisfaction with important life domains (e.g., work satisfaction), positive affect (experiencing pleasant emotions and moods), and low levels of negative affect (experiencing few unpleasant emotions and moods) (Diener 2000). Life satisfaction, in particular, is an overall assessment of feelings about, and attitudes toward, one's life at a particular point in time and ranges from negative to positive; it comprises the desire to change one's life, satisfaction with past achievements, optimism for the future, significant others' perceptions of one's life, etc. (Diener 1984).

Research on life satisfaction and related concepts is extensive, and theoretical debates over the nature and stability of life satisfaction continue. A common finding, though, is that most people report they are "somewhat" happy or/and satisfied with their lives even in face of great difficulties; in other words, they claim they are moderately to very satisfied with their lives and describe themselves as quite to very happy (Diener et al. 1999; Watson 2000). Yet, if life satisfaction differs among different domains of one's life, then the question is whether the factors that affect life satisfaction have differential effects depending on the domain of one's life involved. In this study, three aspects of life satisfaction were investigated: satisfaction with one's personal/emotional and social life and satisfaction derived from attainment of one's goals.

Subjective well-being also involves perceptions of physical and mental health and meaning in life (Diener & Ryan, 2009). Perceived (self-rated) health state is included in most of the subjective well-being measures (Kahneman and Krueger 2006). Health perceptions and subjective well-being are positively and significantly related (Okun et al. 1984). Moreover, high positive affect and low negative affect are beneficial to health and longevity (Diener and Chan 2011). This implies that, besides physical health, psychological or affective states, such as worry (negative affect) or lack of it, may contribute to different aspects of life satisfaction in different ways. Furthermore, affective factors, such as worry, should have an effect on perceptions of physical health.

Meaning in life is typically seen as a distinct component of subjective well-being, related more to what is called "psychological" or "eudaimonic" well-being than to hedonic or subjective well-being (Martos et al. 2010; Ryan and Deci 2001). Meaning in life reflects the subjective experience of meaningfulness or purpose in one's life – something critical for human flourishing (Ryff and Singer 1998). There are also associations between meaning in life and a variety of health indicators, such as lower mortality rate (Boyle et al. 2009) and better self-rated physical health state (Steger et al. 2009). In this study, meaning in life was not directly assessed;



rather the emphasis was on religiosity. Meaning in life, however, appears to be an important factor that links religiosity to mental health and well-being (George et al. 2002; Martos et al. 2010; Steger and Frazier 2005). The assumption was that religiosity, by providing meaning in life, would influence both people's affective state (e.g., less worry) and life satisfaction.

### 3 Religiosity and Life Satisfaction

Religiosity presumably represents an important aspect of human personality (Unterrainer et al. 2010). It plays a significant role in how people construct their beliefs of what is important in life and shape the way they view the world, life, and self (Park 2005). In most of the studies, religiosity appears to have beneficial effects on subjective well-being, although the benefits vary among individuals (Pavot and Diener 2004). More specifically, as regards the relations between subjective well-being and religiosity, several studies have found that different indicators of subjective well-being, such as life satisfaction (Cohen et al. 2005a; Diener and Clifton 2002), subjective mental and physical health (Karademas 2010; Strawbridge et al. 2001), and experience of positive and negative emotions (Kim-Prieto and Diener 2009), are positively associated with religiosity dimensions, such as personal beliefs about God, devotion, participation in religious activities, and religious salience (the perceived importance of religion in one's life) (Leondari and Gialamas 2009). In addition, it has been found that religiosity is positively associated with a reduced likelihood of anxiety disorders and depression (Koenig et al. 1993; Miller and Gur 2002). Moreover, religiosity has been found to have direct effects on health state and psychological well-being as well as indirect effects on well-being through health state (Levin and Chatters 1998).

Contrary to the evidence mentioned above, other studies showed that higher levels of religiosity are associated with higher personal distress (Dezutter et al. 2006; King and Schafer 1992). Furthermore, in a number of studies, no correlations were found between religiosity and measures of psychological well-being such as mental health, perceived physical health, loneliness, stress, or depression (Bergin 1991; Daaleman et al. 2004; Leondari and Gialamas 2009; O'Connor et al. 2003). It is also worth noting an apparently odd result found in a sample of Northern Irish students (Lewis et al. 1996). Although Irish youth is the most religious youth in Europe (followed by the Greek) (Vernadakis 2002), no evidence was found that individuals with a more positive attitude toward the Christian religion or a greater frequency of church attendance were more satisfied with their lives than the nonreligious groups.

As Emmons et al. (1998, p. 404) state, "one conclusion that is frequently drawn from the literature on well-being and religiosity is that the measures of religiousness employed and the components of well-being under examination matter. Indeed, depending upon the measures used, researchers can potentially document helpful, harmful, or no effects of religiousness on well-being". Moreover, these relations

may vary depending on gender and possibly on one's religious denomination. For example, women were found to score higher in religiosity measures than men in Greek Orthodox Christians (Leondari and Gialamas 2009), and this is true for other denominations as well (Beit-Hallahmi and Argyle 1997; Diener and Clifton 2002).

Cohen et al. (2005b) pointed out that religiosity measures often focus either on religious involvement and behavior or on religious beliefs and attitudes. Cohen and his colleagues pinpoint that the most commonly used religiosity scales have been constructed for American Protestant denominations; because they are strongly related to individualism, Protestant denominations privilege private motivations for religion over social ones. However, certain religions, such as Christian Orthodoxy, Judaism, and Catholicism, are more collectivist in conception. They recognize social motivations and structural practices as being normative to the same degree as private, emotional motivations for religion. This suggests that the conceptualization of religiosity may differ across various cultures and traditions (de St. Aubin 1999).

### ***3.1 Religiosity in Greece***

Most of the empirical data on the association between religiosity and subjective well-being have been derived from Protestant or Catholic Christian samples. In the Greek Orthodox Christian context, only one study has been published recently on religiosity and subjective well-being (Leondari and Gialamas 2009). It was found that individuals who prayed more often reported being more anxious, while those attending church services more frequently expressed greater life satisfaction. To understand these findings, it is important to have the broader picture of the relations of Greek people with the Orthodox religion and the Orthodox Church. The Orthodox religion accounts for a strong share of the ethnic and cultural identity of Greek people (Stavarakakis 2002). Despite this, Leondari and Gialamas (2009) found that among 363 participants aged 18–48, the majority (97.2%) reported that they believed in a “personal” God or in an impersonal force and at the same time that religion was important or very important to them (about 78%). Many of the participants stated that they attended church only a few times a year (59.7%), and some of them never or rarely prayed (18%). In his review of religiosity of Greek people during the years 1963–1997 prepared for the Greek Helsinki Monitor, Demetras (n.d.) found similar to the above findings, that is, although Greeks declare high commitment to God and moderate commitment to Christian Orthodoxy, they admit low commitment to the Orthodox Church and religious practices. In a typology of Greeks according to their religiosity, 30% were classified as religious and frequent church attenders, 44% as religious but infrequent attenders, and 10% as religious but nonattenders. Based on the above, it seems that for Greek people religiosity in the sense of church attendance is not the same as belief in God or praying, and this may explain the findings of Leondari and Gialamas (2009).

To sum up, there are two aspects of religiosity, belief in God and participation in religious practices. In Greeks, these two aspects of religiosity seem not to be highly associated. Therefore, it is important to know which aspect of religiosity is related to life satisfaction and specifically to satisfaction with one's personal/emotional life, social life, and satisfaction from attainment of one's goal.

## 4 Aims and Hypotheses of the Study

The present study aimed at investigating the relationships between different dimensions of life satisfaction and the two main aspects of religiosity, worry – as indicator of mental health – and perceived physical health state. According to the empirical evidence reviewed earlier, life satisfaction was expected to be positively related to religiosity (hypothesis 1) and perceived physical health state (hypothesis 2) and negatively related to worry (hypothesis 3) (Cohen et al. 2005a; Diener 2000; Diener and Clifton 2002; Levin and Chatters 1998). Specifically, belief in God was hypothesized to predict satisfaction with personal/emotional and with goal-related life, while participation in religious activities was hypothesized to predict satisfaction with social life (hypothesis 4) (Cohen et al. 2005a; Diener and Clifton 2002; Leondari and Gialamas 2009; Levin and Chatters 1998). Perceived physical health state was assumed to predict personal/emotional life satisfaction (hypothesis 5) (Karademas 2010; Strawbridge et al. 2001). Finally, worry was hypothesized to predict life satisfaction dimensions (hypothesis 6), since earlier research showed that related traits, such as neuroticism and anxiety, influence positive affect or satisfaction (Costa and McCrae 1980; Paolini et al. 2006). In addition to the above, the model hypothesized that the two religiosity aspects (beliefs and participation) would also predict worry (hypothesis 7). Previous research has shown that anxiety, depression, and distress are related to religiosity, positively (Dezutter et al. 2006; King and Schafer 1992) or negatively (Koenig et al. 1993; Miller and Gur 2002); this implies that religiosity has both a direct and an indirect (via worry) effect on life satisfaction.

## 5 Method

### 5.1 Participants

In this study, 238 young and middle-aged Greeks participated on a voluntary basis; 95 (40%) were males and 143 (60%) females. Their age ranged from 24 to 54 years, with a mean of 33.1 years ( $SD = 6.3$ ). Regarding marital status, 148 (62%) reported being married or had a romantic relationship and 90 (38%) were single, divorced, or widowed. Their educational level was quite high, as 57.3% of the

**Table 6.1** Principal component factor analysis with varimax rotation of the Life Satisfaction Scale

Life Satisfaction Scale items	Factors		
	1	2	3
L2-I am happy at least in relation to some aspects of my life	.76		
L1-Usually, I am in a good mood, calm, and serene	.74		
L14-In general, I am content with my life	.71		
L4-I suppose I have come to terms with myself, and by and large, I have accepted my weaknesses and my mistakes	.70		
L3-I am satisfied with my social life	.67		
L5-I believe and feel that my life is meaningful	.64		
L11-I consider myself as being an optimist rather than a pessimist	.60		
L9-I feel as being a part of a larger social group or community that supports me		.77	
L7-I enjoy taking part in group activities		.77	
L6-I usually develop close interpersonal relationships		.74	
L10-In general, I manage to feel pleasant and at ease with others		.68	
L13-I believe I have the ability and the potential to fulfill my wishes			.86
L12-I enjoy setting goals and working hard to achieve them			.85
Eigenvalue	5.93	12.3	1.18
Variance %	28.62	21.12	14.44

Note: Only items with factor loading > 0.40 were included

participants held a university or master’s degree and 31.3% were either junior high or high school graduates. Participants were approached at various places and asked to voluntarily participate in the study.

## 5.2 Instruments

Participants were asked to complete a set of self-report questionnaires which were designed for the purpose of the present study based on other relevant scales: the Life Satisfaction Scale and the Religiosity Scale. In addition, the Penn State Worry Questionnaire was administered along with questions on their perceived physical health state.

*Life Satisfaction Scale* was based on existent scales, such as the Life Satisfaction Inventory (Neugarten et al. 1961) and the Satisfaction with Life Scale (Diener et al. 1985). The questionnaire consists of 14 items (see Table 6.1). It assesses how satisfied participants are with various aspects of their life. Participants responded to each item on a five-point scale (1 to 5), with higher scores indicating greater satisfaction.

Exploratory factor analysis using varimax rotation was applied on the 14 items of the scale, and a three-factor solution was produced accounting for 64.18% of the total variance (see Table 6.1). One item (L8) loaded almost equally on two factors,

**Table 6.2** Principal component factor analysis with varimax rotation of the Religiosity Scale

Religiosity Scale items	Factors	
	1	2
R12-I trust the Holy Will	.81	
R19-I achieve my goals with the help of a Greater Power	.80	
R17-I feel as if a Greater Power is near me	.79	
R20-I believe the powers of Good and Evil exist	.78	
R16-I believe a Greater Power exists	.78	
R11-God loves me and means my good	.77	
R9-The most significant events in my life are part of God's plan	.76	
R10-God speaks to me through the events of my life	.76	
R13-Faith holds an important role in my life	.76	
R15-Daily I am grateful to God who gives me life	.74	
R18-The negative events of my life have served a superior purpose	.70	
R8-In hardship, I seek support and consolation in God	.69	
R14-I believe in the Second Coming of Jesus and the Day of Judgment	.67	
R6-I take confession		.85
R5-I participate in church activities (bible study groups, volunteer work, etc.)		.80
R2-I attend Mass		.74
R4-I read religious books		.68
R3-I observe fasting		.67
Eigenvalue	9.45	2.01
Variance %	42.93	20.76

Note: Only items with factor loading > 0.40 were included

so it was removed from further analyses. The first factor refers to *personal/emotional satisfaction with one's life* (7 items, Cronbach's  $\alpha = .87$ ), the second refers to *satisfaction with one's social life* (4 items, Cronbach's  $\alpha = .80$ ), and the third refers to *goal-related life satisfaction* focusing on goal pursuit and attainment (2 items, Cronbach's  $\alpha = .78$ ). As Cronbach's alphas indicate, internal consistencies of the three life satisfaction factors were quite satisfactory.

*Religiosity Scale.* For the needs of the present study, the Religiosity Scale was built based on prior scales such as the Religious Orientation Scale (Allport and Ross 1967). The scale consists of 20 self-report statements (see Table 6.2); participants were asked to rate how strongly they hold various beliefs (e.g., I believe that powers of Good and Evil exist) or how frequently they practice religious behaviors (e.g., I take confession) on a five-point scale, with higher scores indicating greater frequency (or strength) of the particular experience, feeling, or belief.

Exploratory factor analysis using varimax rotation was applied on the 20 items of the scale. Two factors were abstracted accounting for 63.7% of the total variance (see Table 6.2). Two items (R1 and R7) were found to load almost equally on the two factors, so they were excluded from further analyses. The first factor taps *belief in God* (13 items, Cronbach's  $\alpha = .95$ ); the second factor taps *involvement in religious practices* (5 items, Cronbach's  $\alpha = .86$ ). As Cronbach's alphas indicate, internal consistency of the two religiosity factors was very satisfactory.

**Table 6.3** Principal component factor analysis with varimax rotation of the Penn State Worry Questionnaire

Penn State Worry Questionnaire items	Factors	
	1	2
S13-I notice that I have been worrying about things	.89	
S12-I have been a worrier all my life	.89	
S15-I worry all the time	.88	
S4-Many situations make me worry	.86	
S7-I am always worrying about something	.86	
S5-I know I should not worry about things, but I just can't help it	.85	
S14-Once I start worrying, I can't stop	.83	
S9-As soon as I finish one task, I start to worry about everything else I have to do	.82	
S6-When I am under pressure, I worry a lot	.81	
S16-I worry about projects until they are done	.79	
S2-My worries overwhelm me	.75	
S10-I never worry about anything		-.70
S11-When there is nothing more I can do about a concern, I don't worry about it anymore		-.68
S3-I do not tend to worry about things		-.68
S1-If I don't have enough time to do everything, I do not worry about it		-.62
S8-I find it easy to dismiss worrisome thoughts		-.44
Eigenvalue	7.92	2.04
Variance %	49.43	12.79

Note: Only items with factor loading > 0.40 were included

*Penn State Worry Questionnaire.* The Penn State Worry Questionnaire (Meyer et al. 1990) was developed to assess worry as a trait and has proven to be a reliable and valid measure in a number of studies (Beck et al. 1995; Brown et al. 1992). In this study, the Greek version of the questionnaire, as translated and adjusted by Simos et al. (1998), was used to assess the two dimensions of worry: general worry and not-worry. Participants were presented with 16 statements and asked to rate them on a scale of 1 (“not at all typical of me”) to 5 (“very typical of me”). Items are presented in Table 6.3.

As with the previous scales, an exploratory factor analysis with varimax rotation was applied on the 16 items of the questionnaire to check for its structure. Two factors were abstracted (accounting for 62.2% of the total variance) that assess two dimensions of worry: *general worry* (11 items, Cronbach’s  $\alpha = .96$ ) and *not-worry* or *absence of worry* (5 items, Cronbach’s  $\alpha = .61$ ). The two-factor solution (presented in Table 6.3) is fully consistent with the original design of the questionnaire (Meyer et al. 1990).

*Perceived Physical Health State.* In addition to the above measures, participants rated their physical and psychosomatic health on a three-item scale. They were asked to rate on a five-point scale (1 = “very poor” or “not at all” to 5 = “excellent” or “all the time”) the severity of the physical health problems they experienced in the last 2 years, the frequency of their psychosomatic symptoms, and the state of their general health during the last 6 months. The mean of the three items

was used as indicator of participants' perceived physical health state, with higher scores indicating better self-rated health state. Reliability of this scale was rather low (Cronbach's  $\alpha = .58$ ).

## 6 Results

### 6.1 Individual Differences Effects

#### 6.1.1 Life Satisfaction

The mean scores of the items loading on the three factors showed that participants were moderately to highly satisfied with the goal-related aspect of their life ( $M = 3.8$  SD = 0.83), followed by satisfaction with personal/emotional life ( $M = 3.53$  SD = 0.71) and satisfaction with social life ( $M = 3.42$  SD = 0.81). A series of ANOVAs showed no significant effects of *gender or marital status*, except for one case,  $F(1, 235) = 10.84$ ,  $p < .001$ , partial  $\eta^2 = .04$ : married participants or those in a romantic relationship reported higher scores in personal/emotional life satisfaction ( $M = 3.65$  SD = 0.66) than the single, divorced, or widowed ones ( $M = 3.34$  SD = 0.77). Finally, age was not significantly related with any of the life satisfaction factors.

#### 6.1.2 Religiosity

The means of the items loading each of the two factors suggest that participants reported moderate levels of belief in God ( $M = 3.24$  SD = 1.09) and low involvement in religious practices ( $M = 1.76$  SD = 0.71). ANOVA showed a *gender* effect only in relation to belief in God,  $F(1, 236) = 9.43$ ,  $p < .05$ , partial  $\eta^2 = .04$ , with women reporting higher levels of belief ( $M = 3.41$  SD = 1.03) than men ( $M = 2.99$  SD = 1.06). No significant differences between genders were found in involvement in religious practices. Marital status had no effect on the two religiosity factors. Finally, age did not have any significant association with either factor.

#### 6.1.3 Worry

The mean scores of the items loading on the two factors of the Penn State Worry questionnaire suggest that participants reported moderate levels of both general worry ( $M = 2.8$  SD = 0.95) and not-worry or absence of worry ( $M = 2.52$  SD = 0.65). ANOVA showed that women ( $M = 2.99$  SD = 1) scored significantly higher than men ( $M = 2.52$  SD = 0.8) only in the general worry factor,  $F(1, 236) = 14.54$ ,  $p < .001$ , partial  $\eta^2 = .06$ . No significant effects of marital status were found and no significant correlation with age.

### 6.1.4 Perceived Physical Health State

In general, participants were quite satisfied with their physical health state ( $M = 4.06$   $SD = 0.67$ ), with men ( $M = 4.23$   $SD = 0.61$ ) reporting significantly higher scores than women ( $M = 3.95$   $SD = 0.68$ ),  $F(1, 234) = 10.42$ ,  $p < .01$ , partial  $\eta^2 = .04$ . Marital status and age did not affect participants' perceived physical health state.

## 7 Relations Between Life Satisfaction, Religiosity, Worry, and Perceived Health State

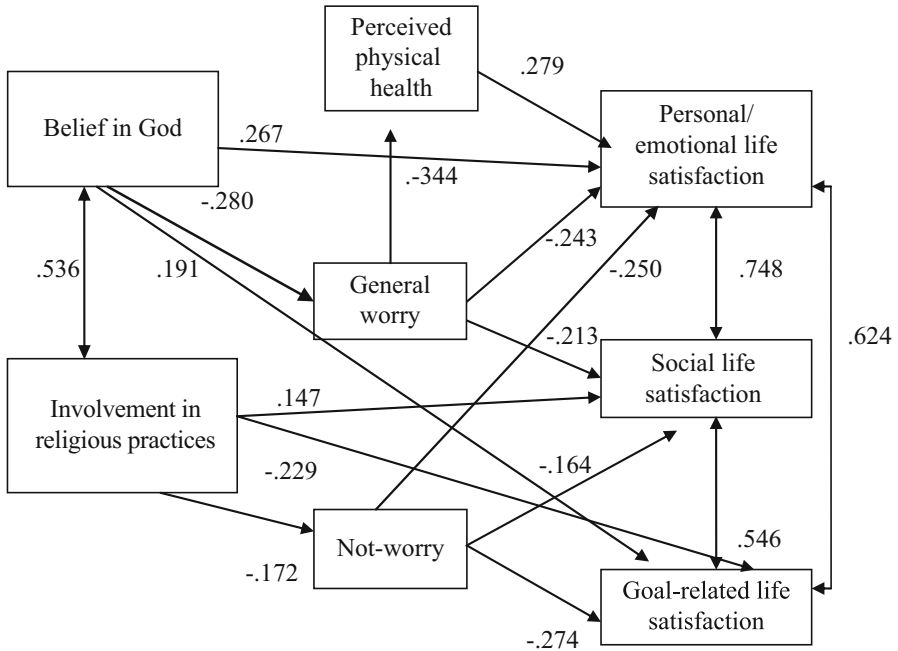
To investigate the relations between the measures of life satisfaction, religiosity, worry, and perceived health state, correlations were firstly computed. As Table 6.4 suggests, the personal/emotional and the social (but not the goal-related) life satisfaction correlated significantly with almost all other variables. Specifically, hypothesis 1 was partially confirmed as both of the religiosity factors correlated significantly with personal/emotional life satisfaction (involvement in religious practices correlated also with social life satisfaction), and neither of them correlated with goal-related life satisfaction. All three life satisfaction dimensions correlated positively with perceived health state, as hypothesis 2 assumed. Also, they negatively correlated with the worry and the not-worry factors, as hypothesis 3 predicted, with one exception: goal-related life satisfaction correlated only with the not-worry factor. Finally, belief in God positively correlated with general worry, whereas involvement in religious practices negatively correlated with not-worry.

**Table 6.4** Correlations between life satisfaction, religiosity, worry, and perceived physical health state measures

	Personal/ emotion. life satisf.	Social life satisf.	Goal- related life satisf.	Belief in God	Involv. in relig. practices	General worry	Not- worry
Social life satisfaction	.62**						
Goal-related life satisfaction	.49**	.41**					
Belief in God	.22**	.12	.13				
Involvement in relig. practices	.19**	.20**	-.04	.54**			
General worry	-.24**	-.17**	.06	.28**	.08		
Not-worry	-.30**	-.19**	-.24**	-.10	-.17**	.06	
Perceived physical health state	.36**	.16*	.13*	-.06	.01	-.34**	.09

\*\* $p < .01$ ; \* $p < .05$





**Fig. 6.1** The path model of the effects of religiosity factors, worry factors, and perceived physical health state on life satisfaction dimensions

### 7.1 Predictors of Life Satisfaction

To examine whether life satisfaction was predicted by the religiosity factors, worry, and perceived physical health state, path analysis was applied using the EQSWIN version 6.1 (Bentler 2005). The maximum likelihood robust method of estimation was used. The Satorra-Bentler Scaled  $\chi^2$  (123) = 226.92,  $p < .001$  was significant. Given the sensitivity of  $\chi^2$  to sample size (Byrne 2006), model fit assessment was based mainly on the remaining goodness-of-fit-indicators provided in the analysis. Specifically, the ratio  $\chi^2/df = 1.79$ , CFI = .930, NNFI = .911, and RMSEA = .058 (CI90% .045–.070) indicated a relatively good model fit (Schreiber et al. 2006). The model tested is presented in Fig. 6.1.

In this model, the direct paths running from religiosity factors, worry factors, and perceived health state to the life satisfaction dimensions were significant. This confirmed the respective hypotheses. Specifically, as regards the effects of the religiosity factors on life satisfaction dimensions (hypothesis 4), personal/emotional and goal-related life satisfaction were positively predicted by belief in God; social life satisfaction was positively predicted by involvement in religious practices; unexpectedly, goal-related life satisfaction was negatively predicted by involvement in religious practices.

Perceived physical health state positively predicted personal/emotional life satisfaction, as hypothesis 5 suggested. Personal/emotional and social life satisfaction dimensions were also predicted (negatively) by the two worry factors, while goal-related life satisfaction was predicted only by not-worry (hypothesis 6). The effects were negative suggesting that excessive worry is as detrimental to goal-related life satisfaction as absence of worry. Finally, two negative paths were found connecting religiosity with worry; the first connected belief in God with general worry and the second involvement in religious practices with not-worry. This finding confirms hypothesis 7 and suggests that religiosity dimensions have both a direct and an indirect effect (through worry) on life satisfaction dimensions.

## 8 Discussion

In this study, we investigated life satisfaction in relation to religiosity, worry, and perceived physical health state of a Greek sample.

### 8.1 *Life Satisfaction*

As Pavot and Diener (2003) suggest, it is usually advantageous to assess each component of a construct (e.g., life satisfaction) separately, with specifically constructed measures that accurately tap each component. In this way, assessment of each component is more precise, distinctions between components are attained more easily, and potentially unique relations between components and other variables are likely to be revealed.

In this study, the Life Satisfaction Scale was used to provide measures of three distinct dimensions of life satisfaction: personal/emotional life satisfaction, satisfaction with one's social life, and goal-related life satisfaction. Mean scores indicated that, in agreement to relevant research, Greeks are quite satisfied with their lives. As most studies have shown, people report moderate to high satisfaction with their lives (Diener et al. 1999), even in the face of hardships (Folkman 1997).

Among the individual differences factors studied, gender and age did not have any effect on the reported life satisfaction of the Greeks; married or participants in romantic relationship reported higher personal/emotional life satisfaction than the single ones. These results are in line with the majority of prior empirical evidence regarding Greeks (Efklides et al. 2003; Karademas and Kalantzi-Azizi 2005) or non-Greek samples (Joshi 2010; Kelleher et al. 2003; Ryan and Deci 2001). As Pavot and Diener (2004) put it in their literature review, the average levels of life satisfaction are relatively similar for groups representing early, middle, and late adulthood.

Regarding marital status, a positive relationship of life satisfaction with marital status is a common finding in studies all over the world (Diener and Ryan 2009).

Married or people in romantic relationships are more satisfied with various aspects of their lives compared to unmarried, divorced, or widowed ones. However, there is no consensus on the interpretation of this finding: is it because family acts as a protective factor against vicissitudes (Coombs et al. 1991) or because the happier and better-adjusted individuals are those who opt to get and stay married (Stutzer and Frey 2006; Veenhoven 1989)? Obviously, there is need for more research on this issue.

## **8.2 Religiosity**

Two aspects of religiosity were measured, namely, belief in God and involvement in religious practices. Greek participants reported moderate levels of belief in God (or in an impersonal force) but quite low involvement in religious practices, such as church going, taking confession, and fasting. Leondari and Gialamas (2009) and Demetras (n.d.) have also found a relatively low frequency of church attendance and prayer in their samples. The present study confirms the above findings suggesting that, despite their self-reported religious identity, Greeks are not very active members of the Greek Orthodox Church.

## **8.3 Worry**

The participants of our study reported moderate levels of both general worry and absence of worry. Women reported a little higher level of general worry than men, a common finding in the literature (Robichaud et al. 2003; Zalta and Chambless 2008). No effects of marital status or correlations with age were noted. Regarding age, in particular, relevant evidence suggests that worry proneness is reduced in late adulthood; a greater ability to tolerate uncertainty in life and to see less value in worrying may partially account for this finding (Basevitz et al. 2008). In the current study, however, the age of participants ranged only from early to middle adulthood (elderly participants were not included), a fact which may explain the lack of significant age differences.

## **8.4 Perceived Physical Health State**

Finally, perceived physical health state of the participants was assessed. Participants' perception of their physical health was quite high, especially that of males. Consistent to previous findings, women reported more physical and psychosomatic symptoms than men (Neupert et al. 2007). However, there were no effects of marital status or age on reported physical health state.

## 9 Predictors of Life Satisfaction

Path analysis revealed a distinct pattern of predictors of each life satisfaction dimension. Specifically, personal/emotional life satisfaction was positively predicted by belief in God and perceived health state and negatively by general worry; social life satisfaction was positively predicted by involvement in religious practices and negatively by general worry and absence of worry; goal-related life satisfaction was positively predicted by belief in God and negatively by involvement in religious practices. It was also negatively predicted by absence of worry.

### 9.1 *Life Satisfaction and Religiosity*

The study showed that personal/emotional life satisfaction was positively related to belief in God and directly predicted by it. This finding suggests that the more religious people, in terms of faith to God, tend to report higher levels of personal/emotional life satisfaction. Many empirical studies have shown that religious people are on average more satisfied with their life (Diener and Clifton 2002; Diener and Seligman 2004), possibly because faith provides them with a sense of meaning and purpose in life (Pollner 1989).

However, regarding the social life satisfaction, faith did not have any effect. On the contrary, involvement in religious practices positively predicted social life satisfaction, probably because church services and activities offer a sense of being member of a community of people who share values and meaning in life. As relevant findings suggest, participation in religious services, strength of religious affiliation, relationship with God, and prayer have all been associated with higher well-being levels (Ferriss 2002; Poloma and Pendleton 1990; Witter et al. 1985). The positive link between well-being and religiosity is thought to originate from a sense of meaning and purpose and from the social networks and support systems created by churches and other institutions of organized religion (Diener and Ryan 2009).

Path analysis also showed that belief in God positively predicted goal-related life satisfaction, whereas involvement in religious practices negatively predicted it. Following Witter et al. (1985), belief in God may contribute to personal/emotional life satisfaction as well as to the goal-related aspect of life satisfaction by helping people successfully resolve the issue of ego integrity versus despair (Erikson 1959, 1975). This is particularly true as regards goal attainment, since religious people believe that God is helping them in times of difficulty and gain strength from their belief so as to resolve problems and attain their goals. The negative effect of involvement in religious practices on goal-related life satisfaction is hard to explain. It is likely that Greek people believe that active participation in church activities can be an obstacle to achieving one's broader goals in life, possibly because church imposes constraints on behavior and promotes a particular lifestyle, which is shared by those who frequently attend church activities.

Such an explanation is consistent with the findings that Greek people report high belief in God but do not attend religious activities much.

## ***9.2 Life Satisfaction in Relation to Worry and Perceived Health State***

The study showed that both general worry and lack of worry were negatively related to life satisfaction. This is probably due to the fact that worrying about everything all the time does not allow the person to enjoy life and feel happy and adversely affects social relationships. “Not worrying,” on the other hand, represents a kind of avoidance of worry (see Table 6.3 for the items of the scale), which is also a negative emotional state; “not worrying” does not mean that the individual is in a positive affective state, particularly in face of difficulties when worrying would be adaptive for goal attainment. Thus, individuals who experience lower general worry tend to be more satisfied with their personal/emotional and social lives. Those reporting higher lack of worry, on the other hand, also report less satisfaction with their personal/emotional and their social lives and with their goal-related life as well. This may mean that life satisfaction makes sense when one overcomes difficulties and attains one’s goals. Being in a state of continuous lack of challenges (by avoiding them) or worries deprives the person of the sense of personal worth and achievement. These findings are in agreement with prior evidence. For example, in a sample of college students, those scoring higher on worry experienced significantly less life satisfaction than those scoring lower, even after controlling for anxiety (Paolini et al. 2006). This suggests that worry as a trait is a strong predictor of life satisfaction that pervades various dimensions of life satisfaction; additionally, it confirms earlier research which showed that traits such as neuroticism and anxiety influence positive affect or satisfaction (Costa and McCrae 1980; Paolini et al. 2006).

Unlike worry, higher life satisfaction was related to higher perceived physical health state. Perceived health state and life satisfaction are usually intercorrelated, but they often show differential relations with other variables (Pavot and Diener 2004). Thus, in the path model, perceived health state predicted only personal/emotional life satisfaction, while the residuals of this variable correlated significantly with the other two dimensions of life satisfaction. These findings indicate the differential effect of perceived health state in people’s evaluation of their life. Specifically, perceived physical health state is significant for personal/emotional life satisfaction but not for satisfaction with social life and the goal pursuit aspect of life. Moreover, perceived physical health mediated the effect of general worry on personal/emotional life satisfaction. Perceived physical health state was negatively related to general worry. It seems that physical health is something people often worry about. The less one worries about one’s health, the more satisfied one is with emotional/personal life. Therefore, worry had both a direct, negative effect on emotional/personal life satisfaction and an indirect effect via more positive perceptions of physical health.

### 9.3 *Religiosity and Worry*

So far, our discussion regarded the paths from the religiosity and the worry factors to the life satisfaction dimensions. However, religiosity also affected worry. Previous research has shown that anxiety, depression, and distress are related to religiosity (Dezutter et al. 2006; King and Schafer 1992). For example, in the Leondari and Gialamas study (2009), people who reported praying more were found to be more anxious than nonprayers. Probably this is due to the fact that stressful life events (such as chronic pain) prompt individuals to be involved in prayer and religion, as a means of coping with their distress. In this study, belief in God was negatively related to general worry, which means that people feel strengthened and worry less in times of distress. Involvement in religious practices was negatively related to not-worry, but it was not related to general worry. This suggests that involvement in religious activities is making people more aware of difficulties in life and less avoidant of worrying. Involvement in religious practices, however, did not increase general worry. Thus, belief in God reassures the person and decreases worry, and involvement in religious practices lowers the level of not-worry.

Both of these functions of religiosity are positive and indirectly contribute to life satisfaction. Overall, the findings of the present study suggest that religiosity influences life satisfaction both directly and indirectly through worry. Obviously, more research is required to confirm the above findings and delineate the mediating role of worry in the relationship between religiosity and life satisfaction in Greek vis-à-vis non-Greek samples.

## 10 Limitations of the Study and Future Research

The findings of this study capture Greek people's life satisfaction at a time before the recent financial crisis in Greece. Thus, they can be useful as baseline measures for future research. Specifically, since data collection, Greece has been going through a major financial crisis which is expected to impact subjective well-being of the Greek people. Taken the results of Realo and Dobewall (2011) into consideration, who found that life satisfaction varies as a function of the interaction of cohort and historical period, it would be interesting to investigate the extent to which life satisfaction of Greeks (and its relation to religiosity and age) will change as a result of the dramatic political and financial developments in the country.

These findings should, however, be considered with caution as this study has certain limitations. Religiosity is a complex experience embedded in culture, which is inextricable from personal well-being and lifestyle (Karademas and Petrakis 2009). Thus, the examination of limited aspects of religiosity (such as belief in God and involvement in religious practices) and their relation to life satisfaction may be insufficient. Moreover, this is a cross-sectional study, based on self-report data. Future empirical studies should also include older participants and further investigate worry or relevant traits as mediating factors in determining the valence and direction of the links between religiosity and life satisfaction.

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# Chapter 7

## Altruism and Health: Theoretical Perspectives

Carolyn E. Schwartz, Brian R. Quaranto, and Kurt Gray

### 1 Introduction

Over the past several decades, research on the link between health and behavior has focused on health behaviors that directly influence health. For some behaviors, such as smoking, this direct influence is clear and unarguable and has both short-term and long-term repercussions (i.e., less lung capacity and causal factor in lung cancer, respectively). For others, there appears to be a role for moderation, in that too much is detrimental but moderate levels of the behavior are salutogenic. An example of this would be alcohol consumption, with a moderate intake associated with decreased risk of mortality (Baer et al. 2011), and high consumption associated with faster onset of disability (Liao et al. 2011).

Investigations into the health effects of behavior have also extended into the role of social behaviors. Focusing initially on negative social behaviors, there is a sound foundation of research that supports the health risk of loneliness, social isolation, and lack of social support (House et al. 1982; Mendes de Leon et al. 1999). As the field of positive psychology has evolved, researchers have focused on the positive behavioral factors associated with health and well-being and have identified a cluster of behaviors that appear to be associated with health and well-being (Lyubomirsky 2001). Among these positive behavioral factors is altruism.

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*Altruism* refers to behaviors or attitudes that are focused on helping others. This helping can be related to (1) emotional support behaviors, such as listening fully without trying to direct the other's actions; (2) general helping behaviors, such as small kindnesses that make others feel more comfortable or assist others in tangible ways (e.g., carrying books for someone, holding a door open); (3) having a helping orientation or worldview that values and prioritizes being helpful and kind to others; and (4) having a capacity to listen to or help others without feeling burdened by their needs or wishes (Schwartz 2011). Several different terms have been used in the literature to describe the altruism construct, including helping behaviors, altruistic activities, and generativity.

## 2 A Serendipitous Beginning

Our path in studying altruism actually began with a serendipitous observation. The first author did her postdoctoral research comparing the health-related quality of life benefits of two psychosocial interventions for people with multiple sclerosis. One intervention – a coping skills group aimed at teaching coping flexibility (Schwartz and Rogers 1994) – was considered the active intervention and was expected to yield the most benefit. The second intervention – peer telephoned support – was conceptualized as a control group intervention, where similar amounts of time and attention were expected of study participants but the gain was not anticipated or found to be as great (Schwartz 1999). In this control intervention, lay people with multiple sclerosis were trained in active listening to provide nondirective support to a case load of 5–15 others with multiple sclerosis, once a month for 15 min for a year. These supporters were selected on the basis of referrals from a variety of sources, including health care providers, the local chapter of the National Multiple Sclerosis Society, and her broader social network. They were all women and represented a broad range of disability (from none apparent to wheelchair-bound with only one functional finger) and age range (early 30s to early 60s).

To ensure that the trial protocol was followed closely, the peer supporters met with the principal investigator (PI) monthly as a group. In between meetings, they were expected to continue their brief monthly calls. This call was scheduled like a planned meeting with the participant, and the telephone supporter was trained in Rogerian active listening (Rogers 1942, 1951). They were not to divulge their own personal information but rather to listen deeply, responding either with statements that rephrased the participants' own words so that they felt heard and understood or to ask questions that deepened the communication and allowed a further exploration of themes or feelings raised by the other person.

The group met for about 2 years, from the first randomization through 1 year of follow-up for all study participants. The peer supporters also provided the same outcome data on these folks as the randomized patients. This extra data collection came in handy when the PI noticed that these five people seemed to blossom before

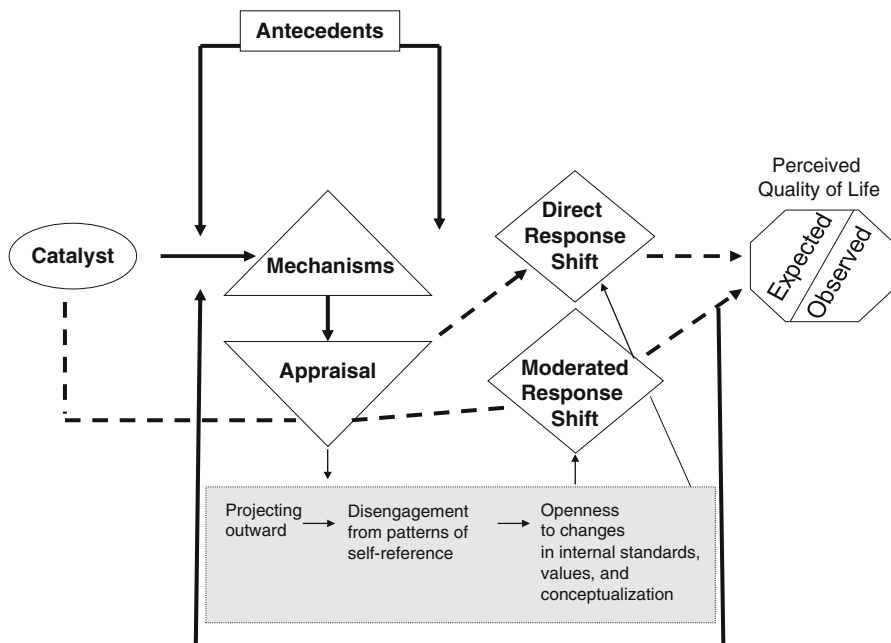
her eyes. To investigate, we implemented a focus group with the five peer supporters and learned that, indeed, this peer-support work seemed to be transformational for the peer supporters (Schwartz and Sendor 1999). They remarked that the experience changed their illness from something that victimized them to a vehicle for having a positive and enhancing role in others' lives. They felt less depressed by the restrictions imposed by their illness, more peaceful, and even noted that a sense of quietude had become a habit for them. When they listened to others, they no longer focused on what they would say next but rather allowed a depth to their listening that they had not known before taking on this role in others' lives. We also analyzed their quantitative data and found that the average effect size on quality-of-life outcomes was 3–7 times as large in the peer supporters as in the randomized patients (Schwartz and Sendor 1999). From a scientific perspective, this study was far from robust and had all sorts of likely biases. These folks were handpicked because of their willingness and interest to take such a role (i.e., selection bias) and had undergone an intervention of sorts by dint of the monthly group meetings. Thus, scientifically the findings were suspect. Intuitively, however, they made sense and seemed worthy of further development.

### 3 Theoretical Model

Scientists proceed by careful steps of empirical data, paving a path that is directed by theoretical sign posts. Theory suggests hypotheses that can be tested and disproved, thus moving the scientific process forward systematic and logical steps. Although our empirical path began with the good luck of stumbling onto a seemingly meaningful connection between altruism and health, our theoretical development needed to be more purposeful.

The link between altruistic practice and health has been discussed from several theoretical perspectives. Erik Erikson's concept of generativity (Erikson 1963) refers to the individual's concern for the welfare of future generations and for the world at large. In his developmental model, Erikson noted that generative concerns peak in middle adulthood, although they are assumed to be present at all stages of the life cycle. Rowe and Kahn's model of successful aging (Rowe and Kahn 1998) posits that social participation requires the mobilization of both cognitive faculties and physical functioning, which inhibit the deterioration of well-being in old age. Other theoretical models of the relationship between altruistic practice and health focus on the distraction inherent in altruistic activities (Doughertya 1983; Dovidio 1991). For example, these behaviors might alleviate boredom and enhance well-being by providing a sense of being useful to others and thus a sense of purpose and meaning in life. By counteracting negative emotions and reducing psychological stress, they are posited to enhance physical health.

A promising theoretical model linking altruism and health builds on response shift theory and integrates these other models into a model that focuses on the internal changes that might impact perceived quality of life or health (see Fig. 7.1)



**Fig. 7.1** A theoretical model of how altruistic practice enables response shifts in quality of life. Altruistic practices cause the individual to project outward by focusing on others. By getting outside of oneself, one gets a hiatus from the burden of one’s everyday problems and challenges, after which one has a different perspective, and these problems or challenges do not seem as big, difficult, or burdensome. This disengagement enhances perceived quality of life in the face of disability or pain. The resulting response shifts then lead to changes in reported quality of life

(Schwartz et al. 2009). Response shift refers to the idea that when individuals experience changes in health state, they may change their internal standards, their values, or their conceptualization of a target construct, such as quality of life, health, and pain. Response shift theory (Sprangers and Schwartz 1999) explains discrepancies between expected and observed levels of perceived quality of life (far right on the figure) in physically ill patient populations after health state changes (*catalysts* of response shift; far left on figure). These changes would directly (i.e., health state changes impair or enhance perceived quality of life) and indirectly impact perceived quality of life (i.e., response shifts moderate or mediate perceived quality of life via stable characteristics or behavioral mechanisms). Stable characteristics of the individual (*antecedents*), such as personality characteristics, would interact with cognitive or behavioral *mechanisms* (e.g., with altruistic practice, social support) to cope with these health changes and result in *response shifts*. Figure 7.1 shows how altruistic practices are posited to lead to response shifts: Altruistic practice causes the individual to project outward by focusing on others. By so doing, the individual disengages from patterns of self-reference. That is, by getting outside of oneself, one gets a hiatus from the burden

of one's everyday problems and challenges, after which one has a different perspective, and these problems or challenges do not seem too big or difficult or burdensome. This disengagement enhances perceived quality of life in the face of disability or pain. The resulting response shifts then lead to changes in reported quality of life.

## 4 Altruism and Health in Healthy Samples

Research on populations representing a broad range of ages has documented that people who engage in altruistic activities are happier and healthier (Post 2007) and that these benefits extend as much as 50 years later (Wink et al. 2007). These activities might include volunteer work or spending time providing emotional support to others in their community. Even something as simple as committing regular acts of kindness to strangers has been shown to increase subjective well-being (Otake et al. 2006). Altruistic activities have also been associated with enhanced physical functioning and lower morbidity rate (Li and Ferraro 2005; Luoh and Herzog 2002; Moen et al. 1992; Morrow-Howell et al. 2003; Thoits and Hewitt 2001; Van 2000; Wilson and Musick 1997), greater positive affect (Poulin et al. 2010), and reduced mortality among caregiving elderly spouses (Brown et al. 2009).

### 4.1 *Health Correlates in Healthy Adults*

Our own research on altruism in healthy populations has been done on both adults and adolescents in collaboration with the Presbyterian Church USA (PCUSA). This national American organization has an admirable research infrastructure that collects survey data biannually from its panel participants numbering in the thousands. The PCUSA has the advantages of inexpensive access to a geographically diverse and stratified sample of willing survey respondents. It offers high-quality data on physical and mental health – using the SF-36 (Ware et al. 1994) – prayer activities, religious coping, stressful events, and sociodemographic characteristics. The sample is likely representative of religiously affiliated people, with an overrepresentation of people in good health and practicing good health habits.

Our first PCUSA study was a secondary analysis of existing data that involved over 2,000 adults (Schwartz et al. 2003). In this study, altruistic social interest was operationalized as six questions about giving (two questions) and receiving help (two questions) and about feeling overwhelmed by others' demands (two questions). The Likert-scaled questions asked respondents to endorse frequency of the queried behavior ("never" to "very often"). Because this was a healthy adult population, the information on mental health would likely reflect the experience of anxiety and depression that plagues most people (i.e., the vicissitudes of adult life) rather than more pathological mental illness.

This study utilized a series of multivariate regression analyses to examine the effects of giving versus receiving help on physical and mental health, after adjusting for possible confounding variables. We found that giving and receiving emotional support were associated with better mental health but not physical health after adjusting for demographics, prayer activities, and prayerful coping. Further, feeling overwhelmed was associated with worse mental health. Our final statistical model using conditional regression demonstrated that giving help and feeling overwhelmed were significantly associated with reported mental health and that giving help was a more important predictor of reported mental health than was receiving help. We were also able to characterize the sociodemographic aspects, prayer activities, and religious coping behaviors were associated with self-reported altruism. We found that altruists were more likely to report high levels of prayer activities, satisfaction with prayer life, positive religious coping, higher age, being female, and being a lay leader of the congregation (see for more detail Schwartz et al. 2003).

These findings suggest that helping others is associated with higher levels of mental health, above and beyond the benefits of receiving help and other known psychospiritual, stress, and demographic factors. Giving beyond one's resources is, however, associated with worse reported mental health. Our findings also suggest that role expectations and a positive belief system underlie and reinforce altruistic social interest behaviors. For example, church lay leaders, females, older people, and more religious people would all have social role expectations of giving to others. These role expectations would likely be reinforced by a positive belief system, as reflected by positive religious coping, engaging in more prayer activities, and being satisfied with one's prayer life.

Our findings are particularly notable because the sample studied was quite physically and mentally healthy, and thus may have had less of the requisite variability for demonstrating such relationships. Additionally, although the panel data did include 2-year follow-up on the outcomes of interest, the study sample was remarkably stable, and thus, there was little change in physical or mental health. This lack of variability made it statistically impossible to predict change and thus to test causal hypotheses about the benefits of helping others. The study was also limited by the post hoc nature of the operationalization of altruism (i.e., not an ideal measure of altruism) and by the fact that the sample consisted solely of volunteers from the Presbyterian church. The external validity of our findings would need to be tested among people not so closely identified with a single religion.

## ***4.2 Health Correlates in Healthy Adolescents***

The next study we did with the PCUSA was new data collection from religiously affiliated adolescents (Schwartz et al. 2009). Data were collected from 457 teens ( $M = 15.6$ ,  $SD = 1.2$ ) assessing altruism, health-related quality of life, psychological well-being, extracurricular activities, religious participation, and demographics. In order to assess the altruism construct more fully, we developed a new measure of altruism that built on several existing measures, modifying the



items to fit the study sample and design. The new four-subscale measure of altruism assessed giving and receiving support, helping orientation, family helping behaviors, and general helping behaviors.

Initial explorations confirmed different relationships among the variables by gender, so all multivariate regression models were done separately by gender. These analyses revealed many associations between altruism and well-being, and differential associations by gender.

In contrast to the findings with adults, we found that teens who provided emotional support to others in their congregation did not report enhanced psychosocial health. Females who engaged in family helping behaviors reported better physical health, but there was no physical or psychosocial correlate of altruism for male teens. It is worth noting, however, that both genders reported better physical and psychosocial health if they received congregational support (see for details Schwartz et al. 2009).

Multivariate analyses by gender then addressed whether altruistic practice has a different effect on well-being for males and females. We found that there were many linear and quadratic associations between altruistic practice and well-being, and these relationships differed by gender. For male teens, family helping was the most salient aspect of altruistic practice, showing associations with positive social relations, purpose in life, and self-acceptance. The shape of the quadratic relationship suggested that the greatest changes in positive-social-relations scores occur with changes in frequency of family helping behaviors that go from “never” to “once every few weeks,” or from “once every few weeks” to “once a week,” and does not increase after that as the frequency increases to “a few times a week” and “every day.” The purpose in life and self-acceptance benefits of family helping are linear: These scores increase by about quarter of a point with each point increase in frequency of family helping behaviors. For example, a teen who “never” helps family members (e.g., with housework, errands, yardwork) reports self-acceptance levels about one standard deviation below the mean as compared to a teen who helps “a few times a week.”

Although the well-being correlates were not as pervasive, both general helping behaviors and helping orientation were associated with two better outcomes for males: Helping orientation was associated with higher levels of reported personal growth and self-acceptance. For example, males’ personal growth scores increased a third of a point (out of five points possible) for each point increase in the two-item helping orientation scale. Thus, a teen who “somewhat agreed” with both “I enjoy doing things for others” and “I try to help others, even if they do not help me” scored a whole standard deviation higher on personal growth than a teen who “somewhat disagreed” with both statements.

For female teens, helping orientation was the most salient aspect of altruistic practice, showing associations with personal growth and purpose in life. For example, a female teen who “strongly agreed” with both “I enjoy doing things for others” and “I try to help others, even if they do not help me” scored almost a standard deviation higher on personal growth than a teen who “somewhat agreed” with both statements. The aspect of well-being for females that had the largest

impact was positive social relations, showing a quadratic relationship, indicating that the biggest changes were occurring across the less frequent response options. Thus, female teens scored more than one standard deviation higher on positive social relations if their endorsement on all of the general helping items changed from “never” to “once” over the past year.

In contrast to males, family helping was not associated with any aspect of existential well-being in females, but it was associated with better physical health ( $p = .002$ ). Also in contrast to male teens, female teens’ positive relations with others appeared to suffer if they reported feeling overloaded by congregational demands or criticisms ( $p < .02$  for both linear and quadratic terms). The decline in females’ reported positive relations was greatest when associated with going from “very often” to “fairly often” feeling overloaded by congregational demands or criticisms.

An examination of the demographic and lifestyle variables revealed that altruistic practice was generally more prevalent among both male and female teens who engaged in positive religious coping and engaged in sports or exercise and less prevalent among females who endorsed prayer activities. Older age was associated with more frequent family helping in males and higher endorsement of helping orientation among both males and females. Regarding predictors of emotional support, it was found that attending church less frequently and engaging in positive religious coping were associated with more reported receiving and giving of emotional support to other congregational members. There were no significant associations with sedentary activities, hobbies, hanging out with friends, and negative religious coping.

This study was limited by a few known factors. First, study participants generally reported good physical and psychosocial health and very low rates of smoking or alcohol consumption, so the models were unable to evaluate the impact of these behaviors on altruistic practice. Second, the nonresponse rate was high. Only 24% of the invited teens agreed to participate despite the multiple and multimodal attempts to encourage participation in the sampled teens. Response rate was examined by size of congregation, by population density, and region of country. We found that the study sample was more representative of mid-sized congregations but was representative across region of the country and population density.

## 5 Cause or Effect?

These two studies of healthy samples support the altruism-health connection but cannot make causal inferences about altruism *causing* better health. It is possible that the altruism-health connection is a correlational illusion: One must be well enough – physically, emotionally, and economically – to be able to help others. Thus, perhaps it is not that altruism causes wellness but rather that wellness is a necessary condition for altruism.

This logical conundrum is not easy to disentangle, but recent research using longitudinal data or evaluating mediator and moderator effects (Baron and Kenny 1986) has documented that volunteering appears to buffer the association between functional limitations and morbidity (Burr et al. 2011) and mortality in older adults (Okun et al. 2010) and that merely being better-off physically or emotionally does not explain the relationship between volunteering and functional health (Ayalon 2008; Burr et al. 2011; Hao 2008). Being better-off economically does, however, appear to buffer the impact of disability on subjective well-being (Smith et al. 2005), such that wealthier people who are diagnosed with a chronic illness experience less disability than less affluent patients.

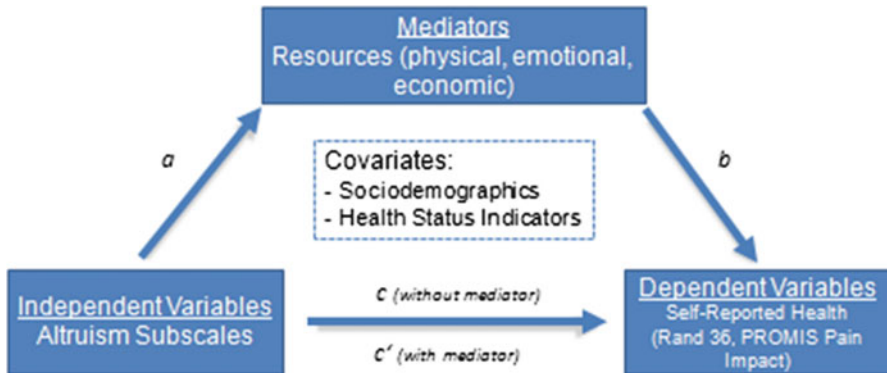
In contrast, research on prosocial behavior and wealth has suggested that less affluent people are more generous, charitable, and trusting than wealthier people (Piff et al. 2010) and derive more personal benefits from volunteering than their peers with higher socioeconomic status (Tang et al. 2010). It would be worthwhile to continue to consider these alternative hypotheses in explaining a relationship between altruism and health. For example, are people with more physical, emotional, or economic resources more likely to engage in prosocial or altruistic behavior? Does the heretofore documented link between altruism and health actually reflect the effect of having more of such resources rather than a true health benefit of altruism? One way to test these hypotheses would be to evaluate mediator and moderator relationships between altruism and health in a medically ill patient population that is heterogeneous in physical, emotional, and economic resources.

## 6 Salutogenic Evidence of Altruism in Patient Samples

Our next empirical step in this research path focused on people with a chronic health condition and investigated whether the altruism-health connection was robust in a reasonably large and heterogeneous sample. It also tested specific hypotheses to ascertain whether having more resources explained the relationship between altruism and health.

The study sample was adults with lumbar spine disorders ( $N = 243$ ) who were recruited from two active spine surgery practices. To achieve a heterogeneous sample, this cross-sectional study included people representing a broad range of time since surgery and number of spinal surgeries. Approximately half of the data were collected within a month of a planned spinal surgery, and half of the sample had an average of 2.05 ( $SD = 2.51$ ) years since surgery. Since many patients have had repeated spinal surgeries over the course of their lifetime, combining them into one analytic sample is a reasonable approach to enhancing the generalizability of the findings as well as maximizing the sample size. We did, however, adjust for whether patients were awaiting surgery in the statistical models.

Similar to the adolescent study, we found Fig. 7.2 that there were gender differences in the association of altruism and quality of life (QOL) outcomes in this sample, so subsequent analyses were conducted separately by gender. This study used a hierarchical modeling approach to investigate the association between



**Fig. 7.2** Resources as a mediator of the relationship between altruism and health. This schematic shows the hypothesized mediational relationship that having more physical, emotional, and economic resources is expected to play on the association between altruism and health outcomes. If resources are mediators of the altruism-health link, then the regression coefficients of altruism subscales in predicting health outcomes would be significantly attenuated when resources are included in the model, and  $c'$  would be different than  $c$ . We found that both men and women with spinal disorders had better mental health with higher levels of giving and receiving support, and this effect was mediated by emotional resources. Women evidenced better physical health and less pain impact when they endorsed higher levels of giving and receiving support and/or general helping aspects of altruism. Physical and economic resources partially but did not fully mediate women's altruism-physical health link

altruism subscales and patient-reported outcomes and to test mediation and moderation effects of physical, emotional, and economic resources based on the Baron and Kenny framework (Baron and Kenny 1986; Fig. 7.2). Each model began with the altruism subscales that he were significantly associated with the health outcome of interest because we were interested in the raw (uncorrected) association between altruism and health. Significant demographic covariates were subsequently added as a second model, health status indicators in a third model, and then resource proxies in a final set of models. Physical resources were tested using a sum of three dichotomous variables of endorsed engagement in aerobic, strength-building, and yoga exercises. Emotional resources were tested using endorsement of the depression comorbidity item. Economic resources were tested using the proxy of reported being currently employed. Thus, the score of the physical and economic resources indicates more of the resource, whereas the reverse is the case for emotional resource proxy.

We found that men evidenced only a mental health benefit when they endorsed higher levels of giving and receiving support. In contrast, women evidenced better emotional and physical health and less pain impact when they endorsed higher levels of giving and receiving support and/or general helping aspects of altruism.

Our modeling also suggested that having more resources explains some but not all relationships between altruism and health. In men, the apparent relationship between giving and receiving support and mental health was eliminated when we adjusted for having more emotional resources. For women, the apparent relationship among mental health and giving and receiving support was entirely explained

by having more emotional resources. The relationship between the general helping aspect of altruism and physical health among women was partially but not fully mediated by physical and economic resources, suggesting that although altruists may be more energetic and financially able, their health benefit of prosocial behavior is independent of their resources. None of the altruism-health relationships were moderated by resources.

The bottom line of these hypothesis tests is that men and women report similar levels of altruism but enjoy different benefits from this prosocial behavior. For both genders, the altruism-mental health link is completely explained by covariates and resources. In contrast, women appeared to enjoy a physical health benefit of giving and receiving support and general helping behavior. Although the mental health benefit was mediated by resources, the physical health benefit was independent of sociodemographic factors, health status, and physical, emotional, and economic resources.

The limitations of this work are related to the cross-sectional study design and the use of relatively weak proxies that may have low specificity in operationalizing resource proxies and thus not be an ideal measure of resources. The sample also may have miscellaneous underlying pathology, adding to the heterogeneity of the sample but not affecting our research objective. Although our analyses are suggestive that altruism causes better health in women, they should be interpreted cautiously. It would be ideal to replicate these analyses using data collected prospectively over a clinically meaningful period of time to allow less cautious causal inference and use operationalizations of physical, emotional, and economic resources that are more nuanced and informative and have less overlap with the outcome (e.g., history of depression related to mental health, and working currently is related to physical functioning). It might also include measures of higher levels of well-being (e.g., Ryff's measure of psychological well-being (Ryff 1989)) as our past research has documented numerous benefits at a more existential level (Schwartz et al. 2009).

This study supports the idea that altruism is a likely cause of better health outcomes in women rather than an effect of being in better health. Future research should test a putative causal relationship between altruism and better health outcomes in women using longitudinal data.

## 7 Revisiting Theory

Our findings are intriguing and suggest that the altruism-health connection is relevant for people with a chronic health condition and that, like healthy adults, these people may benefit from engaging in altruistic behaviors and attitudes. Our theoretical model based on response shift theory provides a foundation for hypothesis testing and thinking about the altruism-health connection. It is possible to build on this theory by thinking about the process of altruistic behaviors as adding influences that are positively goal-directed, non-avoidant, including a quality of

interacting with others, and likely to be inherently reinforcing in a number of ways. Thus, it may not just be a focus issue but may also lead to different actions and consequences that happen with different perspectives. The process may broaden one's focus, leading to different experiences and consequences as a result.

It is arguable that people who engage in regular acts of kindness create a stronger and broader social network. Indeed, social connectedness may be a key benefit of altruistic behaviors and attitudes (Schwartz 2010). There is a substantial body of research suggesting that social isolation has significant health consequences (House et al. 2003) and that older adults who are embedded in a social network have a lower risk of activities-of-daily-living disability (Mendes de Leon et al. 1999). Even if one's social network is irrevocably changed by the death of a spouse, providing instrumental help to others has a documented buffering effect on depression (Brown et al. 2008). The notable rise in recent years in the prevalence of depressive disorders among Americans (Bloom 2004; Simon et al. 2004) may reflect a problematic lifestyle that has become the norm. If more people regularly engaged in altruistic social interest behaviors, would the prevalence of depression decrease?

This research may also have substantial implications for how we understand the concept of "community," what it provides to people, and what the most effective therapeutic strategies might be for improving subjective well-being (see Ferrucci 2006). When one engages in altruistic social interest behaviors, one is reaching out and weaving a connection to other individuals and eventually to a larger community. As this behavior pattern goes on, the helper finds him- or herself touching more people in a way that is at the same time personally significant (i.e., providing help that is targeted to others' very personal needs) and nonspecific (i.e., motivated by a general orientation of benevolence or generosity of spirit). Over time, this reaching out and weaving of benevolent connections would likely lead to a sense of a benevolent net that links the helpers to a broader community/world extending beyond themselves, their families, or even their known friends (Fowler and Christakis 2008). This net catches the needy and protects or buffers them from isolation and health threats. It is a continually expanding community. In thinking about this concept of community that is nurtured and enhanced by altruistic social interest behaviors, it seems akin to a powerful benevolent force. It is thus a spiritual sense of community.

As a result of this line of thinking, we have renamed the subscales in our altruism measure – adult version to reflect a higher level of abstraction rather than the behaviors endorsed by the items. Instead of "giving/receiving support," the adult version subscale is now named "community connection." Instead of "overwhelm," the adult version subscale is now named "community pressure." We believe that these terms accurately reflect the community impact and focus of altruistic behaviors. Further, this nomenclature focuses attention on the community-network meaning of altruistic behavior rather than merely on the idea of social support. We believe that sense of community has a depth of importance that is eminently worthy of investigation and development.

## 8 Implication for Social Networks and Community

No one is an island, especially in terms of health. Decades of research suggest that both health and health behaviors are impacted by one's social environment. Relationships with other people can both improve and harm health, depending on the nature of those relationships and with whom they are held. For example, when young people befriend others who engage in risky behavior (e.g., drug use, unprotected sex), they often engage in risky behavior themselves through peer pressure. In older age, the simple presence of close ties can buffer against loneliness, which has been linked to a number of diseases, for instance, dementia (Bassuk et al. 1999; Fratiglioni et al. 2000) and cardiovascular disease (Hawkey et al. 2010).

More recently, research has found that such social environments can even influence health indirectly. Network analyses reveal that the presence of obese others in one's extended social environment (e.g., friends of friends) can lead to increased obesity through the alteration of norms (Christakis and Fowler 2008). Despite some sophistication in these studies, though, they conceptualize social environment simplistically – as the binary presence or absence of a tie, which presumably influences individuals in the same way, regardless of their individual characteristics. These assumptions belie the complex truth of social environment. Firstly, people's social networks are significantly more nuanced than this, with people having multiple distinct and yet overlapping social spheres, which both compartmentalize and provide shortcuts for social influence. Secondly, individual characteristics not only help determine our social networks (e.g., extroverts presumably have broader networks) but also allow for the mediation of health behaviors through the alteration of these characteristics.

Social environment can be conceptualized as a series of overlapping social spheres whereby people's community may be comprised of distinct yet interrelated social groups. Such differentiation of social environment may be especially important throughout the life course. As people age, the conceptualization of social environment may initially grow more diversified and complex, as people acquire careers and families who bring with them their own groups (e.g., in-laws, parents of your kids' friends). This diversification may be curvilinear, however, since older adults experience such events as retirement, death of friends and family members, "empty nest" syndrome, unemployment, or other changes in life circumstances. Consequently, one's personal community may be reconceptualized and recreated after different life milestones. Understanding the complexity of the social environment is necessary to documenting its effects on health.

The mechanisms by which altruism influences health may be related to social ties. Although altruism has been studied mostly for its dyadic effect – the benefits received from either the helper or helpee – it may be that altruism can have indirect effects, whereby the benefits of one person's prosocial behaviors could spread through ties and improve the health of others. It may be that altruism lets people join networks in which more positive health behaviors are modeled. Further, altruistic behavior may influence how people appraise and reappraise their social

environment (i.e., response shift (Sprangers and Schwartz 1999)), as well as their current life situation (Schwartz and Sendor 1999).

We believe that research on altruism and health has substantial implications for how we understand the concept of “community,” what it provides to people, and what the most effective therapeutic strategies might be for improving subjective well-being. When one engages in altruistic social interest behaviors, one is reaching out beyond one’s limited microcosm and weaving a connection to other microcosms and eventually to a larger world.

## 9 Implication for Cognitive Reserve and Disability

Another way of thinking about the resources would involve the construct of cognitive reserve. Research in older samples and people with neurological diseases has documented a protective or buffering effect of cognitive reserve, defined as “individual differences in how people process tasks that allow some to cope better than others with brain pathology.” Operationalized as objective intelligence (e.g., Wide Range Achievement Test), measures of “intellectual enrichment” (e.g., education, occupation), and current enrichment activities (i.e., complexity of leisure activities (Scarmeas et al. 2001)), cognitive reserve has been shown relevant in maintaining function and delaying disability (Haase et al. 2008; Kalmar et al. 2008) and may impact perceived quality of life and well-being.

Our team is currently investigating in a preliminary fashion how appraisal processes relate to cognitive reserve in people with multiple sclerosis. Response shift theory (Rapkin and Schwartz 2004; Sprangers and Schwartz 1999) predicts that people with high levels of cognitive reserve may be more adaptable due to their cognitive flexibility and plasticity and thus may be better able to change their internal standards, values, or conceptualizations of QOL or well-being in the face of the vicissitudes of multiple sclerosis. These response shifts can lead to a higher level of perceived QOL than would be expected, given the patient’s level of impairment (Barclay-Goddard and Epstein 2009; Schwartz and Sprangers 2000). In the context of response shift theory, cognitive reserve is hypothesized to lead to distinct patterns of appraisal or changes in appraisal in patients with high compared to low cognitive reserve. Additionally, the relationship between symptom experience, health-related QOL, and well-being may be different among patients high and low in cognitive reserve. Understanding patterns in appraisal over time would be useful for elucidating the relationship between cognitive reserve and disability.

Cognitive reserve may be relevant to altruism, in particular as a resource that enables altruistic intention and behavior. It would be worthwhile to investigate whether altruistic behavior is more prevalent in people high in cognitive reserve and whether this behavioral factor explains some of the relationship between cognitive reserve and disability. This line of investigation would have implications for promising “low-tech” treatments for people with neurological disorders or normal aging and would have application in the rehabilitation setting.



## 10 Directions for the Future

Recent research on sustainable methods for enhancing happiness has pointed to the utility of encouraging and developing different aspects of altruism. For example, Post (2007) suggests that a personal happiness program should focus on developing ten ways of giving, including turning gratitude into action, generativity, and listening deeply to others. Lyubomirsky (2008) prescribes a happiness program that includes investing in social connections by practicing kindness and nurturing social relationships, as well as other activities related to goal attainment, savoring life's joys, learning to forgive, etc. Building on the work of these and other prominent researchers, it would be worthwhile to develop interventions that enhance kindness and altruism as a means of healing. These interventions could be as simple as counting acts of kindness (Otake et al. 2006) or as involved as teaching active listening skills as a tool to building one's community connection.

Following is an example of how response shift theory and our empirical work on altruism could be used to develop a clinical intervention (Schwartz 2010). The steps of the intervention could be:

1. *Utilize the catalyst.* A catalyst may be an event or series of events that challenges a person's perceived QOL – often this is when most people seek therapy or counseling. If the therapist sees this as a positive opportunity for clients to reassess their life directions and values, so the client is more likely to view it positively.
2. *Explore the client's antecedents and mechanisms.* What are the pre-catalyst, stable characteristics that have helped your clients cope with life's challenges to this point? What are their cognitive, affective, or behavioral coping mechanisms that can be employed now? What are their interests, strengths, and resources? Knowing these may help in directing them toward maximally rewarding altruistic activities.
3. *Encourage projecting out.* Set therapeutic assignments that help your clients look beyond the self, see the needs of others, and offer a helping hand. This is where knowing your clients' antecedents and mechanisms can help. Utilize their strengths and give them a sense of optimal functioning to offer assistance to those they know and understand. Someone with computer skills could employ those skills to help rebuild old computers for the needy. Someone with a love of animals could be encouraged to volunteer at an animal refuge. Someone who enjoys cooking could bake a casserole for a sick neighbor.
4. *Validate disengagement from self-reference.* Disengagement from negative self-reference is likely to flow naturally from acts of altruism. Help your client see the benefits, both for self and others, as they reap the rewards of their helping activities. Invite them to acknowledge their acts of kindness because this is likely to promote more kindness and more happiness.
5. *Support openness to change.* Doing something one thinks one could not do (finding and helping someone worse off than him) can open one up to new ideas and new opportunities for positive changes. Encourage your clients to broaden their horizons and explore new possibilities.

6. *Validate the perceived QOL.* Validating a client's improved QOL can be done with questions like: *How have your actions benefited those you have been helping? What difference has it made to your life in the ways you are thinking, feeling, and doing things? How has it improved your relationships with those around you? How has it enhanced your own appreciation of life?*

## 11 Conclusion

The link between altruism and health is a promising direction for future research as well as clinical intervention. It is our hope that the brief description in this chapter will provide meaningful stepping stones to a next generation of research that can address the complexity and richness of the construct fully.

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# Chapter 8

## Marital Quality and Well-Being: The Role of Gender, Marital Duration, Social Support and Cultural Context

Eleni Pateraki and Pagona Roussi

### 1 Introduction

Over recent decades, numerous studies have demonstrated that married individuals enjoy better physical and mental health, have reduced mortality rates and incur less risk for substance and alcohol misuse than single or divorced individuals (Bachman et al. 1997; Voss et al. 1999; Waite and Gallagher 2000; Wickrama et al. 1997). These effects appear to outweigh the selection effect of healthier people being more likely to enter marriage (Daniel 1995; Headey et al. 1991). In addition, the marital bond has been found to be more strongly related to well-being than other social bonds, such as friends or family (Antonucci et al. 2001; Walen and Lachman 2000; Whisman et al. 2000).

However, several studies have underscored not only the positive but also the negative impact of marital relationships. Individuals in long-term unhappy marriages, for example, are more likely to experience distress and mental health difficulties, including depression (Davila et al. 2003; Hawkins and Booth 2005; Whisman 2007). The impact of a poor spousal relationship on psychological well-being is also demonstrated by examining the impact of divorce on mental health. Recent studies indicate that divorced individuals sometimes report higher levels of confidence and life satisfaction than individuals in low-quality marriages (Hawkins and Booth 2005). Although divorce is often accompanied by feelings of isolation, loss of social support sources and financial losses (Amato 2000), Hawkins and Booth (2005) suggest it may actually bring about an increase

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in the level of overall happiness as the individual exits a toxic social environment. Therefore, the quality of marriage, rather than marital status *per se*, is more important for mental health.

The purpose of this chapter is to present findings of recent research on the relationship between marital quality and well-being. We especially focus on studies which have attempted to clarify the underlying mechanisms of this relationship and have examined the role of moderators and mediators. Given the potential importance of social context, social support and gender in understanding the relationship between well-being and marital quality, we briefly present the results of a study that examined the role of the aforementioned factors in the relationship between marital quality and depressive symptoms in a sample of 95 married couples from Greek urban and rural areas (Pateraki and Roussi 2011).

Both positive and negative indicators of well-being are included in our review, as they may be affected by different moderators. In terms of negative indicators of well-being, we mainly focus on depressive symptoms, as the vast majority of published studies examine this particular aspect of well-being when exploring its relationship with marital quality. Nevertheless, researchers increasingly acknowledge that positive indicators, such as self-esteem, global happiness and life satisfaction, may be of equal importance in understanding the interpersonal context of well-being (Shek 1995) as the lack of depressive symptoms does not necessarily entail positive well-being. Due to the scarcity of studies regarding the positive indicators of well-being, we include studies examining a range of aspects (e.g., life satisfaction, self-esteem, happiness, positive emotions).

For marital quality, we mainly focus on studies which use measures of overall marital quality. As Horwitz and colleagues (Horwitz et al. 1998) propose, a plethora of studies have been conducted indicating the beneficial effects of love, affection, support and intimacy in marriage, which have developed in parallel with studies exploring the detrimental effects of conflict, violence, infidelity, hostility, jealousy and criticism within the marital relationship. However, in most relationships both aspects coexist. Horwitz and colleagues (1998) showed that it is the balance between the positive and negative behaviours in marriage that is more important when examining the association between marital quality and well-being. This balance may be best reflected in global measures of marital quality.

The vast majority of studies included in our review have used self-report measures of marital quality (e.g., Dyadic Adjustment Scale, Marital Adjustment Test) and well-being (e.g., BDI, Rosenberg Self-Esteem Scale), in accordance with the main practices adopted in this research field. When appropriate, methodologies other than self-report are highlighted in the presentation of the extant literature.

## 2 Marital Quality and Well-Being

Both cross-sectional and longitudinal studies provide empirical support for the relationship between depression and marital quality (Proulx et al. 2007). For example, Whisman and collaborators in a series of cross-sectional studies, using

self-report measures and individual interviews with large community samples, demonstrated the strong positive association between marital dissatisfaction and depression. Specifically, low marital quality was associated with major depressive episodes among women and dysthymia among men, even after controlling for demographic factors and prior history of depression (Whisman 1999, 2007; Whisman et al. 2000).

The results from longitudinal studies are somewhat conflicting. Beach and colleagues (Beach et al. 2003), in a study of 166 couples using self-report questionnaires of marital adjustment and depression, demonstrated that baseline marital quality predicted the level of depressive symptoms a year later. However, Fincham et al. (1997) found that baseline depressive symptoms led to marital dissatisfaction 18 months later for men, whereas the opposite longitudinal link was present for women, in that low marital satisfaction led to later depressive symptoms. Two predominant theoretical models have guided research in this area, the stress generation model and the marital discord model. The stress generation model (Davila et al. 1997; Hammen 1991) proposes that individuals with depressive symptoms engage in several stress-generating behaviours during their social interactions (e.g., dysfunctional problem-solving or negative mood), which increase the tension and distress within their interpersonal environment. This in turn increases their negative mood (Hammen 2005; Rudolph et al. 2000). Alternatively, the marital discord model (Beach et al. 1990) posits that marital discord increases depressive symptoms as it reduces spousal support and accentuates the levels of tension and hostility within an individual's social environment (Beach et al. 2003; O' Mahen et al. 2001). Nevertheless, several researchers suggest that the above models are not necessarily mutually exclusive and that marital quality and depression are characterised by a dynamic, bidirectional relationship, where both factors influence and are being influenced by one another (Bauserman et al. 1995; Kurdek 1998).

In light of results demonstrating that the level of marital satisfaction between two spouses is correlated (Burluson and Denton 1997) and that the changes in psychological well-being over time between two spouses are also correlated (Hoppmann et al. 2011), researchers have recently turned to examining cross-spousal effects in the association between marital quality and mental health by including both partners in their research. Results show that increased depressive symptoms in one spouse are correlated with poor marital quality for the other spouse (Bauserman et al. 1995; Coyne et al. 2002; Sacco et al. 1993). Moreover, prospective studies show that a spouse's own marital satisfaction predicted their partner's level of depressive symptoms a year later (Beach et al. 2003) and is predicted by their partner's depressive symptoms (Whisman et al. 2004). However, the intra-individual correlations are more significant (Whisman et al. 2004).

Less extensive research has explored the relationship between marital quality and positive aspects of well-being. In a longitudinal panel study using four waves of data, Headey and colleagues (1991) demonstrated that among six life domains, including job, friends, living standards and physical health, only marital satisfaction presented a significant causal link with global life satisfaction. Marital happiness has been shown to be positively associated with global happiness (Glenn and

Weaver 1981), life satisfaction (Ng et al. 2009; Shek 1999), self-esteem (Voss et al. 1999) and self-efficacy (Lansford et al. 2005). Furthermore, it has been suggested that marital satisfaction may be more strongly associated with life satisfaction and overall happiness than with mental health symptoms (Gove et al. 1983). This may be the result of the positive aspects of marital relationship, such as instrumental and emotional social support, attachment, love, intimacy, reassurance of worth and feelings of belonging (Horwitz et al. 1998; Lansford et al. 2005).

Finally, researchers have found some evidence suggesting that the association between marital quality and well-being is changing over the decades (e.g., Lee et al. 1991). For example, Proulx et al. (2007) observed that the year of study may moderate this relationship, as the association between marital quality and well-being in longitudinal studies appears to be stronger in more recent studies. Various recent social developments may account for this, including the significant reduction of stigma regarding depressive symptoms, which may result in people indulging in and expressing their low mood more readily (Proulx et al. 2007), and the increasing social emphasis on romantic love, which may make contemporary spouses more prone to disappointment (Proulx et al. 2007). In addition, the massive entrance of women into the workforce, which has increased their contribution to family income, may have changed the dynamics in marital relationship, as well as the objectives of marriage (Williams 2003).

In order to clarify the mechanisms linking marital quality and well-being, researchers have endeavoured to identify variables that moderate or mediate this relationship. In the following sections, we examine the moderating role of gender, age, marital duration and cultural context and the mediating role of social support.

### **3 Marital Quality and Well-Being: The Role of Gender**

Consistent with findings which show that women have higher rates of depression (Kessler 2003), McGrath et al. (1990) observed that in comparison to single women and married men, women in dysfunctional marriages are three times more likely to experience clinical depression. Two recent meta-analytic reviews confirm that the relationship between marital quality and well-being is stronger for women. For example, Proulx and colleagues (2007) in their meta-analytic review of 93 cross-sectional and longitudinal studies, investigating both positive and negative indicators of well-being, found that gender constitutes an important moderator of the association between marital quality and personal well-being, with the correlation being stronger for women; nevertheless, this effect was observed in cross-sectional studies only. Whisman (2001) demonstrated similar results in his meta-analysis of 26 cross-sectional studies about marital satisfaction and depression. It has been suggested that because women are more sensitive to relational problems (Horwitz et al. 1998) and are traditionally more interpersonally oriented, the success of their marriage may be more closely linked to their self-view and, therefore, to their well-being (Beach et al. 2003; Culp and Beach 1998; Davila et al. 2003; Wood 2000).



However, several studies have failed to find gender differences in this relationship (e.g., Whisman and Bruce 1999), and in fact some longitudinal studies have shown the opposite findings (Kurdek 1998). Several explanations have been proposed, some of which focus on methodological issues and others on the changing roles of men and women. For example, Beach and colleagues (2003) suggest that over time gender differences tend to fade out and as people get older, gender roles tend to become less distinctive and men may take equal responsibility for maintaining marital functioning. Consequently, studies that examine gender differences using a longitudinal design are more likely to include established marriages and are therefore less likely to find differences.

An alternative explanation highlights that concurrent studies may also inevitably capture the momentary effects of marital discord rather than just the effects of long-term dissatisfaction within marriage (Proulx et al. 2007). Thus, women, who are more sensitive to the negative affect in relationships (Horwitz et al. 1998), may show a stronger cross-sectional correlation between low marital quality and depressive symptoms (Proulx et al. 2007). Finally, Williams (2003) has suggested that because women tend to internalise emotional problems, a process which is closely linked to depression, and men tend to externalise, studies that focus exclusively on depression as the dependent variable may artificially find that marital quality differentially impacts women's mental health. In her analysis of three-wave data from a nationally representative survey of 2,348 participants, contrary to older findings showing higher well-being risks from marriage for women, Williams (2003) did not find significant gender differences on the benefits or hazards of marital quality on well-being and introduced another explanation for the contradictory findings. She suggested that the shifts in women's role in the marital and work context over the past decades may have brought about shifts in the marital experience for both men and women, and thus, the findings may be a function of the year the study was conducted.

#### **4 Marital Quality and Well-Being: The Role of Age and Marital Duration**

The moderating role of two interrelated variables – age and marital duration – in the relationship between marriage and well-being has also attracted the interest of researchers. Both marital satisfaction and well-being, when studied separately, vary over the life course (Diener and Suh 1998; Umberson et al. 2005). Specifically, life satisfaction appears to slightly increase with age, although positive affect decreases (Diener and Suh 1998). In contrast, marital satisfaction follows a U-shaped curve, reaching the highest peaks in the very early and late stages of marriage and decreasing during the intermediate stages (Orbuch et al. 1996). More recently, however, it has been argued that the use of cross-sectional designs accounts for this pattern (Glenn 1998) and that in fact marital satisfaction steadily

declines over time (Umberson et al. 2005; VanLaningham et al. 2001). This decline has been mainly attributed to the child- and work-related stresses of midlife (Orbuch et al. 1996). For example, prospective studies (Doss et al. 2009) have confirmed that becoming a parent is associated with a gradual decline in marital satisfaction, a finding attributed to the increased responsibilities faced by both parents. However, this decline seems to be steeper for parents who experience depressive symptoms prior to the birth of the child (Cox et al. 1999).

Proulx and colleagues (2007) in their meta-analysis found that marital duration is a significant moderator of the association between marital quality and well-being and this effect is demonstrated in both cross-sectional and longitudinal studies. Even after controlling for all other possible moderating factors, the concurrent association between marital quality and well-being is stronger for marriages of less than 8 years in comparison to longer marriages. However, longitudinal data suggest the opposite conclusion that the relationship is stronger for long-term marriages (greater than 8 years) (Proulx et al. 2007). Using a prospective design, Whisman (2007), in a study of 2,213 married adults, also demonstrated that the association between marital satisfaction and depression increases in magnitude over the life course. One explanation for the findings from longitudinal and prospective studies is that it may take longer for partners to get closer, become more attuned to each other and drop their levels of independence and differentiation of self to allow for the processes that link marital quality and well-being to be activated. This explanation is also supported by studies examining cross-spousal effects. For example, Davila and colleagues (1997) have failed to find cross-spousal effects in the association between marital quality and well-being in a sample of 154 newlyweds, using individual interviews, self-reported questionnaires and observations of interactions between spouses. However, cross-spousal effects have been evidenced in studies of couples in established marriages (Beach et al. 2003).

Studies that have examined age as the moderating variable show that for older couples negative and positive marital interactions, and possibly the affect that they are accompanied with, are more strongly associated with marital satisfaction in comparison to younger couples (Henry et al. 2007). However, of note is that older people generally report higher quality marital and social relationships, due to their improved ability to regulate their emotions and a tendency to terminate dysfunctional or superficial relations earlier in life (Carstensen and Mikels 2005).

## **5 Marital Quality and Well-Being: The Role of Social Support and the Cultural Context**

A wealth of studies show that social support, either from the spouse or from extended family and friends, is negatively correlated with depression (Moos et al. 1998; Pugliese and Shook 1998). In fact, it has been suggested that the benefits of

marriage may be the result of the social support exchanges between spouses (Birbitt and Antonucci 2007). Spousal support has been associated with marital satisfaction, fewer depressive symptoms, less perceived stress and less intense negative physiological responses, including cortisol levels and blood pressure, following a conflict (Dehle et al. 2001; Heffner et al. 2004). Perceived social support has been distinguished from actual social support responses in research, as actual support may undermine the individual's self-efficacy and/or encourage ruminative responses to negative events (Bolger et al. 2000). Interestingly, spousal support in positive events is more strongly and consistently related with marital satisfaction, than support in negative events, and is linked to factors promoting positive mental health, such as feelings of worth (Gable et al. 2006).

The lack of spousal support has been found to mediate the relationship between marital satisfaction and depression, particularly so for women (Davila et al. 1997) who tend to express greater subjective need for support in the marital context in comparison to men (Edwards et al. 1998). The moderating role of support from extended family and friends has also been examined. It has been suggested that friendships cannot buffer the negative effects of a poor and unsupportive marital relationship (Birbitt and Antonucci 2007). Nevertheless, Edwards and colleagues (1998), using semi-structured interviews with almost 100 couples, have shown that women, who receive high levels of social support from other sources, are less likely to develop depression when in distressed marriages. This is consistent with the traditional view of men tending to rely primarily on their spouses for intimacy and support, whereas women tend to refer to their wider social network in order to fulfil these needs (Culp and Beach 1998; Gurung et al. 2003). Consequently, it could be assumed that marital discord, which deprives men from meeting these needs, may posit a stronger risk factor for their well-being.

Researchers have also considered the importance of the broader cultural context within which marriage takes place in order to understand the relationship between marital quality and well-being. Cultural differences have been found in terms of the perception of self, with Western cultures being described as individualistic ("a social pattern that consists of loosely linked individuals who view themselves as independent of collectives") and East Asians being described as collectivist ("a social pattern consisting of closely linked individuals who see themselves as parts of one or more collectives") (Triandis 1995, p. 2). Dion and Dion (1993) proposed that features of individualistic societies, such as the USA, may prevent couples from developing intimacy and maintaining proximity in their marriage due to their increased emphasis on independence and differentiation. On the contrary, collectivistic societies, such as Japan, are more likely to promote close relationships and interdependency (Oyserman and Lee 2008). Individuals who adopt a less individualistic view of the self, even within individualistic societies, may report greater marital satisfaction (Antill 1983) and be more likely to receive support that will act as a buffer to contextual stress factors (Triandis et al. 1988). These individuals may also exhibit a stronger relationship between marital quality and well-being. Lansford and collaborators (2005) conducted two studies with Japanese and American couples, in their effort to explore the moderating role of

cultural factors in the relationship between marital quality and well-being. In the first study, they administered self-report measures using structured interviews, and in the second study, they conducted focus groups, followed by qualitative content analysis of the data, but did not find clear evidence to support their hypothesis.

## 6 A Cross-Sectional Study with Greek Married Couples

Although differences in the levels of collectivism or individualism are usually assumed to exist between cultures, significant variation within a country has also been observed (Kashima et al. 2004). For example, Kashima and colleagues (2004) found that residents in metropolitan areas de-emphasised the collective self in comparison to residents in regional cities, in both Australia and Japan. It may thus be concluded that issues related to how coping varies from an individualistic to a collectivist context can also be studied within cultures. If we consider collectivism and individualism as the extreme poles of a continuum, Greece has been proposed to be in the middle (Oyserman et al. 2002). However, due to the rapid large-scale internal migration to the urban cities, rural areas of Greece differ significantly from large urban centres, with the former still emphasising the wider family network and collectivistic values and the latter increasingly adopting individualistic values (Georgas 1989, 1991).

As Greek culture is different in some respects from the more individualistic Western cultures, we conducted a cross-sectional study with Greek married couples in a rural and an urban setting in order to explore the relationship between marital satisfaction and depressive symptoms. We were interested in answering the following questions:

1. Is marital satisfaction negatively correlated with depressive symptoms both intra-individually (Hypothesis 1a) and between partners (cross-spousal effects), with the depressive symptoms of one partner being negatively correlated with the marital satisfaction of the other partner (Hypothesis 1b)?
2. Is perceived spousal support negatively correlated with depressive symptoms for each partner separately (Hypothesis 2a)? Is spousal support mediating the relationship between marital satisfaction and depressive symptoms (Hypothesis 2b)?
3. Is perceived social support from family and close friends negatively correlated with depressive symptoms (Hypothesis 3a)? Is social support from family and friends moderating the relationship between marital satisfaction and depressive symptoms (Hypothesis 3b)?
4. Is area of residence moderating the relationship between marital satisfaction and depressive symptoms (Hypothesis 4)?
5. Is gender moderating the relationship between marital satisfaction and depressive symptoms (Hypothesis 5)?
6. Is marital duration moderating the relationship between marital satisfaction and depressive symptoms (Hypothesis 6)?

## 7 Method

### 7.1 Participants

Ninety-five married couples comprised the study participants. A convenience sampling procedure was adopted, but every effort was made to secure a wide range of participants in terms of age, socio-economic and educational status. Each spouse completed separately a battery of questionnaires, which they were asked to seal in an envelope and enclose together with their partner's questionnaires in another envelope in order to return them to the researchers. Two hundred and seventy-six questionnaires were sent to 138 couples, from which 78 were not returned and eight were completed by only one spouse and thus were not used in the analysis. All participants were Greek. About 49.5% (47 couples) lived in the two largest Greek cities (Athens or Thessaloniki), and 50.5% (48 couples) lived in rural areas (small towns and villages with a population from 1,500 to 50,000 residents). The mean age for men was 46.5 years and for women 42.2 years. About 86% of the couples had up to four children. Marital duration ranged between 1 and 47 years, with a mean of 17 years. About 64% of the participants living in urban areas held university degrees, as opposed to about 45% of the participants in rural areas.

### 7.2 Instruments

*The Beck Depression Inventory-II* (BDI-II; Beck et al. 1996), as adapted in Greek by Kosmidou and Roussi (2002), was used to measure depressive symptoms. The BDI-II is a self-report instrument, comprising 21 items, for example, "(0) I do not feel sad, (1) I feel sad much of the time, (2) I am sad all the time, (3) I am so sad or unhappy that I can't stand it". The overall score measures the severity of depressive symptoms experienced. In the present study, the scale demonstrated good internal reliability ( $\alpha = .83$ ). Principal component analysis with promax rotation on Greek samples has yielded two factors, as with the US samples. The two factors can be described as an affective/somatic factor and a cognitive factor (Stalikas et al. 2011). The two factors reflect the variety of symptoms included in the DSM-IV description of depression. Given the high internal consistency of the scale, an overall score was used.

*The Dyadic Adjustment Scale* (DAS; Spanier 1976) was used to measure marital satisfaction. The DAS consists of 32 questions exploring different aspects of the quality of marital relationship. Example items include "How often do you discuss or have you considered divorce, separation, or terminating the relationship?" The overall score is an indicator of global marital satisfaction. In the present study, the scale demonstrated good internal reliability ( $\alpha = .91$ ). Principal component analysis with oblimin rotation yielded eight factors, the first of which explained

27.38% of variance. These factors were conceptually related to those reported in the international literature (Spanier 1976). Because of the theoretical and empirical relatedness of the factors to marital satisfaction (Spanier 1976) and the high internal consistency of the scale, we used an overall index of marital satisfaction.

In order to assess perceived spousal support and social support from important family members or friends, the *Multi-Dimensional Support Scale* (MDSS; Winefield et al. 1992) was used. The MDSS comprises 12 items, six of which examine the level of emotional, informational and tangible support available and six measure the adequacy of each available type of support. Example items include “How often did they (i.e., family members and friends or spouse) really listen to you when you talked about your concerns or problems?” Principal component analysis yielded one factor ( $\alpha = .91$ ), which explained 54.33% of variance.

## 8 Results

### 8.1 Preliminary Analyses

First, we examined the relationship between depressive symptoms and demographic variables. We found that women living in rural areas reported more depressive symptoms than women in urban areas,  $t(86.4) = 4.26$ ,  $p < .05$ ;  $M = 12.65$ ,  $SD = 7.10$  and  $M = 7.19$ ,  $SD = 5.20$ , respectively, and that women with higher education reported fewer depressive symptoms than women with lower education,  $r = -.22$ ,  $p < .05$ . Finally, among women living in rural areas, the longer the duration of marriage, the higher the depressive symptoms,  $r = .43$ ,  $p < .01$ . Because level of education and area of residence were highly interrelated,  $\chi^2(1, N = 190) = 25.89$ ,  $p < .001$ , area of residence was taken into account in subsequent analyses in order to minimise multicollinearity effects. Similarly, marital duration and age were highly intercorrelated,  $r = .93$ ,  $p < .01$ , and thus, marital duration was the variable included in subsequent analyses.

### 8.2 The Relationship Between Marital Quality, Social Support and Depressive Symptoms: Bivariate Analyses

Table 8.1 presents the means and standard deviations of the study variables by gender and area of residence, the correlation coefficients between the study variables by gender and area of residence as well as the within spouses intercorrelations. As expected, marital satisfaction between the members of a couple was highly intercorrelated,  $r = .68$ ,  $p < .01$ , but depressive symptoms were not. In addition, marital satisfaction (Hypothesis 1a), females:  $r = -.61$ ,  $p < .01$ , males:  $-.59$ ,  $p < .01$ , and spousal support (Hypothesis 2a), females:  $r = -.41$ ,

**Table 8.1** Means, standard deviations, and correlations between the study variables

Study variables	Study variables (Urban/rural areas)		M (SD) (Urban/rural areas)	
	Depression	Marital satisfaction	Men	Women
Depression	.24/.16	-.44**/-.72**	8.87 (5.54)/9.21 (6.32)	7.19 (5.24)/12.65 (7.11)
Marital satisfaction	-.62**/-.57**	.72**/.65**	117.49 (17.18)/115.06 (17.63)	119.65 (17.01)/112.39 (15.45)
Spousal support	-.57**/-.61**	.83**/.51**	18.98 (3.55)/18.30 (4.02)	19.06 (4.47)/17.02 (4.18)
Support from others	-.30**/-.53**	.25/.34**	16.38 (3.77)/16.96 (4.04)	16.68 (4.04)/16.71 (4.00)
			Support from others	
			Spousal support	
			Support from others	

*Note:* The correlations between partners are presented along the diagonal; the correlations for women are presented above the diagonal and the correlations for men below the diagonal

\* $p < .05$ ; \*\* $p < .01$

$p < .01$ , males:  $-.61$ ,  $p < .01$ , were negatively correlated with depressive symptoms, although the latter did not hold for women in urban areas,  $r = -.19$ ,  $p > .05$ . In terms of cross-spousal effects (Hypothesis 1b), in urban areas the depressive symptoms of men were negatively correlated to their partner's marital satisfaction,  $r = -.43$ ,  $p < .01$ , whereas in rural areas the depressive symptoms of women were negatively correlated to their partner's marital satisfaction,  $r = -.48$ ,  $p < .01$ . Finally, in partial support of our predictions, social support from others, that is, family and friends, was negatively related to depressive symptoms for men only (Hypothesis 3a),  $r = -.43$ ,  $p < .01$ .

### ***8.3 The Relationship Between Marital Quality, Social Support and Depressive Symptoms: The Actor-Partner Interdependence Model***

It has been proposed that outcomes for individuals involved in interdependent relationships do not depend only on their own characteristics and experiences but also on their partners' (Kashy and Kenny 2000; Kenny et al. 2006). For example, marital satisfaction does not only depend on personal perceptions (actor) of spousal support but also on how the partner perceives the support provided by the actor. The Actor-Partner Interdependence Model (APIM) takes into account the mutual influence spouses exert on each other and uses a multilevel analytic approach, which allows the researcher to examine the variable relationships using concurrently individual and dyadic data (Kenny et al. 2006).

In order to test the moderating role of gender, marital duration, social support provided by friends and relatives and cultural context (Hypotheses 3b, 4, 5 and 6) and the mediating role of spousal support (Hypothesis 2b), we ran two models using the SPSS 17.0 mixed models module, with depressive symptoms as the dependent variable. In the first model, we included all variables that reached a .01 significance level. In addition, we included all two-way interactions as well as the three-way interaction between gender, marital satisfaction and perceived support from others, in an effort to explore whether support from others moderates the relationship between marital satisfaction and depressive symptoms, for males and females separately (Hypotheses 3b and 4). The least significant interactions were deleted one step at a time so that the final model included all main effects and the statistically significant interactions (Table 8.2).

We found that couples who live in rural areas experience more depressive symptoms,  $b = -4.15$ ,  $t(90) = -4.21$ ,  $p < .01$ , than those living in urban areas, particularly so for women,  $b = 3.57$ ,  $t(87) = 2.67$ ,  $p < .01$ . Additionally, spouses who feel satisfied by their marriage,  $b = -3.08$ ,  $t(140) = -5.62$ ,  $p < .01$ , and spouses who believe that they are supported by their partner,  $b = -1.54$ ,  $t(166) = -2.58$ ,  $p < .05$ , experience fewer symptoms. The latter was stronger for couples living in rural areas,  $b = 1.74$ ,  $t(145) = 2.53$ ,  $p < .05$ , and for couples



**Table 8.2** Multilevel regression model predicting depressive symptoms

Predictor variable	<i>b</i>	SE	df	<i>t</i>
Intercept	11.63	.78	107	14.86**
Area of residence <sup>a</sup>	-4.15	.98	90	-4.21**
Duration of marriage	.67	.34	86	1.94
<i>Actor variables</i>				
Gender <sup>b</sup>	-2.46	1.01	93	-2.43*
Marital satisfaction	-3.08	.55	140	-5.62**
Perceived spousal support	-1.54	.60	166	-2.58*
Perceived support from friends	.79	.53	96	1.49
<i>Partner variables</i>				
Marital satisfaction	.62	.56	143	1.11
Perceived spousal support	.82	.49	156	1.66
Perceived support from friends	-1.31	.42	140	-3.15**
<i>Interaction terms<sup>c</sup></i>				
Gender × area of residence	3.57	1.34	87	2.67**
Gender × perceived support from friends (actor)	-1.99	.67	149	-2.98**
Area of residence × perceived spousal support (actor)	1.74	.69	145	2.53*
Marital satisfaction (actor) × marital satisfaction (partner)	1.35	.53	142	2.56*
Marital satisfaction (actor) × perceived spousal support (partner)	-1.77	.53	166	-3.35**
Perceived spousal support (actor) × perceived support from friends (actor)	-1.20	.52	168	-2.31*
Gender × marital satisfaction (actor) × perceived support from friends (actor)	1.95	.63	111	3.10**

<sup>a</sup>0 = rural; 1 = urban<sup>b</sup>0 = women; 1 = men<sup>c</sup>Only statistically significant interactions are presented\* $p < .05$ ; \*\* $p < .01$ 

who believe that they are supported by others,  $b = -1.20$ ,  $t(168) = -2.31$ ,  $p < .05$ . Fewer depressive symptoms experienced by a spouse were also associated with the partner's perception that he/she is supported by others,  $b = -1.31$ ,  $t(140) = -3.15$ ,  $p < .01$ . In addition, the relationship between a spouse's depressive symptoms and his/her satisfaction from marriage was moderated by the partner's satisfaction from marriage, in that it was stronger when the partner's satisfaction was lower,  $b = 1.35$ ,  $t(142) = 2.56$ ,  $p < .05$ , and by the partner's perceived spousal support, in that it was stronger when the partner believed he/she was not supported,  $b = -1.77$ ,  $t(166) = -3.35$ ,  $p < .01$ .

Finally, the three-way interaction between gender, satisfaction from marriage and support from others was also significant,  $b = 1.95$ ,  $t(111) = 3.10$ ,  $p < .01$ . In support of Hypothesis 3b, the negative relationship between marital satisfaction and depressive symptoms was stronger for men when their level of social support from others was low, whereas this relationship was weaker for women when the level of support from others was low.

In the second model, we examined whether spousal support (Hypothesis 2b) mediates the relationship between marital satisfaction and depressive symptoms. Following the procedure recommended by Baron and Kenny (1986), we confirmed that the three variables are interrelated, and then we used the 17.0 SPSS mixed models module to test, using two separate models, whether each independent variable predicts depressive symptoms, after taking into account gender, marital duration and area of residence. We also confirmed that marital satisfaction predicts spousal support. In the final model, we included all variables, gender, marital duration, area of residence, spousal support and marital satisfaction. Contrary to our expectations, spousal support was no longer a predictor,  $b = -0.08$ ,  $t(180) = -1.14$ ,  $p > .05$ .

## 9 Discussion

The purpose of the present study was to examine the relationship between marital satisfaction and depressive symptoms and to explore the moderating role of gender, marital duration, social support and cultural context. The findings only partially supported the research hypotheses. Specifically, consistent with previous findings (Proulx et al. 2007; Whisman 2007), intra-individual correlations showed that marital satisfaction is negatively correlated with depressive symptoms. Moreover, inter-individual correlations confirmed the presence of cross-spousal effects, in that marital satisfaction was associated not only with one's own depressive symptoms but also with their partner's (Beach et al. 2003; Coyne et al. 2002; Sacco et al. 1993). Spousal support was negatively related to depressive symptoms experienced by men, regardless of area of residence. This effect was observed only for women living in rural areas. In addition, women living in rural areas differed from the remaining participants, in that the longer the duration of their marriage, the higher their depressive symptoms.

We conducted a second set of analyses, wherein we included all variables, using both individual and dyadic data. These analyses showed a more complex pattern of relationships and highlight the mutual influence partners exert on one another (Beach et al. 2003). Specifically, we found that the lower the personal marital satisfaction, the higher the depressive symptoms, particularly when the partner's marital satisfaction is low or when the partner perceives the spousal support as low. One explanation for this may be that the partner's low marital satisfaction and low perceived spousal support amplify the impact of low personal marital satisfaction on depression, although a prospective design is necessary to support such a causal explanation.

Contrary to our hypotheses, marital duration did not moderate the relationship between marital satisfaction and depressive symptoms, and spousal support did not mediate the relationship between depressive symptoms and marital satisfaction in our study. In fact, in the final analysis using the APIM model, spousal support and marital satisfaction appeared to make independent contributions as predictors. Furthermore, the relationship between spousal support and depressive symptoms

was moderated by perceived support from others and was stronger for couples living in rural areas than for couples living in urban areas. The latter finding is consistent with what we expected, given the presumed differences in levels of collectivism between the two areas. Studies have shown that in more collectivistic contexts, as we assume Greek rural areas to be (Georgas 1989, 1991), perceived social support may have more beneficial effects (Goodwin and Plaza 2000; Triandis et al. 1988).

The present study was a preliminary effort to explore the role of the area of residence in the relationship among marital satisfaction, social support and depressive symptoms. However, the absence of differences between the two areas, other than the one mentioned above, may reflect the significance of marital relationship and social support for well-being, regardless of the influence of cultural characteristics. This may be the reason why Lansford and collaborators (2005) did not find clear evidence to support the hypothesis that culture moderates the relationship between marital satisfaction and well-being. Nonetheless, in our study the absence of differences between the two areas may also reflect the gradual homogenisation of the Greek culture regarding collectivistic values. The studies that reported differences in the levels of collectivism between rural and urban areas were conducted approximately 20 years earlier (Georgas 1989, 1991), and Greece is dynamically adopting more individualistic values (Georgas et al. 2006). Because we did not include measures of collectivism in our study, we cannot be certain that these differences are still present.

Although it has been suggested that friendships cannot buffer the negative effects of a poor and unsupportive marital relationship (Birbitt and Antonucci 2007), in our study the relationship between marital satisfaction and depressive symptoms was moderated by the level of social support from others, and this moderating effect was a function of gender. More specifically, for males, the lower the marital satisfaction, the higher the depressive symptoms, particularly when social support from others is low. Although this is a cross-sectional study and causality is not tested, the findings suggest that for men, social support from others attenuates the relationship between marital dissatisfaction and depressive symptoms. Men may turn to their wider social network for support, when their marriage does not fulfil these needs, and may benefit from doing so. These findings are inconsistent with the traditional view of men mainly relying on their wives for support (Culp and Beach 1998; Gurung et al. 2003) and with previous studies that confirm the reverse moderating effects: that it is only women who benefit from external sources of support when in a dysfunctional marriage, whereas men who are supported outside the marriage have a higher likelihood of depression (Edwards et al. 1998).

In contrast, in our study we found that for women, the lower the marital satisfaction, the higher the depressive symptoms, particularly when social support from others is high. Previous studies suggest that women, compared to men, tend to engage excessively in negative thinking (Nolen-Hoeksema et al. 1999), especially with regard to interpersonal problems (Mezulis et al. 2002) and during their social contacts (Rose et al. 2007). This gender difference has been used to explain the

higher prevalence of depression in women, as rumination appears to be a strong predicting factor of the onset and maintenance of depression (McBride and Bagby 2006; Rose et al. 2007). Thus, it could be hypothesised that poor marital satisfaction for women may stimulate ruminative processes during social contacts with family and friends, which may further strengthen the relationship between depressive symptoms and marital dissatisfaction. Although contradictory to international literature, similar findings have been reported before in Greek culture. For example, some studies have failed to find a link between social support and emotional well-being in new mothers in Greece and Cyprus (Moraitou et al. 2010; Thorpe et al. 1992), while other studies emphasise that social support exchanges in Greece may not have the same buffering effect as commonly reported in international research (Kafetsios 2006). Nevertheless, the present study supports outcomes which show that in societies with traditionally defined gender roles, such as Greece (Hofstede 2001), there are significant differences in the way men and women experience social support (Kafetsios 2007; Stevens and Westerhof 2006).

Our study has several limitations, including the cross-sectional study design, the non-probability sampling procedure and the small sample size. Furthermore, we used a general population sample. Several researchers in the field have suggested that results from community populations may not generalise to clinical populations and that there are significant differences between major depressive episodes and depressive symptomatology (Coyne 1994; Whisman and Bruce 1999). In addition, we did not measure levels of collectivism and individualism, and differences between the two areas were assumed based on previous findings (Georgas 1989, 1991). Finally, of note are recent findings showing that the valence of the measure of marital quality being used in the research (e.g., discord vs. happiness) may moderate the results, with the relationship between marital quality and well-being being stronger in longitudinal studies which measure the negative aspects of marital relationship (Proulx et al. 2007). Thus, some scholars criticise global measures of marital quality and propose that the positive and negative aspects of relationships may be two distinct dimensions that differentially influence well-being, merit separate attention and should not be treated as the opposite extremes of a continuum (Henry et al. 2007; Lansford et al. 2005; Williams 2003). Further studies that address the above limitations need to be conducted in order to better understand the marital and social context of well-being in the Greek population.

In conclusion, this preliminary study confirms the strong relationship between marital satisfaction and depressive symptoms, but also suggests that this relationship is complex. For example, in addition to gender and spousal support, we found indications that social context, social support from others and mutual influence partners exert on one another are factors that may play an important role in clarifying the mechanisms that link marital quality and well-being, but are rarely studied. However, this complexity may in part reflect the specific characteristics of the Greek culture, particularly regarding the role of social support in moderating the relationship between marital quality and depressive symptoms. The present findings underscore the significance of social context and interpersonal relationships, especially marriage, when studying psychological well-being and the importance of taking them into account in the design of clinical interventions.

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**Part II**  
**Positive Psychology and Human Strengths**

# Chapter 9

## The Role of Dispositional Optimism in Physical and Mental Well-Being

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### 1 Introduction

In the last decades, research has focused on the beneficial effects of positive psychological factors on health. One of the most extensively investigated factors of positive psychology is optimism. It is commonly believed that being optimistic confers a buffer against mental and physical health problems. But are these benefits real? Do optimistic people fare better when facing challenges and adversity? And, if so, what are the mechanisms underlying these associations? This review aims to provide the reader with an overview of the current knowledge on optimism and its relations with several biological and psychosocial markers.

### 2 Optimism

When reviewing the literature, it appears that the notion of optimism has been approached from a variety of perspectives. Basically, optimism involves holding positive expectancies for one's future. However, while some theoretical views focus on expectancies that apply to a particular situation, others focus on more general expectancies. There are two main scientific conceptualizations which are theoretically interconnected but not equivalent, that is, dispositional optimism (Scheier et al. 1994) and explanatory (style) optimism (Peterson and Seligman 1984).

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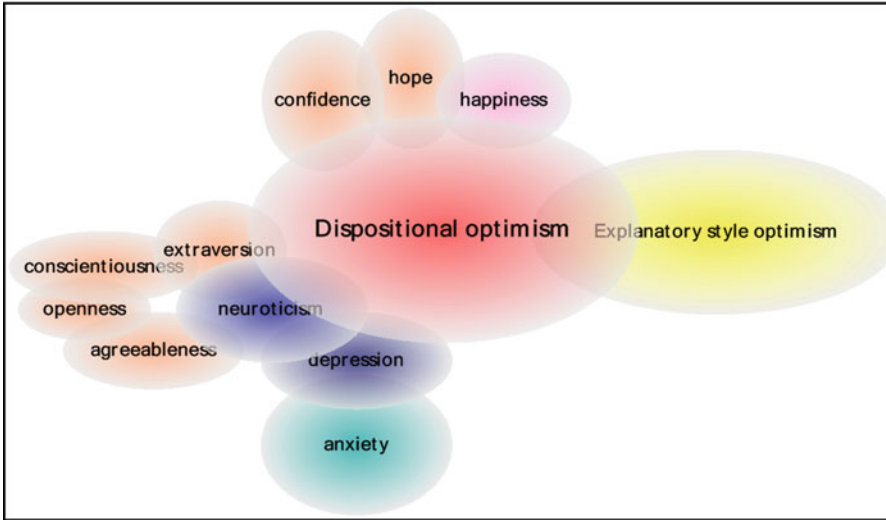
Dispositional optimism refers to one's generalized positive expectations toward the future (Carver et al. 2010) and is usually measured by asking people directly whether they expect their future to be good or bad (Scheier et al. 1994). People with high dispositional optimism tend to expect good things rather than bad things to happen in their future. On the contrary, people with low dispositional optimism have the inclination to anticipate negative outcomes regarding life challenges and believe that these situations are unchangeable and uncontrollable. Perceptions of lack of control are linked to learned helplessness, due to which people become passive and unresponsive to a stressor because they believe that there is no sense in trying to change something that is unchangeable (Maier and Seligman 1976). These differences in expectations about one's future are thought to greatly influence our behavior.

The concept of dispositional optimism is based on the self-regulation theory of Carver and Scheier (1981), which posits that people organize their behavior toward goals they perceive as desirable and attainable (Carver et al. 2010). Accordingly, individuals who hold positive expectations for their future see their desired outcomes as attainable and engage in behaviors that promote the achievement of their goals. In contrast, people who hold negative expectations for their future see their desired outcomes as unattainable and give up more easily. Thus, without confidence in the attainability of the desired goals, no action is taken to achieve them.

The idea of explanatory optimism or an optimistic explanatory style rests on the assumption that future expectancies are mainly derived from attributions about past events (Peterson and Seligman 1984). This conceptual model originates from the learned helplessness theory (Seligman 1975). This model proposes that people with an optimistic explanatory style attribute drawbacks to temporary, external, and specific situational factors, whereas people with a negative explanatory style attribute problems to permanent, internal, and global causes (Gillham et al. 2001; Tomakowsky et al. 2001). Therefore, explanatory optimism is commonly assessed by measuring patterns of attributions about the causes of past events and inferring whether these past attributions ultimately yield future expectancies.

As evidenced from these definitions, there is a clear theoretical connection between dispositional optimism and explanatory style optimism; both assume that the consequences of optimism derive from differences in expectancies (Scheier and Carver 1992). However, there are also some important differences between dispositional optimism and explanatory style optimism. Whereas explanatory style optimism focuses on the attributions people make about a certain past event, dispositional optimism refers directly to one's future expectancies. Therefore, dispositional optimism centers around future and is closely related to life engagement, vitality, and feelings of having a purpose in life (Giltay et al. 2006a). Furthermore, the difference between dispositional optimism and explanatory style optimism has been confirmed by the relatively poor correlations (range from .10 to .25) found between two scales that measure these two conceptions of optimism (Ahrens and Haaga 1993; Dember 2001; Peterson and Vaidya 2001; Tomakowsky et al. 2001).

Besides these two main conceptions of optimism, other approaches have also been proposed (Fig. 9.1). The self-efficacy theory is based on people's expectancies of being able to execute desired behaviors successfully by using adequate coping



**Fig. 9.1** Psychological constructs related to dispositional optimism

strategies across a broad range of demanding situations (Schwarzer 1994). In contrast to dispositional optimism, the self-efficacy theory is more focused on the importance of personal agency in subsequent behavior and holds that this behavior is best predicted by domain-specific expectancies (Bandura 1982).

Another way to look at optimism is through the notion of unrealistic optimism. Unrealistic optimism is characterized by people's tendency to overestimate the chances of future desirable outcomes (Helweg-Larsen and Shepperd 2001; Weinstein 1980; Weinstein and Klein 1996). People may consider their chances of getting happily married or receiving a promotion above average (Lench 2009). There is some evidence that the general population is prone to be overly (and unrealistically) optimistic (Klein and Weinstein 1997). However, there are cultural and gender differences. It seems that people from Western cultures (e.g., North America, Western Europe) are more likely to be unrealistically optimistic than people from Eastern cultures (e.g., Japan), when comparing their risk perception of potential adverse future events (Rose et al. 2008). Furthermore, men are more likely to be overconfident about their chances to avert a negative event than women (Lin and Raghbir 2005).

Other constructs related to optimism are hope, hopelessness, and happiness. Optimism has been inversely related to hopelessness, which refers to the inability to imagine plausible ways to achieve a personal goal (Snijder et al. 2002). Compared to hope, dispositional optimism may reflect more general beliefs about future events (Rand 2009). Thus, hope focuses more directly on the personal attainment of specific goals, whereas optimism focuses more broadly on the expected quality of future outcomes in general (Bryant and Cvengros 2004). Nevertheless, optimism has been shown to be significantly correlated with hope ( $r = .55$ ) (Magaletta and Oliver 1999). Happiness is a psychological state that reflects a positive balance in

the evaluation of positive versus negative experiences in one's life, and the person perceives that this balance has met his/her expectations. Dispositional optimism, by contrast, is a personality trait that implies a disposition to believe that, in the future, good things are more likely to happen than bad things (Scheier et al. 1994). Optimism and happiness are interrelated, but happiness is less stable over long periods of time and is more closely linked to hedonism and more dependent on environmental factors, such as economic and social problems (Veenhoven 2003).

The most commonly used instrument to measure dispositional optimism is the Life Orientation Test (LOT), which was developed by Scheier and Carver in 1985. Other instruments to measure optimism include the four-item questionnaire (4Q; Giltay et al. 2006b) and an optimism subscale of the scale for subjective well-being of older subjects (SSWO; Giltay et al. 2004).

In the following sections, we give an overview of important determinants of optimism, the effects of optimism on health outcomes, and the potential mechanisms underlying these associations. In view of the fact that our group has primarily investigated dispositional optimism, the current literature review will only focus on studies concerning dispositional optimism and its correlates with health outcomes, coping, biological factors, and social integration. Thus, throughout this chapter, when we refer to optimism, we explicitly refer to dispositional optimism.

## ***2.1 Development of Optimism***

Optimism is thought to originate from a combination of genetic and environmental factors (Gillham and Reivich 2004; Vaughan 2000). Although there is some evidence of a genetic predisposition for optimism, such research does not explain how optimism develops (Plomin et al. 1992). Increasing evidence suggests that certain environmental factors during childhood may also play a crucial role in the development of one's disposition to optimism (Gillham and Reivich 2004). For example, children who experience negative events in childhood, such as abuse or parental hostility, are more likely to display lower optimism (Brodhagen and Wise 2008; Hjelle et al. 1996; Korkeila et al. 2004). Furthermore, parents appear to be able to increase the optimistic outlook of their children by modeling their children's optimistic beliefs and behaviors when facing adversity. Parents may also promote optimism by helping their children build skills and develop beliefs in their ability to face challenges (Gillham and Reivich 2004). Also a secure attachment appears to increase the level of optimism of children (Carver & Scheier, 2002). Other predictors of higher level of optimism in adolescence and early adulthood are parental socioeconomic status, school achievement, vocational education, and work history (Ek et al. 2004). Younger age has also been found to be predictive of higher level of optimism in older populations (Giltay et al. 2006a). Other correlates of higher levels of optimism in older age are higher education, living with others, and feeling healthy (Giltay et al. 2007). However, it is yet to be investigated whether these or other sociodemographic factors may predict higher level of optimism over time in older adults.

## ***2.2 Temporal Stability of Optimism***

Dispositional optimism has been posited as a trait-like characteristic that determines the self-regulation of behavior (Scheier and Carver 1992). A reliability coefficient of the LOT ranging from .58 to .82 has been reported over periods of time lasting from several weeks to 1 year (Atienza et al. 2004; Scheier et al. 1994). Similar reliability coefficients (Cronbach's alpha of .78) were found for the 4Q in a prospective study with 15 years of follow-up (Giltay et al. 2006b). Thus, one's level of optimism is relatively stable over time, as is also evident from the high temporal stability in longitudinal studies (Achat et al. 2000; Bromberger and Matthews 1996; Scheier et al. 1994). In a small nonrandomized study, dispositional optimism remained relatively unaffected after intensive mental training and physical coaching (Norlander et al. 2002). However, fluctuations in optimism over time have also been reported, suggesting that changes in dispositional optimism are possible (Sweeney et al. 2006).

## ***2.3 Optimism as a Predictor of Health Outcomes***

Epidemiological studies have shown that optimism is related to a variety of health outcomes, both in the general population and in patients. Higher levels of optimism correlate with subjective health outcomes such as perceived health or better functional status (Achat et al. 2000) and objective health measures such as disease progression and mortality (Chida and Steptoe 2008). Cardiovascular mortality risk and survival have been particularly well investigated (Giltay et al. 2004, 2006a). Regarding mental health, optimism has been associated with better psychological well-being (Cederblad et al. 1995; Giltay et al. 2006b), less depressive symptoms (Giltay et al. 2006b), and better psychological adjustment in chronically ill patients (Fournier et al. 2002a). In the following sections, we provide an overview of the different relations between optimism and physical and mental health.

# **3 Physical Health**

## ***3.1 Physical Functioning and Perceived Health***

In the last decades, optimism has been increasingly associated with better health outcomes and quality of life (Bain et al. 2003; Wrosch and Scheier 2003). An analysis of the Normative Aging Study showed that dispositional optimism was positively correlated with several scales of the Medical Outcome Study 36-item short-form health survey (SF-36), independently of depression and demographic variables in middle-aged men (Achat et al. 2000). Similarly, another study among older women showed that optimism was associated with better physical functioning

(Umstatted et al. 2007). Self-rated health was also strongly associated with levels of optimism in community-dwelling older persons (Giltay et al. 2007). This association has also been found in patient populations. A study among patients receiving cardiac rehabilitation showed that higher optimism was positively associated with perceived health through more adaptive coping (Shen et al. 2004).

### 3.2 *Morbidity and Mortality*

*Cardiovascular disease.* There is increasing evidence suggesting that optimism may also affect disease progression and recovery (Table 9.1). Scheier et al. (1999) studied the effects of optimism in a group of patients undergoing coronary artery bypass surgery and found that patients with higher optimism scores responded better to the surgical intervention and displayed a faster physical recovery. These beneficial effects were also present 6 months after the intervention, as optimistic patients were more likely to engage in vigorous physical exercise and resume work (Scheier et al. 1989). In a similar study conducted among women who underwent a coronary artery bypass operation, women who were optimistic were more likely to accept their situation and to display more favorable outcomes (King et al. 1998). In a later longitudinal study among patients participating in a cardiac rehabilitation program, optimism was found to decrease global coronary risk by increased aerobic capacity through engagement in healthy behaviors (Shepperd et al. 1996). Accordingly, a prospective study among patients undergoing a cardiac transplantation showed that positive expectations predicted better adherence to medical treatment and a favorable recovery (Leedham et al. 1995).

Optimism has also been associated with survival and decreased mortality risk both in community-dwelling healthy populations and in patients (Chida and Steptoe 2008). In a prospective study among a community-dwelling population of elderly men and women, higher optimism scores were predictive for less all-cause and cardiovascular mortality after 9 years of follow-up, although this association was stronger in men than in women (Giltay et al. 2004). These findings were confirmed in a later study which specifically investigated the risk of cardiovascular death in a cohort of older men from the general population (Giltay et al. 2006a). The latter study showed that the association with all-cause mortality was substantially weaker (Giltay et al. 2006c).

*Cancer.* The evidence of optimism being beneficial for disease progression and recovery in patients with cancer is less consistent. A study among postoperative breast cancer patients showed that optimism was associated with less altered immune responses as, for example, less natural killer cell activity (Von Ah et al. 2007). Furthermore, higher optimism scores were associated with better physical functioning and less somatic complaints in patients with cancer (Tallman et al. 2007; Wyatt et al. 1999).

The association between optimism and cancer mortality has been examined in cohorts of cancer patients but with mixed results. While some prospective studies found a protective effect of dispositional optimism on survival of cancer patients



**Table 9.1** Studies investigating the associations of dispositional optimism with morbidity and mortality

Study	N	Sample type	Optimism measure	Outcome	Study design	Results
<i>Review studies:</i>						
Chida and Steptoe (2008)	70 studies	Healthy and disease populations	Several scales	Survival	Meta-analysis of longitudinal studies	Optimism predicted survival
Ironson and Hayward (2008)	122 studies	HIV patients	Several scales	Disease progression	Review of longitudinal studies	Optimism predicted slower disease progression
<i>Original research:</i>						
Allison et al. (2003)	101	Patients with head and neck cancer	LOT	Survival	Longitudinal, FU = 1 year	Optimism predicted survival
Butow et al. (1999)	125	Patients with metastatic melanoma	COPE	Survival	Longitudinal, FU = 2 years	Optimism predicted survival
Ferreira and Sherman (2007)	73	Patients with osteoarthritis	LOT-R	Well-being	Cross-sectional	Optimism associated to less pain and higher well-being
Fournier et al. (2002b)	104	Patients with chronic diseases	LOT-R	Physical functioning (SF-36)	Cross-sectional	Optimism associated with better adaptation to disease
Giltay et al. (2004)	941	Older community-dwelling subjects	SSWO	All-cause and CV mortality	Longitudinal, FU = 9 years	Optimism predicted less all-cause and CV mortality
Giltay et al. (2006b)	887	Older community-dwelling men	4-item questionnaire	CV mortality	Longitudinal, FU = 15 years	Optimism predicted less CV mortality
Ironson et al. (2005)	177	HIV patients	LOT-R	Disease progression	Longitudinal, FU = 2.5 years	Optimism predicted slower disease progression

(continued)

Table 9.1 (continued)

Study	N	Sample type	Optimism measure	Outcome	Study design	Results
King et al. (1998)	55	Women undergoing bypass surgery	LOT	Sickness impact profile	Longitudinal, FU = 12 months	Optimism predicted better functional ability
Milam et al. (2004)	412	HIV patients	LOT-R	Disease progression, CD4 counts	Longitudinal, FU = 18 months	Moderate optimism predicts less disease progression
Morales Garcia et al. (2011)	239	Patients undergoing chronic haemodialysis	LOT-R	Health related quality of life	Cross-sectional	Optimists associated with subjective health status
Motivala et al. (1999)	38	Diabetic patients	LOT	Somatic complaints	Longitudinal, FU = 10 years	Optimism predicted with less somatic complaints
Ridder et al. (2000)	166	PD or MS patients	LOT	Adaptation to disease	Cross-sectional	Optimists associated with better adaptation to disease
Shepperd et al. (1996)	22	Cardiac patients	LOT	Global Coronary Risk	Longitudinal, FU = 18 weeks	Optimism predicted less CV morbidity
Scheier et al. (1989)	51	Middle-aged men	LOT	Physical function after operation	Longitudinal, FU = 6 months	Optimism predicted better recovery
Scheier et al. (1999)	309	Patients undergoing bypass surgery	LOT-R	Rehospitalization rate	Longitudinal, FU = 6 months	Optimism predicted lower rehospitalization rates
Schofield et al. (2004)	204	Patients with lung cancer	LOT	Survival	Longitudinal, FU = 5 years	Optimism did not predict lung cancer survival
Schulz et al. (1996)	238	Cancer patients	LOT	Mortality	Longitudinal, FU = 8 months	Low optimism predicted mortality
Tallman et al. (2007)	56	Cancer patients	LOT	Positive coping	Longitudinal, FU = 3 years	Optimism predicted better coping
Tomakowsky et al. (2001)	78	HIV-infected men	LOT, EASQ	CD4 counts	Longitudinal, FU = 2 years	Optimism did not predict CD4 counts
Von Ah et al. (2007)	54	Breast cancer patients	LOT-R	Immunological markers	Cross-sectional	Optimism was not associated with immune responses

Wyatt et al. (1999)	699	Cancer patients	LOT	Somatic complaints	Longitudinal, FU = 6 weeks	Optimism predicted less somatic complaints
Yi et al. (2008)	111	Diabetes patients	LOT	Glycosylated hemoglobin	Longitudinal, FU = 1 year	Low optimism predicted worsening HbA1c

*COPE* General Coping Strategies Scale, *CV* cardiovascular, *EASQ* Expanded Attribution Style Questionnaire, *FEV1* Forced Expiratory Volume in 1 s, *FVC* Forced Vital Capacity, *FU* follow-up, *HbA1c* glycosylated hemoglobin, *HIV* Human Immunodeficiency Virus-infection, *LOT* Life Orientation Test, *LOT-R* Life Orientation Test – Revised, *MMPI-2* Minnesota multiphasic personality inventory-2, *MS* Multiple Sclerosis, *PD* Parkinson’s disease, *SF-36* short form 36 health survey questionnaire, *SSWO* Dutch Scale of Subjective Well-being for Older Persons

(Allison et al. 2003; Butow et al. 1999; Schulz et al. 1996), others did not (Schofield et al. 2004). However, as reported in a review on the relationship between coping styles and cancer survival, studies displaying positive findings were mostly small, with short follow-up periods, and lacked adjustment for important confounders (Petticrew et al. 2002). In more recent and larger prospective studies, no evidence was found for lower survival rates in cancer patients with lower optimism levels prior to treatment (Schofield et al. 2004). In a study among community-dwelling older men, optimism did not predict a lower risk of noncardiovascular mortality, especially cancer mortality (Giltay et al. 2006c). Taken together, there is little and inconsistent evidence that a higher level of dispositional optimism helps to increase survival rates in cancer patients.

*Chronic diseases.* The benefits of optimism have also been studied in relation to chronic diseases. In a longitudinal study among patients with diabetes mellitus, low optimism was identified as a risk factor for worsening levels of glycosylated hemoglobin after 1 year of follow-up (Yi et al. 2008). Furthermore, optimism was reported to predict less somatic complaints in patients with diabetes mellitus (Motivala et al. 1999). Other research showed that optimism was related to slower disease progression in patients with human immunodeficiency virus (HIV) (Ironson et al. 2005; Ironson and Hayward 2008; Milam et al. 2004), patients with arthritis (Ferreira and Sherman 2007; Fournier et al. 2002b), patients undergoing hemodialysis (Morales Garcia et al. 2011), and patients with obstructive pulmonary diseases (Kubzansky et al. 2002). Dispositional optimism was also related to better adjustment to certain diseases, such as Parkinson's disease or multiple sclerosis (Ridder et al. 2000). Nevertheless, these studies provided only correlational evidence and cannot imply causation since residual confounding and reverse causation may play an important role in these relationships. In other words, it is possible that chronic diseases with an aggressive progression may result in poorer levels of optimism than chronic diseases with milder progression.

## 4 Mental Well-Being

Dispositional optimism has been related to a greater stress resilience and lower risk for mental health problems, such as depressive or anxiety symptoms (Scheier et al. 1994). Several studies have reported more depressive symptoms in young or middle-aged adults with lower optimism (Bromberger and Matthews 1996; Cohen et al. 2001; Fontaine and Jones 1997; Shnek et al. 2001). A prospective cohort study with 10 years of follow-up among college students showed that high optimism was predictive of less depressive symptoms at the end of the follow-up, even after adjustment for baseline depressive symptoms, negative affect, positive affect, and daily hassles (Vickers and Vogeltanz 2000). Furthermore, there is also some evidence to suggest that optimism buffers the relationship between hopelessness and suicidal ideation in depressed young adults (Hirsch and Conner 2006).

In middle-aged adults, optimism was found to be predictive of less depressive symptoms (Andersson 1996), reduced duration of the depressive episode, and the time till the patient resumed work (Kronstrom et al. 2011). The few studies among older persons have also shown an inverse association between optimism and depression (Isaacowitz and Seligman 2002). In a prospective cohort study among elderly men, a lower cumulative incidence of depressive symptoms was found among those men with higher optimism scores (Giltay et al. 2006b).

Accordingly, in another study among community-dwelling older women, low optimism was found to be associated with subthreshold depression (Vahia et al. 2010). A recent prospective study among middle-aged depressed participants showed that persons with higher optimism scores displayed a better and faster recovery without the need of a lengthy treatment as less optimistic persons (Karlsson et al. 2011). Thus, even after development of a depressive episode, dispositional optimism seems to have a beneficial effect on the recovery process. The association of optimism with depression and anxiety has also been found among cancer patients (Horney et al. 2011; Zenger et al. 2010). All in all, dispositional optimism seems to have a beneficial effect on the recovery process even after the development of a depressive episode.

## 5 Potential Mechanistic Correlates of Optimism

From the reviewed literature, it is clear that dispositional optimism is positively associated with a wide range of positive health outcomes, regarding both mental and physical health. Nonetheless, most studies only provide evidence of a correlation and cannot unequivocally answer the question of causation. Despite this uncertainty, a number of potential psychosocial and biological mechanisms have been proposed to explain the associations between dispositional optimism and favorable health outcomes. This section presents a summary of the literature on these potential underlying mechanisms.

### 5.1 Coping Style

The protective effect of optimism on health is thought to be partially explained by optimists' engagement in more adaptive coping strategies in the face of uncontrollable stressors such as a health disorder (Taylor 2007). Coping refers to the cognitive and behavioral adaptation to manage demands that exceed the resources of a person (Lazarus and Folkman 1984). Since coping involves the interaction between the person and his/her environment, it is reasonable to expect variation among people in their predispositions to cope in particular ways (Nes and Segerstrom 2006).

Coping is commonly thought to be a mechanism through which dispositional optimism translates into better adjustment to stressors (Aspinwall and Taylor 1992; Park et al. 1997; Scheier and Carver 1985). Optimism is positively associated with

approach-oriented coping (e.g., positive reappraisal and acceptance) and inversely associated with avoidance coping (e.g., denial and behavioral disengagement). Approach-oriented coping refers to the engagement of cognitive and behavioral efforts to reduce, eliminate, and actively manage the demands evoked by a stressor (Suls and Fletcher 1985). This mediation is explained in the behavioral self-regulation model proposed by Carver and Scheier (2000). In this model, when a desired goal is blocked (e.g., due to a threat or challenge), optimists put forth more effort on overcoming the obstacle because of their conviction that positive outcomes are attainable. Presumably, approach-oriented coping is more likely to be used in situations that are perceived as amenable to positive change. Furthermore, as shown in a meta-analysis on the association between optimism and coping, optimists show active attempts to change and accommodate to stressors, reflecting flexible engagement in adaptive coping regarding controllability of stressors (Nes and Segerstrom 2006). In this meta-analysis, larger effect sizes were found for approach coping in relation to academic and health stressors, whereas emotion-approach coping was more strongly associated with traumas. In other words, even when the stressor is uncontrollable or unchangeable (e.g., traumatic events), optimists use a coping strategy that seeks to reduce or manage the emotional consequences of the stressor.

Thus, in summary, optimists tend to view a stressful situation in a more positive light, develop a problem-focused strategy to face the stressor, and are more flexible regarding the demands of the stressor (Scheier et al. 1994).

## 5.2 *Social Integration*

Optimism also seems to play an important role in the social domain, as evident from an increasing amount of research in this field. Although little is known about the potential protective effect of optimism on loneliness, several cross-sectional studies have shown that optimism is linked to less loneliness in college students (Montgomery et al. 2003; Neto and Barros 2003) and in low-vision older women (Barron et al. 1992). This association has also been investigated in several longitudinal studies (Brissette et al. 2002; Jackson et al. 2000; Nurmi et al. 1996; Rius-Ottenheim et al. 2011; Srivastava et al. 2006). One longitudinal study examined the effect of dispositional optimism and quality of close relationships on loneliness in a college student sample during a 6-week follow-up period and showed that lower levels of optimism and social support were associated with more feelings of loneliness (Jackson et al. 2000). In another longitudinal study among college students, higher optimism was prospectively associated with greater increases in perceived social support over 6 months of follow-up (Brissette et al. 2002). Accordingly, results from a longitudinal study among college students study indicated that less optimistic students were more likely to use a social-avoidance coping strategy and felt more loneliness than their more optimistic peers (Nurmi et al. 1996).

Optimism is also beneficial for social integration in older populations. A study among older married couples showed that optimism was predictive of a better relationship status after 1 year of follow-up (Srivastava et al. 2006). Another prospective study among community-dwelling older men showed that higher optimism scores were predictive of lower loneliness scores after 10 years of follow-up (Rius-Ottenheim et al. 2011). It is possible that, after a negative event, optimists use coping strategies that foster more positive appraisals of the existing social network or lead to active pursuit of new social relationships (Scheier et al. 1986). In this way, dispositional optimism leads to better social embedding and protects against feelings of loneliness.

### 5.3 Health Behaviors

Another pathway through which optimism may influence health is through engagement in health-promoting and avoidance of health-damaging behaviors (Giltay et al. 2007). This hypothesis has been confirmed by linking dispositional optimism to nonsmoking, increased physical activity, moderate alcohol use, and consumption of more fruits, vegetables, and whole grains (Giltay et al. 2007b; Kelloniemi et al. 2005; Steptoe et al. 2006). Engagement in more healthy behaviors is, in its turn, critical for prevention of chronic conditions such as cardiovascular diseases or metabolic syndrome (Blokstra et al. 2010; Yamashiro et al. 2010).

Physical activity has frequently been proposed as a lifestyle factor that likely mediates the association between positive psychological factors and better health outcomes. Optimism in cross-sectional studies is associated with physical activity (Giltay et al. 2007b; Kavussanu and McAuley 1995). However, more studies with a prospective design are needed to elucidate the direction of causality of this association.

Optimism has also been found to be inversely associated with smoking dependence and alcohol use. Two cross-sectional studies among twin females (Kendler et al. 1999) and school students (Carvajal et al. 2000) as well as a prospective study among college students (Baker 2007) have shown that persons with higher optimism scores are less likely to develop nicotine dependence. Regarding alcohol use, cross-sectional evidence has associated higher optimism with moderate alcohol use (Steptoe et al. 2006), while lower optimism has been associated with heavy alcohol consumption (Kelloniemi et al. 2005). Accordingly, a prospective study among community-dwelling older men showed that higher optimism was predictive of moderate alcohol consumption (Giltay et al. 2007b). Thus, there seems to be a nonlinear U-shaped association between alcohol use and optimism.

Optimists are more likely to have healthier dietary habits, as they tend to consume more foods rich in fiber and low in fat or saturated fats. A Finnish cross-sectional study showed that higher optimism scores were positively associated with higher consumption of fresh vegetables or salads, berries, fruit, low-fat cheese, and salad dressing (Kelloniemi et al. 2005). Another cross-sectional study among Dutch older adults showed that optimists were more likely to consume

more fruit, vegetables, whole-grain bread, and fish fatty acids (eicosapentaenoic acid [EPA] and docosahexaenoic acid [DHA]—however with marginal significance) (Giltay et al. 2007b). These cross-sectional findings regarding fish fatty acids were only partially confirmed in a later longitudinal study among older community-dwelling men and women, as the consumption of fish fatty acids was associated with optimism measured with the 4Q, but not with the LOT-R (van de Rest et al. 2010).

Researchers have argued that health-related behaviors can be seen as coping strategies used in contexts in which the source of stress is health-related (i.e., due to an illness or physical disability). Specifically, as being in good health is a desired goal, optimists tend to engage in positive health practices to achieve their goal. In this way, health-promoting behaviors are presumably related to optimists' capacity to anticipate benefits of behavioral change on health (Aspinwall and Brunhart 1996). This hypothesis has been confirmed in both patients and population-based studies. In a study among patients following a cardiac rehabilitation program, it was observed that patients with higher optimism scores were more successful in lowering the levels of saturated fat, body fat, and global coronary risk by adopting a healthier diet and raising the level of physical exercise across the rehabilitation period (Shepperd et al. 1996). Also in another study among chronically ill patients, it was found that higher optimism predicted greater engagement in self-care behaviors (de Ridder et al. 2004). Finally, in a group of undergraduate students, it was shown that dispositional optimism was positively correlated with engagement in health-promoting behaviors (Robbins et al. 1991).

#### ***5.4 Systemic Stress, Oxidative Stress, and Inflammation***

The association between dispositional optimism and better physical health is probably not exclusively mediated by lifestyle factors but also by biological factors.

Chronic stress is associated with impaired immunity and increased inflammatory markers (Kemeny and Schedlowski 2007). Several studies have aimed to elucidate the moderating effect of optimism on the relationship between stress and immunity. A study among college students under stress found that students with higher optimism scores had an increased lymphocyte turnover and an improved natural killer cell activity when compared with students with lower optimism scores (Segerstrom 2001). More recently, the same authors showed that changes in optimism were correlated to changes in cell-mediated immunity, although this association was partly mediated by positive affect (Segerstrom and Sephton 2010). Similarly, a prospective cohort study found an association between higher optimism and T lymphocytes (CD8+, CD11b+), but only in the case of acute stressors and not with prolonged stressors (Cohen et al. 1999). In older persons, optimism has also been associated with a better immune response to influenza vaccine (Kohut et al. 2002).



It has been hypothesized that changes in immune responses may result from the effects of psychological stress on the activation of the hypothalamic-pituitary-adrenal (HPA) axis. Psychological stress enhances release of glucocorticoids which are, in turn, responsible for changes in cellular and humoral responses (Glaser and Kiecolt-Glaser 2005). The resultant release of glucocorticoids may also affect the systemic inflammatory status. In a study among middle-aged healthy adults ( $N = 6,814$ ), higher dispositional optimism scores were inversely associated with circulating levels of C-reactive protein (CRP), a nonspecific systemic inflammatory acute-phase protein (Roy et al. 2010). In another study using a Mendelian randomisation design, haplotypes of the CRP (a well-known inflammatory marker) were found to be associated with dispositional optimism but only in the overweight/obese group ( $BMI > 25 \text{ kg/m}^2$ ) (Rius-Ottenheim 2011a). This finding suggests that the association between dispositional optimism and inflammation levels may be moderated through long-standing changes in health behaviors and lifestyle.

On the cellular level, telomere length has become increasingly popular in the study of the effects of chronic stress on the immune system (e.g., leukocytes). Telomeres are repetitive DNA sequences that cap chromosomal ends and play a critical role in promoting chromosomal stability (Blackburn 2001). When the telomeres reach a critical minimal length, the cell will go into senescence, leading ultimately to apoptosis. Since telomere length reflects the number of cell divisions, it has been proposed as a marker of biological aging. Telomeres shorten more rapidly under certain conditions, such as exposure to prolonged stressors (e.g., oxidative stress) (Richter and Von Zglinicki 2007). Therefore, it has been hypothesized that chronic psychological stress may be translated in accelerated telomere attrition. Several cross-sectional studies among middle-aged adults have documented telomere shortening in relation to dispositional pessimism (O'Donovan et al. 2009). However, in a prospective study investigating the association between leukocyte telomere length and dispositional optimism, no association was found between changes in telomere length and changes in dispositional optimism (Rius-Ottenheim 2011b).

## 6 Interventions to Increase Optimism

To date, very little experimental work has been conducted to examine the efficiency of interventions to increase optimism and, if done, was mainly focused on explanatory optimism (Gillham and Reivich 2004; Ruthig et al. 2004). Only recently, have more studies focused on interventions to (temporarily) increase dispositional optimism by means of experimental manipulation. Findings from these recent experimental studies indicate that an individual's future expectancies are malleable and may result in increased levels of dispositional optimism (Fosnaugh et al. 2009; Peters et al. 2010). The first study was conducted among 160 college students who took part in two different experiments to increase optimism: one based on positive

mental imagery and the other based on optimism priming. In both experiments, after a follow-up of a couple of weeks, students who had participated in the interventions displayed higher optimistic responses than the students in the control condition (Fosnaugh et al. 2009).

Similar results were reported in a second intervention study in which 82 college students were asked to imagine their best possible self using mental imagery and found that the intervention of mental imagery increased dispositional optimism levels, independently of mood changes during the intervention (Peters et al. 2010). Extending these findings, a recent experimental study among 54 college students showed that positive imagery increased optimism independently of mood and that the achieved changes in optimism were sustainable over a limited time period of 2 weeks (Meevissen et al. 2011). Although these studies provide preliminary evidence on the potential of a facet of cognitive behavioral therapy (CBT) (i.e., mental imagery) to increase dispositional optimism, some issues may hamper the interpretation of their results, such as the short follow-up periods. Furthermore, all these studies were conducted among young healthy participants, and given the correlates of dispositional optimism with health, it would be interesting to investigate the effects of CBT in a sample of older participants, patients with a somatic disease, and in patients with current or lifetime psychopathology.

Besides CBT, other nonpsychotherapeutic interventions can affect one's level of optimism. The prospective studies reviewed in the earlier sections suggest several promising avenues. First, optimism was inversely associated with depression and probably also with other forms of psychopathology (Bromberger and Matthews 1996; Cohen et al. 2001; Fontaine and Jones 1997). Persons with very low levels of optimism should therefore be screened for major depression and (in serious cases) be referred for treatment.

Second, consistent associations were found between optimism, better perceived social support, and low levels of loneliness (Brissette et al. 2002; Nurmi et al. 1996). This suggests that psychosocial interventions aimed at improving interpersonal relationships may be beneficial, such as social (e.g., family) support groups and social skills training (Kühner 2000). Experimental studies should explore whether improving emotional support and social activities also improve optimism.

Third, healthier diets, more physical activity, and nonobesity were associated with higher levels of optimism. It can be hypothesized that a healthier lifestyle is beneficial to one's level of optimism—but this should be explored in future studies. For example, a large double-blind, randomized trial investigated whether long-term treatment with low doses of *n*-3 fatty acids increases the level of optimism in over 4,000 patients who had had a myocardial infarction (Kromhout et al. 2010).

Fourth, there is a strong association between prevalent coronary heart disease (CHD) and low optimism. This suggests that the classic risk factors for CHD, such as obesity, cigarette smoking, hypertension, hypercholesterolemia, and diabetes mellitus, may also be associated with optimism. Also weight loss, achieved through diet and lifestyle modification, is associated with a reduction of depressive symptoms (de Wit et al. 2010). Although CHD risk factors have not been directly associated with optimism (Giltay et al. 2008), they may indirectly decrease optimism

through the increased risk of onset of symptomatic cardiovascular disease. Future trials should explore whether treatment of high blood pressure, lipidemia, heart disease, and diabetes may also increase levels of optimism. Such interventions (combined with smoking cessation) may also reduce chronic low-grade inflammation, which is also associated with low optimism (Rius-Ottenheim 2011a).

Fifth, more adaptive coping strategies have been associated with higher levels of optimism (Aspinwall and Taylor 1992; Park et al. 1997; Scheier and Carver 1985). Intervention studies show that it is possible to learn more positive coping skills in order to reduce perceived stress and depressive symptoms (Kim et al. 2011). Another study in which general practitioners taught their patients more adaptive coping strategies showed improvements in affect, better management of illness, and a better quality of life (Mjaaland and Finset 2009). Other interventions that have proven effective in the management of perceived stress include relaxation techniques, mindfulness, and guided mental imagery (Palmer and Rodger 2009; Shapiro et al. 1998). However, although mindfulness is seen as an instrument for self-regulation, there is no evidence that mindfulness may improve optimism. Presumably, the most effective way to increase one's optimism is to combine some of the above-mentioned techniques. A combined therapy called cognitive behavioral stress management (CBSM) has been used successfully in anxiety reduction. CBSM combines relaxation, guided mental imagery, deep breathing, and meditation, with cognitive behavioral techniques such as cognitive restructuring, coping skills training, and interpersonal skills learning (Antoni 2003). In a 10-week intervention study using CBSM in women with breast cancer, it was shown that this combined intervention not only reduced anxiety or depressive symptoms but also increased levels of optimism. Importantly, these effects remained 12 months later (Antoni et al. 2006).

To summarize, future intervention studies are necessary and should use a longer follow-up period and investigate whether the increases of dispositional optimism are durable. Furthermore, other interventions besides CBT should be explored, particularly in older patients.

## 7 Concluding Remarks and Recommendations

From the literature reviewed here, it can be concluded that optimism is a disposition with personality trait-like characteristics that is strongly correlated to physical and mental well-being. Highly optimistic persons rate their health more positively and are at lower risk for cardiovascular disease than less optimistic persons. However, it remains unclear whether these health advantages translate into lower morbidity and mortality rates. Optimists enjoy better mental health, as observed from the lower incidence of depression and anxiety symptoms. Even if they actually develop depressive symptoms, optimists display a faster and better recovery than less optimistic depressed patients. This evidence emphasizes the importance of assessing the levels of dispositional optimism in healthy individuals as well as in patients.

Patients with low optimism should receive more attention from health practitioners, since low levels of optimism are a risk marker for negative somatic and psychological health outcomes.

Despite the increasing evidence for a beneficial effect of dispositional optimism on health, it remains to be elucidated which mechanisms actually mediate these associations, as most evidence is derived from correlational studies. The strongest correlate of dispositional optimism may be the more effective coping. By using more adaptive, problem-oriented coping strategies, optimists adapt their behavior and are more successful in the management of adverse life events. These advantages are also translated to the social domain, as shown by several studies reporting that optimists feel less lonely and perceive more social support. The benefits of optimism on health are also related to the engagement in a healthier lifestyle. Optimists are usually more physically active, follow a healthier diet, and smoke less often than less optimistic people. An increasing amount of cross-sectional studies corroborate these relationships, which may in turn explain the lower cardiovascular risk observed in high optimistic persons. Nevertheless, the exact pathways remain to be elucidated. In fact, the nature of the associations between optimism and health is likely bidirectional. It is true that optimistic people tend to be more socially integrated and to engage and maintain healthy behaviors, but their lifestyle probably also reinforces their optimism. In other words, it is possible that perceived social support and engagement in healthy practices, such as a change to a healthier diet, more physical activity, or weight loss, may result in increases in levels of optimism. Future longitudinal research should therefore investigate both directions of the associations between optimism, social support, and lifestyle factors.

It remains controversial whether it is possible to increase one's optimism and thereby decrease the health risks of less optimistic people. Although there is some evidence of success in the short-term manipulation of one's future expectancies, it remains unknown whether it is possible to lastingly change dispositional optimism. One could argue that in order to achieve a more enduring effect, an intervention should be aimed at experiencing actual positive outcomes instead of only imagining a positive future scenario. Alternatively, it is possible that dispositional optimism cannot be learned and that only small changes are possible in an otherwise relatively stable personality trait. Nevertheless, more research is necessary to prove or refute the hypothesis that having an optimistic disposition prevents physical diseases or improves the recovery from illness.

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# Chapter 10

## The Relation of Optimism to Cardiac Patients' Subjective Health Through Illness Representations: Does the Level of Optimism Matter?

Evangelos C. Karademas, Elvisa-Foteini Frokkai, Evangelia Tsotra, and Rania Papazachariou

### 1 Introduction

A crucial human strength, which has repeatedly been related to efficient functioning and health, is dispositional optimism. Dispositional optimism represents a significant determinant of adaptation to stressful conditions, such as chronic illness, as it is involved in the self-regulation efforts aiming at dealing with the stressful condition (Scheier and Carver 1985). In this context, the aim of our study was to examine whether optimism is related to chronic patients' subjective health through their representation of illness, which constitutes a central part of the illness-related self-regulation process. A second aim was to investigate whether this relation is conditional on the values of optimism.

#### 1.1 Optimism

According to Scheier and Carver (1985, 1992), dispositional optimism represents a generalized tendency to expect positive outcomes even in the face of obstacles. Optimism differentiates two classes of behavior: continued striving versus giving up. When confronting an adversity, like an illness, those who preserve their optimism are expected to persist in the effort to achieve their goals (e.g., feel better) as they have more confidence in their ability to manage difficulties. Consequently, they are more likely to adapt effectively, experience more positive feelings, and have higher levels of well-being (Carver and Scheier 2001; Rasmussen et al. 2006).

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A growing number of studies have shown that optimism is negatively related to anxiety and depressive symptomatology in the general population (e.g., Vickers and Vogeltanz 2000), whereas it is positively related to subjective well-being and positive affective state (e.g., Carver et al. 2005; Eid and Diener 2004). Furthermore, dispositional optimism has extensively been related to better health outcomes (e.g., recovery from illness, mortality, physical and psychological symptoms) in several medical conditions, such as cardiovascular diseases, cancer, HIV/AIDS, arthritis, and diabetes (Barry et al. 2007; Carver et al. 1993; Contrada et al. 2008; Ferreira and Sherman 2007; Fournier et al. 2002; Helgeson 1999; Oxland and Wade 2008; Rasmussen et al. 2006; Shen et al. 2004; Shnek et al. 2001; Symister and Friend 2003). There is also some evidence that dispositional optimism has a protective role for all-cause mortality in old age (Giltay et al. 2004). Optimism has been linked to health both directly and indirectly through affectivity and self-esteem, the promotion of more beneficial health habits, and the use of effective coping strategies (such as problem-focused coping) and effective ways of emotional regulation (Chang and Sanna 2001; Scheier and Carver 1987; Symister and Friend 2003; Taylor and Armor 1996).

## ***1.2 Optimism and Illness Representations***

There is also evidence that optimism is involved in the illness-related self-regulation process. For example, Fournier et al. (2002) and Karademas et al. (2011) found that optimism is related to a more “positive” representation of illness (i.e., as less threatening and more controllable). Illness representation is an essential part of the illness-related self-regulation process, which aims at helping patients understand their condition and cope with it (Leventhal et al. 1980, 1992). According to the Common Sense Model (CSM) of illness representation, the main clusters of illness representation are the following: identity (the disease label and associated symptoms), cause (causal attributions of the disease), the consequences of the disease, timeline (perceptions about the course of the disease), cure/control (what can be done to cure or manage the disease), as well as the emotional reactions to the disease, including anxiety, depression, and anger (Leventhal et al. 1980, 1992). In general, representations of control have been related to health outcomes in a positive way, whereas consequences, timeline, and emotional reactions have been related to health outcomes in a negative way (for a review, Hagger and Orbell 2003). The CSM suggests that the representation of illness serves as the pathway through which broader personal and contextual factors are related to health outcomes (Leventhal et al. 1980). In this regard, it is possible that illness representations also mediate the relation of dispositional optimism to chronic patients’ well-being.

However, the relations between illness representations, health, and the broader social or personal factors, such as optimism, are rather complicated and may exceed simple mediations (Leventhal et al. 1980; Diefenbach and Leventhal 1996). Thus, it is possible that the indirect relation of optimism to well-being through illness

representations varies at different levels of optimism. For instance, the negative relation of the “negative” illness representations (e.g., chronicity or consequences) to health outcomes may be reduced at higher levels of optimism, given the protective impact of the latter on health and adaptation to illness. If this is indeed the case, then the “optimism–negative illness representations–health” relation may be weakened at the higher levels of optimism because of the moderating role of optimism in the relation between representations and health outcomes (i.e., the path from negative illness representations to health may be “inactive” at higher levels of optimism). Likewise, the relations of the more “positive” illness representations, such as representations of control, to health may also be interrupted at higher levels of optimism. This might be the result of a “ceiling effect”: a “positive” representation of a specific situation (i.e., illness) may not have the potential to add to the already strong impact of the general positive expectations (i.e., optimism) on health.

The purpose of our study was to examine this complex relationship in a sample of chronic cardiac patients. Our hypothesis was that optimism is related to higher levels of “positive” illness representations (i.e., representations of control) as well as to lower levels of “negative” representations (i.e., representations of illness chronicity, consequences, and emotional representations). In turn, “positive” representations were expected to be related to better subjective health, whereas “negative” representations to worse health. However, provided that optimism moderates the relation of illness representations to subjective health, we also hypothesized that the indirect relations of optimism to subjective health via representations are conditional on the levels of optimism. More specifically, we hypothesized that these indirect relations are statistically nonsignificant at higher levels of optimism.

## 2 Method

### 2.1 *Participants and Procedure*

Consecutive patients suffering from a variety of cardiac diseases were recruited at the outpatient cardiology departments of three public hospitals in Greece. The study included patients who were 18 years or older. Exclusion criteria were inability to speak or read Greek, understand the study protocol, and provide informed consent. Two hundred thirty-three patients (176 males) agreed to participate in the study. After obtaining informed consent from the patient, a research assistant was administering the study questionnaires to each participant. Participants' mean age was 61.73 years (SD = 12.75, Min = 37). The majority (73.39%) was married; 21.01% were divorced or widowed; 5.60% were single. With respect to the education level, 42.06% had finished the 9-year mandatory education; 39.49% had finished high school; 18.45% were holders of a higher education degree. One hundred and thirty-three participants had suffered a myocardial infarction in the past (of them, 54 had undergone a coronary angioplasty or a coronary artery bypass graft surgery); 48 had a coronary artery disease with severe angina pectoris,

whereas 17 had a mild angina pectoris; 6 were dealing with a congestive heart failure, 7 were suffering from a valvular disease, and 22 from arrhythmias. The majority (78.97%) had been hospitalized at least once in the past. The mean time elapsed since initial diagnosis was 8.30 years ( $SD = 5.02$ ). The study was approved by the Ethics Committee of each hospital.

## 2.2 Measures

*Illness representations.* Illness representations were assessed with the Revised Illness Perception Questionnaire (IPQ-R; Moss-Morris et al. 2002). Participants were asked to respond in relation to their personal “cardiac problem.” We assessed seven dimensions of the illness representation included in the IPQ-R: timeline acute/chronic (chronicity) that includes beliefs that illness will last a long time (six items; e.g., My cardiac problem will last for a long time); consequences, which refers to the possible consequences of the health condition (six items; e.g., My cardiac problem has major consequences on my life); personal control that refers to evaluations about the degree to which there is personal control over the illness (six items; e.g., The course of my cardiac problem depends on me); treatment control, which refers to evaluations about the efficacy of the illness treatment (five items; e.g., The treatment can control my cardiac problem); illness coherence that reflects the patient’s ability to make sense of the illness (five items; e.g., I have a clear picture or understanding of my cardiac problem); timeline cyclical that consists of beliefs regarding illness predictability and variability (four items; e.g., My cardiac problem is very unpredictable); and emotional representations, which assess the degree of the emotional impact of the disease (six items; e.g., My cardiac problem makes me feel afraid). The IPQ-R dimension of “identity” was not included in this study to avoid any possible confounding with subjective health measures. Also, the IPQ-R dimension of “causes” was not assessed since no previous research has been conducted in Greek cardiac patients with regard to their representations of causes, which could provide a quantitative assessment of them. To answer the questionnaire, respondents used a five point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Reliabilities (Cronbach’s  $\alpha$ ) ranged from .72 to .90.

*Subjective health measures.* The physical functioning and the emotional well-being scales from the RAND 36-item Health Survey (version 1.0) were used to assess subjective health. The items of the RAND Health Survey are identical to the Medical Outcomes Study SF-36 (Ware and Sherbourne 1992; Stewart and Ware 1992). However, the RAND Survey employs a more straightforward scoring procedure. The final scores range from 0 to 100, with higher scores indicating better health (for more details, [http://www.rand.org/health/surveys\\_tools/mos/mos\\_core\\_36item.html](http://www.rand.org/health/surveys_tools/mos/mos_core_36item.html)). The physical functioning scale consists of ten items regarding current limitations imposed by the health status (e.g., climbing several flights of stairs; Cronbach’s  $\alpha = .93$ ). The emotional well-being scale consists of five items regarding personal feelings during the past 4 weeks (e.g., “felt downhearted and blue”; Cronbach’s  $\alpha = .87$ ).

*Optimism.* Dispositional optimism was assessed with the Life Orientation Test – Revised (Scheier et al. 1994). It consists of ten items, six of which measure optimism and the remaining four are fillers (Cronbach's  $\alpha = .82$ ).

### 2.3 Statistical Analysis

The mediating role of illness representations in the relationship between optimism and subjective health was examined with the method for assessing indirect effects developed by Preacher and Hayes (2008). This method provides the bootstrapped confidence intervals for each indirect effect and also allows controlling for covariates (i.e., it estimates specific indirect effects). Estimates are calculated using OLS regressions (for more information, Preacher and Hayes 2008). In this study, we controlled for gender, age, years since initial diagnosis, and the type of cardiac problem (i.e., myocardial infarction, myocardial infarction plus surgery, artery disease with angina; remaining conditions were collapsed in a single category due to the very few cases representing these cardiac problems) coded as a series of dummy variables.

Also, in order to determine whether the strength of these effects depends on (is moderated by) the level of optimism, we used the approach and SPSS syntax developed by Preacher et al. (2007). This approach is based on a multiple regression analyses and bootstrapping framework developed to probe conditional indirect (i.e., moderated mediation) effects. In this study, we performed the analyses corresponding to Model 1 of this approach, after controlling for the variables described in the previous paragraph. According to this model, the independent variable is assumed to affect (moderate) the path from the mediator to the dependent variable. Furthermore, this approach determines whether indirect effects vary at different levels of the moderator (by default, indirect effects are reported at  $M$  and  $\pm 1SD$  of the moderator). Both normal theory tests and bias corrected and accelerated bootstrapping are employed to test these effects since the latter produces more accurate confidence intervals (for more details, we refer to Preacher et al. 2007).

## 3 Results

Table 10.1 presents the correlations of illness representations with optimism and subjective health. Higher optimism was related to better physical functioning and emotional well-being, higher levels of personal and treatment control, and illness coherence, as well as to lower levels of timeline, timeline cyclical, consequences, and emotional representations ( $ps < .005$ ). Also, subjective health measures were positively associated with representations of personal and treatment control, and illness coherence, but negatively associated with timeline cyclical, consequences, and emotional representations ( $ps < .001$ ).



**Table 10.1** Descriptive statistics and correlations of illness representations to dispositional optimism and subjective health measures ( $N = 233$ )

	Optimism	Physical functioning	Emotional well-being	Mean (SD)
Optimism				20.79 (5.18)
Physical functioning	.31**			60.99 (27.07)
Emotional well-being	.41**	.43**		60.52 (21.26)
Timeline	-.23**	-.12	-.06	23.11 (4.44)
Timeline cyclical	-.19*	-.35**	-.21*	11.49 (3.25)
Consequences	-.29**	-.36**	-.36**	18.44 (5.15)
Personal control	.36**	.43**	.30**	20.68 (4.88)
Treatment control	.41**	.38**	.30**	18.27 (3.57)
Illness coherence	.19*	.29**	.29**	17.80 (4.49)
Emot. representations	-.29**	-.32**	-.48**	20.12 (5.61)

*SD* standard deviation

\*\* $p < .001$ ; \* $p < .005$

**Table 10.2** The indirect effects of optimism on subjective health measures through illness representations

	Point estimate	SE	Z	Bootstrapping	
				95% confidence intervals <sup>a</sup>	
				Lower	Upper
Dependent variable: physical functioning					
Timeline	.1708	.1103	1.5484	-.1002	.2519
Timeline cyclical	.4089	.1597	2.5611	.0133	.3422
Consequences	.3975	.1733	2.2938	.1920	.6986
Personal control	.8779	.2293	3.8289	.2492	.7887
Treatment control	.9832	.2396	4.1029	.1239	.6907
Illness coherence	.2534	.1275	1.9869	.0535	.3920
Emotional representations	.3893	.1573	2.4750	.1297	.5577
Dependent variable: emotional well-being					
Timeline	.1245	.0803	1.5508	-.2558	.0989
Timeline cyclical	.1151	.0886	1.2990	.0012	.2040
Consequences	.2643	.1178	2.2434	.1483	.5848
Personal control	.3191	.1424	2.2403	.0371	.4887
Treatment control	.3098	.1425	2.1745	.0297	.4653
Illness coherence	.1570	.0853	1.8411	.0360	.3363
Emotional representations	.4631	.1467	3.1579	.2469	.7549

*SE* standard error

<sup>a</sup>Bootstrapping bias corrected and accelerated (5,000 bootstrap samples) after controlling for covariates. Indirect effects are significant at  $p < .05$  for the 95% bootstrap confidence intervals when the derived intervals do not include values of zero

The indirect effects of optimism on physical functioning through illness representations are presented in Table 10.2. Timeline cyclical, consequences, personal control, treatment control, illness coherence, and emotional representations mediated the relation of dispositional optimism to physical functioning. With

**Table 10.3** Mean indirect effects (*SE* in parentheses) of optimism on subjective health through illness representations at specific values of optimism and confidence intervals<sup>a</sup> (bias corrected and accelerated)

Mediator	- 1 SD [CI (95%)]	Levels of optimism	
		Mean [CI (95%)]	+ 1 SD [CI (95%)]
Dependent variable: Physical functioning			
Consequences	.868 (.231)*** [.48 to 1.52]	.491 (.134)*** [.25 to .78]	.101 (.113) [-.10 to .35]
Treatment control	.837 (.185)*** [.50 to 1.14]	.511 (.107)*** [.20 to .85]	.246 (.232) [-.21 to .71]
Illness coherence	.918 (.234)*** [.48 to 1.37]	.524 (.126)*** [.18 to .75]	.069 (.137) [-.18 to .36]
Emotional representations	.576 (.184)** [.27 to 1.01]	.343 (.114)** [.16 to .61]	.108 (.099) [-.05 to .35]
Dependent variable: Emotional well-being			
Consequences	.707 (.190)*** [.39 to 1.14]	.395 (.110)*** [.21 to .64]	.085 (.110) [-.13 to .31]
Treatment control	.472 (.142)*** [.22 to .78]	.161 (.109) [-.04 to .39]	-.134 (.167) [-.48 to .19]
Illness coherence	.247 (.107)* [.07 to .49]	.133 (.071) [.02 to .31]	.021 (.077) [-.11 to .21]

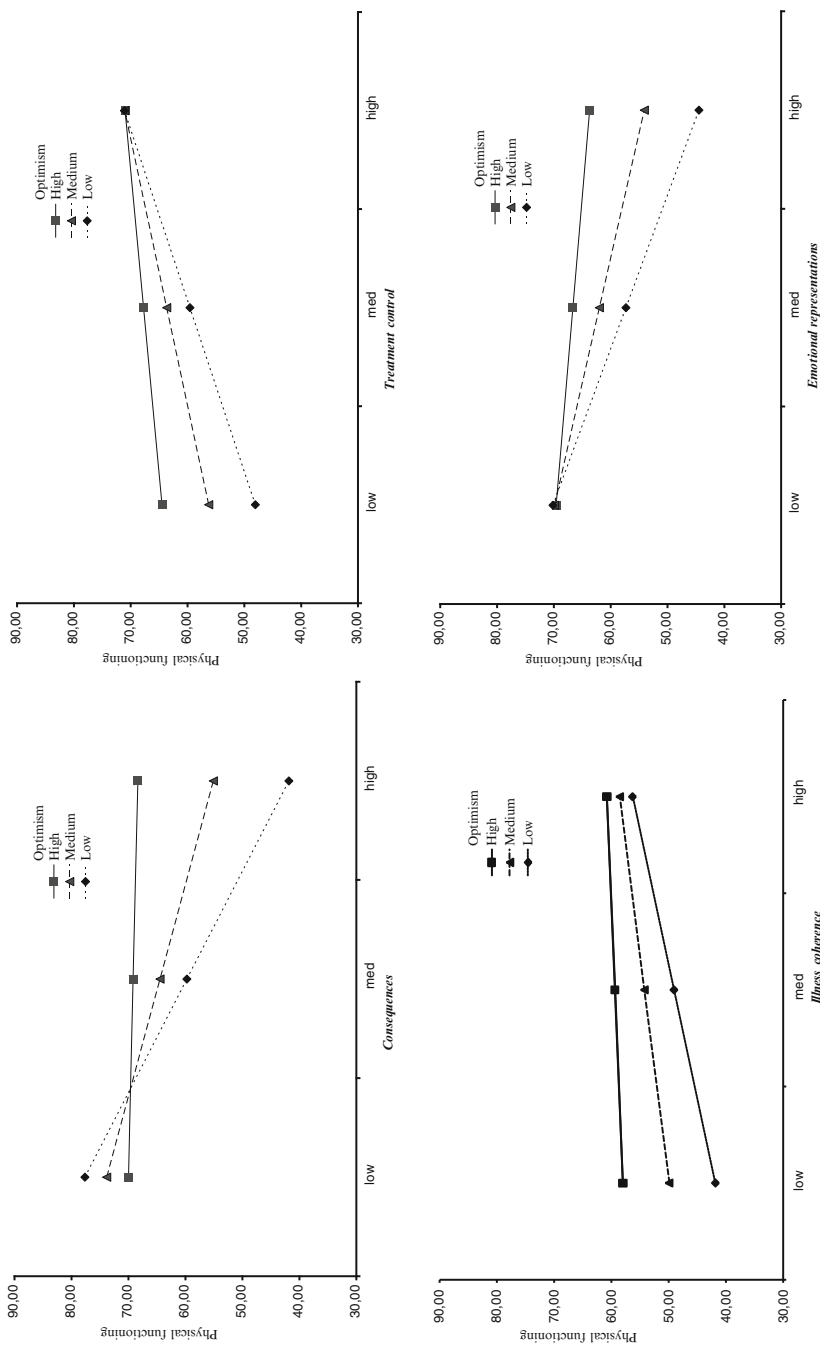
*SD* standard deviation; *CI* confidence intervals

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001

<sup>a</sup>Indirect effects are significant at *p* < .05 for the 95% bootstrap confidence intervals when the derived intervals do not include values of zero

respect to the indirect relation of optimism to emotional well-being, the same set of illness representations was found to act as mediators. In all cases, mediations were partial ( $B_{\text{optimism}} = .91-1.56, ps < .01$  after controlling for the mediator, that is, illness representations).

Conditional indirect effects (i.e., whether optimism also moderates the relation between representations and subjective health) were examined only in those relations that a significant indirect effect was identified. Regarding the indirect effects of optimism on physical functioning, those mediated by consequences ( $B = .254, SE = .050, p < .001$ ), treatment control ( $B = -.197, SE = .069, p < .005$ ), illness coherence ( $B = -.137, SE = .064, p < .05$ ), and emotional representations ( $B = .149, SE = .049, p < .005$ ) were conditional on the values of optimism. For these significant interactions, indirect effects at different levels of optimism were estimated. By default, the program produced the indirect effects at three values of optimism: the mean (20.79), one standard deviation above the mean (25.97), as well as one standard deviation below the mean (15.61). Table 10.3 presents the normal theory tests for each conditional indirect effect as well as the bootstrap confidence intervals. In all cases, the relations of illness representations to physical functioning were statistically nonsignificant at higher levels of optimism (+1SD; see also Fig. 10.1) resulting, thus, in also statistically insignificant indirect effects of optimism on physical functioning.



**Fig. 10.1** Graphical representation of the simple moderation effects of dispositional optimism on the relation of illness representations to physical functioning

Regarding the indirect effects of optimism on psychological well-being, those mediated by consequences ( $B = .205$ ,  $SE = .044$ ,  $p < .001$ ), treatment control ( $B = -.213$ ,  $SE = .059$ ,  $p < .001$ ), and illness coherence ( $B = -.148$ ,  $SE = .054$ ,  $p < .01$ ) were conditional on the values of optimism. As previously, the indirect effects were not statistically significant at the higher levels of optimism (+1SD; see Table 10.3 and Fig. 10.2).

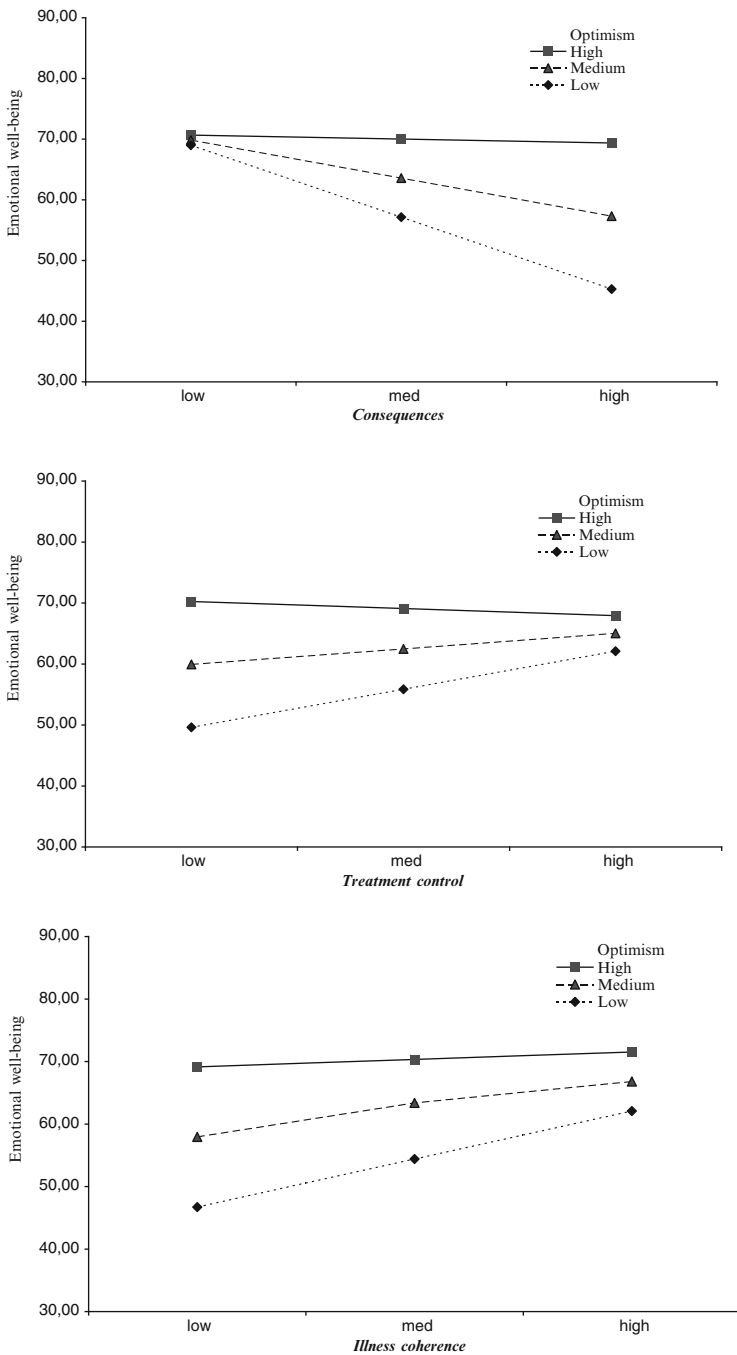
At average and lower levels of optimism, better physical and psychological health was in almost all cases significantly associated with higher levels of treatment control and illness coherence as well as with lower levels of consequences and emotional representations ( $ps < .05$ ).

## 4 Discussion

The aim of this study was to examine whether illness representations mediate the relation of dispositional optimism to subjective health in a sample of chronic cardiac patients. A further aim was to examine whether this indirect relationship depends on the level of optimism. According to the results, optimism was positively related to both physical and psychological subjective health, as well as to a more “positive” representation of illness (i.e., a perception of illness as a more controllable or coherent condition). On the contrary, optimism was negatively related to a less “positive” representation of illness (i.e., a perception of a burdensome and distressing condition). These results are consistent with the suggestions made by the Common Sense Model of illness representations (Leventhal et al. 1980) and similar to the findings reported in several other studies (e.g., Contrada et al. 2008; Karademas et al. 2011; Symister and Friend 2003).

In addition, the results of this study revealed that almost all illness representations mediated the relation of optimism to physical functioning and emotional well-being. As hypothesized, higher optimism was related to a more “positive” representation of illness, which in turn was related to better subjective health. Previous research has shown the ability of optimism to impact health through several pathways (e.g., through coping strategies and health-related behaviors; Scheier and Carver 1987, 2001). According to our findings, illness representations seem to act as a further link between dispositional optimism and chronic patients' subjective health verifying, thus, the suggestion made by Leventhal et al. (1980) that adaptation to illness does not occur in a vacuum, but is linked to the broader way each patient perceives his or her self and life.

However, a closer look at the data revealed that this link is complicated. The results indicated that half of the indirect relations of optimism to subjective health measures depended on the levels of optimism: at higher levels of optimism, the “optimism–illness representations–subjective health” relation was statistically nonsignificant. Further analyses showed that at higher optimism, subjective health levels were relatively high regardless of the illness representation values. On the other hand, at average and lower levels of optimism, subjective health was



**Fig. 10.2** Graphical representation of the simple moderation effects of dispositional optimism on the relation of illness representations to emotional well-being

analogous to the type of illness representation: better at the higher levels of “positive” representations (e.g., representations of control) and worse at the higher levels of “negative” representations (e.g., consequences).

These findings suggest that the pathway from optimism to illness representations and subjective health does not work in a simple way, but it is conditional on the values of the same factors that take part in the process. A strong general expectancy of good outcomes in life seems to be able to “sweep along” a positive evaluation of personal health as well as weaken the associations between illness representations and evaluations of health. A possible explanation, as far as the “negative” representations (e.g., consequences, emotional representations) are concerned, might be that optimists tend in general to pay more attention to “positive” information, expect good outcomes even under difficult conditions, as well as believe that they can easily overcome negative experiences (Carver and Scheier 1998, 2001). As a result, optimistic patients possibly tend to rely more on their general (positive) expectations than on specific (negative) information or perceptions about their illness. On the other hand, regarding treatment control and illness coherence, a possible explanation might be that a positive representation of illness is already “expressed” through high optimism and, therefore, cannot really add to the beneficial relation of the latter to subjective health. Yet, it is interesting that at average or weaker levels of optimism, illness representations (which reflect personal knowledge and experience with illness) seem to assert their ability to mediate the relation of broader personality to health.

It is also interesting that the “optimism–illness representations–subjective health” interaction seems in most cases (i.e., either at higher levels of optimism or when a more “positive” representation of illness is reported) to “result” in a more positive evaluation of personal health. A broadly similar relationship was also found in a previous study of ours (Karademas 2012). This indicates that self-regulation may act in such a way as to “promote” a positive perception of self and, thus, facilitate adaptation to negative, distressing conditions. Furthermore, in the aforementioned study, we found that subjective health can prospectively predict the levels of optimism through illness representations. In other words, we found some evidence for a pathway reversed to the one examined in the present study. The results of the two studies together underline the interactive relationship between the experience of illness and contextual factors. As suggested by Leventhal et al. (2005), the representations of a disease and its treatment are not just affected by broader personal and social factors but also alter these contextual factors (that are not static) within a bidirectional constructive process. In this regard, the findings of the present study probably reflect only a part of this dynamic process.

The results of this study should of course be considered in relation to certain limitations. The study was cross-sectional, and, thus, no causal effects could be tested; it was based on self-reported data with all the limitations this implies; “identity” and “causes” representations were not included in the measures; the sample consisted only of chronic cardiac patients, yet the type of illness can affect patients' experience and self-regulation. However, despite these limitations, we believe that our findings are important for theory and practice. They suggest that,

within the context of chronic patients' self-regulation mechanism, broader personal factors, such as optimism, interact with specific illness-related factors, such as perceptions about illness and current health status, in complicated ways. They also underline the importance of dispositional optimism, as a substantial human strength, in promoting health and facilitating adaptation to illness. Finally, they indicate that specific interventions addressing maladaptive illness representations (see, e.g., Petrie et al. 2002) are more needed when patients report lower levels of generalized positive expectations.

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# Chapter 11

## Wise Thinking, Hopeful Thinking, and Positive Aging: Reciprocal Relations of Wisdom, Hope, Memory, and Affect in Young, Middle-Aged, and Older Adults

Despina Moraitou and Anastasia Efklides

### 1 Wisdom, Hope, and Positive Aging

In the positive psychology movement, both wisdom and hope are considered components of the broader construct of “character strengths” that have been defined as a family of positive traits manifested in an individual’s thoughts, emotions, and behaviors (Peterson and Seligman 2004). Specifically, there are 24 strengths of character which presumably aggregate on six overarching virtues, one of them being “wisdom and knowledge.” In this line of research, hope is thought to be closely related to specific, theoretically proposed (Peterson and Seligman 2004) wisdom-related strengths such as creativity, curiosity, open-mindedness, and love of learning.

In the same vein but emphasizing the developmental perspective, many geropsychologists value the investigation of individual characteristics and processes that have the potential to support positive growth during lifespan development and aging (Baltes and Staudinger 2000; Jopp and Smith 2006). Based on historico-philosophical views and recent psychological theories as well, *wisdom* can be considered the leading of such “human virtues and strengths” since at the core of this concept is the notion of a perfect integration of mind and virtue that presupposes many years of life among other things (Baltes and Smith 2008; Schwartz and Sharpe 2006).

With respect to *hope*, there is also convergence among philosophical views, theological perspectives, and recent psychological evidence in that hope is an extremely durable human characteristic (Coulehan 2011). Hope can be transformed in order to facilitate adaptation to difficult life situations (e.g., hope supporting agency to discover meaning, when one faces terminal illness) or progressing along one’s life trajectory (e.g., entering older adulthood, that brings with it a sense of reduced time perspective) (Coulehan 2011). In fact, there is evidence that hope thrives even in the face of imminent death (Ai et al. 2004; Coulehan 2011).

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Nevertheless, despite the inspiration that the positive psychology movement provides to psychologists in general – researchers and clinicians alike – well-founded critiques have also been put forth on both theoretical and methodological grounds (see Cummins 2013). Specifically, in the case of empirical studies that aim at examining the contribution of human strengths in health, sociopsychological functioning, and/or well-being, conventional scientific criteria have to be strictly followed. This is the only way that can reveal the pattern and magnitude of effects of positive character qualities or the potential of positive psychology techniques and interventions (Cummins 2013).

In this spirit, the study reported here investigated the pattern of relationships between cognitive facets of wisdom and hope, that is, between wise thinking and hopeful thinking. It also examined if wise thinking and hopeful thinking get enriched along with increasing age and other individual demographic factors. Furthermore, considering that efficient cognitive and affective functioning have been related to several positive outcomes in older age (see Fernandez-Ballesteros 2007), the study investigated if there are relations between wise and hopeful thinking and everyday memory and state affect, and how these relations change with advancing age.

As regards the methodology used, and in an effort to address limitations of previous relevant studies, we applied a relatively strict test of the direction of effects among the psychological variables of interest by using a specific structural equation modeling technique, namely, non-recursive path modeling (Kline 2005). The application of this technique to the data of a cross-sectional study is considered the most effective way to capture at least “a moment” of a dynamic pattern of relationships among human characteristics and behaviors (see Kline 2005).

## 2 Psychological Theories of Wisdom

Several definitions of wisdom have been developed in the field of psychology during the past two decades (Baltes and Staudinger 2000; Sternberg 1990). Most of them can be categorized into two broad groups: (a) wisdom being primarily a synthetic skill and (b) wisdom being primarily an analytical skill (Takahashi and Overton 2002).

### 2.1 *Wisdom as a Synthetic Skill: Wise Thinking as Integrated Dialectical Thinking and Awareness of Life Uncertainty*

According to Takahashi and Overton (2002), the synthetic mode of wisdom reflects the dialectical nature of psychological organization that moves toward states of increased integration. In this perspective, wise action is understood as an “expression” of the integrated functioning of multiple psychological processes in a given context (Takahashi and Overton 2002). This implies that wisdom is the

outcome of a dynamic interplay of cognitive, affective, and reflective personality characteristics (Bergsma and Ardelt 2012; Pascual-Leone 2000; Sternberg 1990; Taylor et al. 2011).

From a cognitive point of view, the conceptualization of wisdom as a synthetic skill is found in theories positing that wisdom is reflected in a higher level of cognitive organization (e.g., post-formal thinking; see Kramer 2000; Labouvie-Vief 2000; Sternberg 1990). Arlin (see Sternberg 1990) suggests that wisdom presupposes a kind of thinking that evolves from the mere resolution of problems to the identification of ill-defined problems involving uncertainty and answering questions that arise about them. Problem identification under conditions of uncertainty and wisdom shares processes such as discovery of deeper similarities and relations in situations appearing to be unrelated or even contradictory, noticing of subtle features and detection of asymmetry in what appears to be symmetrical and well explained from a conventional explanatory point of view, and willingness to remain open to new information and change of one's views.

In a similar vein, Labouvie-Vief (2000; Sternberg 1990) defines wisdom as the grounding of intellectual operations usually associated with “logos” (reason) in “mythos” (an organismic core of inter- and intrapersonal processes). According to Labouvie-Vief (2000), the integration of these two modes of thinking leads to the development of dialectical modes of thinking, greater awareness of complexity and tolerance of ambiguity inherent in life dilemmas, and a better combination of free emotional expression with conscious emotion regulation.

Adopting a similar cognitive–developmental perspective, Kramer (2000; Sternberg 1990) argues that wisdom is based on relativistic and dialectical reasoning, the development of which is linked to the development of affect regulation. Relativistic thinking involves awareness of the subjective and arbitrary nature of knowledge, and therefore, it is the mode of thinking that would foster an awareness of the unpredictable nature of life events (Kramer 2000). Dialectical thinking, on the other hand, involves an awareness of the integrability of knowledge through conflict resolution.

To sum up, wisdom from a cognitive–developmental perspective has been associated with integrated dialectical thinking that enables a person to adapt to life situations mainly through the acknowledgment of their unpredictable (uncertain) and interactive nature.

## ***2.2 Wisdom as an Analytic Skill: Wise Thinking as Practical Wisdom***

According to Takahashi and Overton (2002), the conceptualization of wisdom as analytic skill stresses the “instrumental” or “adaptive” value of wise behavior. Hence, wisdom is manifested in situations involving practical goals (e.g., solving everyday problems, evaluation, judgment). In other words, the core of wisdom consists of knowledge a person accumulates through experience and functioning in specific domains, and especially, in domains dealing with socio-moral dilemmas.

From this point of view, wisdom can be conceptualized as an expert system of knowledge about the meaning and conduct of life (Baltes and Staudinger 2000). Specifically, Baltes and Staudinger (2000) identify five components/criteria of wisdom: (a) rich factual knowledge about life, (b) rich procedural (strategic) knowledge on how to deal with life dilemmas, (c) rich knowledge about life contexts and their dynamics, (d) rich knowledge about relativism of values and life priorities, and (e) recognition and management of life uncertainty. However, according to Baltes and Staudinger (2000), wisdom-related knowledge has a lower level of quality when there is no overall life orientation toward human excellence and the common good.

In the same direction, Sternberg (1998) defines wisdom as the application of intelligence, creativity, and tacit knowledge, as mediated by values, toward the achievement of common good through a balance of multiple, intra-, inter-, and extra-personal interests.

Schwartz and Sharpe (2006), in an effort to find common ground in the Aristotelian and positive psychology's perspectives of wisdom, argue that practical wisdom is the "executive decision maker" that keeps the balance among all human strengths. Besides cognition, the main prerequisites for practical wisdom are right goals, right motives, and relevant experience.

Summing up, wisdom from an analytic point of view is mainly related to utilization of knowledge accumulated through life experiences in order to solve specific, difficult, and ambiguous life dilemmas. In the utilization of this kind of knowledge, cognitive, affective, and socio-moral processes, and especially, the capability to judge and decide in face of life uncertainty, are also involved.

Following the above theoretical overview, the cognitive facet of wisdom is conceptualized in the present study as higher-order thinking that takes the form of integrated dialectical thinking as well as accumulated expert knowledge about life (i.e., practical thinking) that is applied to everyday problem solving under conditions of uncertainty. Hence, awareness of life uncertainty is a critical aspect of wisdom as well. Indeed, in their model of the neurobiology of wisdom, Meeks and Jeste (2009), based on findings of neuroimaging studies contrasting risk-based decision making versus decision making in the face of uncertainty, propose that wisdom fits "cold" (i.e., analytical) executive functions that are involved in decision making in situations where the probability of specific outcomes is unknown or close to chance, and the choices do not differ in reward value. This "kind" of executive functions differs from the "hot" ones that are utilized in decision making in situations where outcomes have known probabilities and persons choose between "safe" and "risky" decisions.

### **3 Wise Thinking, Age, and Demographic Characteristics**

Wisdom in people's minds is associated with older age. Although the association of wisdom with old age remains a societal conception (Naschenweng and Koenig 2009), empirical evidence suggests lifespan stability of wisdom (Baltes and Smith

2008; see also Fernandez-Ballesteros 2007): In other words, few age effects have been observed in adulthood in the average level of wisdom, mainly, measured as expert knowledge about life and subsequent action. On the other hand, if wisdom is defined as integrated dialectical thinking, then the respective evidence is suggesting a decrease, at least of integrated dialectical thinking, in older as compared to middle-aged adults (see Sternberg 1990; Yang 2008). There is no evidence of age effects on awareness of uncertainty in life. One could assume, however, an increase in older age when people become aware of their physical and mental limitations.

With respect to gender, stereotypical conceptions of how women's wisdom might differ from men's (see Sternberg 1990) are also not supported empirically, even by studies examining wisdom in the form of empathy and social support, which theoretically has been associated with females (Ardelt 2009). However, one could argue that women are more anxious than men (Kessler et al. 1994), and this could reflect a greater awareness of life uncertainty by women (see Moraitou and Efklides 2011). Moreover, there is no evidence of gender effects on integrated dialectical thinking and/or practical wisdom. Therefore, one could assume that there are no gender differences in integrated dialectical thinking and practical wisdom, but there is gender effect on awareness of life uncertainty.

Inconclusive evidence also exists with respect to the association of wisdom with educational level. Although there has been evidence that the educational background affects the content of implicit theories of wisdom (Moraitou and Efklides 2005; see also Yang 2008), the findings of studies on wisdom as expert knowledge about life, including recognition and management of life uncertainty, have not supported a strong relationship between education and wisdom (see Yang 2008). Nevertheless, formal education has been found to be a decisive factor for the development of complex thought that is based on abstract thinking (see Sternberg 1990). Therefore, one could assume that there is an education effect on integrated dialectical thinking, but there are no education effects on practical wisdom and awareness of life uncertainty. Consequently, it is an open question if demographic characteristics are associated with wise thinking in the form of integrated dialectical thinking, practical wisdom, and awareness of life uncertainty.

## 4 Wise Thinking, Memory, and State Affect

Besides the possible effects of demographic factors on wisdom, it is important to know if personal resources, defined broadly as potential to adapt to everyday challenges (Jopp and Smith 2006), are associated with wisdom as practical thinking, integrated dialectical thinking, and awareness of life uncertainty. Personal resources can be cognitive, such as fluid intelligence and memory capacity, or affective, such as positive affect (Jopp and Smith 2006).

As regards the relationship between wisdom and cognitive ability, many studies have shown that, during adulthood, the relationship between wisdom and fluid intelligence is not very strong (Baltes and Smith 2008; Sternberg 1998). On the

other hand, it is well known that although working memory capacity is decreasing with age, declarative (semantic) and procedural memory do not decline with age (Cohen and Conway 2008). This implies that expert knowledge about life (i.e., the practical aspect of wisdom) will remain strong even if there is memory decline in older age. On the contrary, the limited resources of working memory may impair integrated dialectical thinking. This implies that integrated dialectical thinking will be manifested when there is good memory functioning. Awareness of life uncertainty, however, should not be associated with memory capacity because the experience of uncertainty is more affective in nature, and awareness of uncertainty is mainly associated with higher-order abilities related to decision making.

Wisdom either as expert system of knowledge (practical thinking) or as integrated dialectical thinking has been closely associated to affect (see Fernandez-Ballesteros 2007; Sternberg 1990). Integrated dialectical thinking includes positive affect and emotional regulation as inherent constituents of it (Kramer 2000; Labouvie-Vief 2000). Recently, there has been evidence suggesting that wisdom as expert system of knowledge about life (i.e., the practical aspect of it) helps people downregulate their first emotional response to life problems and is associated with process-oriented positive affect (e.g., interest, activation) (see Fernandez-Ballesteros 2007). On the contrary, awareness of life uncertainty – which is a critical condition for the evincing of wisdom – would be related to negative affect since stress and anxiety have been associated to the experience of uncertainty (Alaszewski and Coxon 2009). Therefore, both the practical and the integrated dialectical thinking aspects of the cognitive facet of wisdom will be positively related to positive affect and not related to negative affect, whereas awareness of life uncertainty will be positively related to negative affect.

## 5 Wise Thinking and Hopeful Thinking

The conceptualization of hope as wisdom-related strength of character is first and foremost compatible with the cognitive model of hope proposed by Snyder and his colleagues (1991). For Snyder (2000), hope represents a characteristic way of thinking. Hopeful thinking requires both identified goals and awareness of a method of achieving those goals. Specifically, according to Snyder's model (2000), hope consists of two operationally defined components, that is, "agency thinking" and "pathways thought." Agency thinking refers to a person's motivation to initiate and sustain movement toward goal achievement, and it is based on learning from past experiences to think about the future in terms of agency. From this point of view, agency thinking should be positively related to practical wisdom as accumulated knowledge about life derived from everyday experience. Moreover, it should be related to awareness of life uncertainty. A guiding assumption of Snyder's hope model (2000) is that human actions are goal directed and goals typically contain some degree of uncertainty. Thus, accumulated expert knowledge about life plus values and the ability to take into account and manage life uncertainty could sustain

and facilitate movement toward goal achievement in everyday life, mainly by decreasing goal-related uncertainty.

Pathways thought is defined as the perceived ability to produce alternative paths, that is, cognitive strategies toward valued goals, and to differentiate them in order to be viable in a specific situation. Such ability requires multisided thinking and consideration of alternatives, which reminds of the integrated dialectical thinking. Therefore, there is theoretical basis for associating hope with wisdom. However, this assumption has not been tested up to now.

## 6 Hopeful Thinking, Age, and Demographic Characteristics

In so far as pathways thought during lifespan development is concerned, it has been suggested that acquired knowledge and other relevant “gains” provide older adults with certain advantages in developing successful pathways and circumventing impediments to goal attainment, compared to younger adults. Moreover, decline of physical health and/or cognitive functioning and other related “losses” with advancing age lead older adults to replace their familiar but no longer successful pathways with new ones. Furthermore, as they set new goals or rearrange their old ones, they also need to discover new pathways (see Snyder 2000). In other words, in this theoretical context, older as compared to younger adults use a broader range of pathways to reach their goals; they persevere in their search for viable pathways and use different kinds of pathways strategies based on their differential appraisal of their abilities in combination with situational controllability and emotional salience (see Snyder 2000). However, empirical evidence (Ai et al. 2004) does not support either the claim that advancing age is positively associated with hope as pathways thought or the existence of a negative relationship between them. Therefore, it is an open question whether age has positive effects on hope as pathways thought or not. Advancing age can also be associated with changes – positive or negative – in agency thinking (see Snyder 2000). The person’s beliefs regarding their goals and abilities can influence their sense of agency. In case adults accumulate successes in goal pursuits with advancing age, they develop a sense of control over their environment. This sense of agency and control – that the pursued goal can be attained – functions as energizer of present and future goal pursuits. Beliefs regarding one’s current situation are also important motivators. It has been found (see Snyder 2000) that, despite their difficulties, older adults who believe that they have certain strengths are thereby motivated to continue pursuing their goals. On the contrary, older adults who believe that they are worse off than others often have low agency and give up easily in face of difficulties. Continued fixation on blocked goals, negative stereotypes regarding older age – as a time of suffering, inactivity, and increased dependency on others – as well as health decline associated with pain, disability, and fatigue can negatively impact agency thinking in older adults, resulting in a sense of helplessness and decreased personal motivation in general (see Bergin and Walsh 2005; Snyder 2000). In conclusion, it seems



that the theoretically proposed association between advancing age and hope as agency thinking is mediated by other factors such as perceived health, illness, emotions, and past successes. Indeed, there is some evidence (Ai et al. 2004) that age indirectly influences agency thinking via the decrease of emotional distress. Therefore, one could argue that there is no direct age effect on hope as agency thinking.

With respect to gender, there is no empirical evidence suggesting that it is associated with pathways thought and agency thinking. Only a low correlation between them, favoring males, was found in a study using an older adults' sample (Moraitou et al. 2006). Therefore, one could assume that there are no gender differences in hopeful thinking either as pathways thought or as agency thinking.

Inconclusive evidence also exists with respect to the association of the two aspects of hope with educational level. Although there has been evidence that the educational background affects hope, mainly as agency thinking (Ai et al. 2004; Creamer et al. 2009), the evidence regards solely specific populations (e.g., cardiac patients). Therefore, it is an open question if educational level is associated with the two aspects of hope in the general population.

Summing up, it seems that there is no strong theoretical and empirical basis for the association of hopeful thinking with demographic characteristics.

## 7 Hopeful Thinking, Memory, and State Affect

Despite its explicit conceptualization as a fundamentally cognitive process (Snyder 2000), the association of hopeful thinking with cognitive abilities seems not so clear, based on extant psychological literature. In a broader sense, there is a growing body of evidence supporting the notion that hopeful thinking drives adaptive behavior through the utilization of cognitive processes. Specifically, hope has been positively associated with problem solving, academic performance, graduation rates, and level of goal progress in case of college students (see Feldman and Dreher 2012); it is also associated with action control and use of cognitive and metacognitive learning strategies in university students (Papantoniou et al. 2013), as well as with job performance (see Feldman and Dreher 2012). Nevertheless, to our knowledge, the degree and the way to which hopeful thinking relates to everyday memory have not yet been adequately investigated. Therefore, it remains an open question if memory is associated with the cognitive facet of hope in its two aspects.

On the other hand, the relationship between hopeful thinking and affect is very clear. At a theoretical level, besides the conceptualizations of hope as an emotion (see Coulehan 2011), even Snyder (2000) acknowledges that positive affect influences hopeful thinking by enriching it with a sense of affective zest about the pursuit of goals, while negative affect influences hopeful thinking by blocking motivation. Furthermore, there is empirical evidence indicating that a higher level of hopeful thinking is associated with a decreased level of anxiety, hopelessness,

and depression, and an increased level of mental health, life satisfaction, and well-being (Bergin and Walsh 2005; Moraitou et al. 2006). Therefore, there is strong theoretical and empirical basis for hypothesizing a positive relationship of hopeful thinking, in its two aspects, with state positive affect and a negative relationship with state negative affect. Moreover, it is reasonable to assume that the relations between hope and affect are reciprocal.

## 8 The Present Study

### 8.1 Hypotheses

The study aimed at examining the relationships of wise and hopeful thinking (a) between them and (b) with memory and state affect, as well as (c) the changes in these relationships from young to late adulthood, as a result of age and individual demographic factors.

As regards *the relations between hopeful and wise thinking*, the hypotheses were formulated as follows: Pathways thought, defined as the perceived ability to produce alternative strategies toward a valued goal after consideration of the requirements of the specific situation, presumably involves utilization of integrated dialectical thinking. Hence, there should be a direct positive effect of wisdom as integrated dialectical thinking on hope as pathways thought. With regard to the other two dimensions of wise thinking, no association of hope as pathways thought with practical wisdom and awareness of life uncertainty was expected (Hypothesis 1).

*Agency thinking*, defined as a form of motivation toward goal attainment, is likely to presuppose both practical wisdom and awareness of life uncertainty as expert knowledge about life that can enhance agency through a decrease of goal-related uncertainty. Therefore, a direct positive effect of practical wisdom and of wisdom as awareness of life uncertainty on hope as agency thinking was expected. On the other hand, no relation of hope as agency thinking with wisdom as integrated dialectical thinking was anticipated (Hypothesis 2).

As regards *the relations of hopeful and wise thinking with memory and state affect*, the following hypotheses were formulated: Integrated dialectical thinking presupposes strong working memory capacity that can support its abstract and integrative nature that brings together opposing or contradictory data. Therefore, strong memory is required for integrated dialectical thinking. Hence, there would be a direct positive effect of memory capacity on integrated dialectical thinking. No association of practical wisdom and wisdom as awareness of life uncertainty with memory was expected (Hypothesis 3). No hypothesis was formulated about the relation of hopeful thinking (both of its aspects) with memory due to lack of theoretical grounds.

In the case of *state affect* (positive and negative) and hopeful thinking, the hypothesis was that there would be strong relations between them. This hypothesis was based, on the one hand, on the nature of hope which is inherently affective. On the other hand, hope enhancement has been associated with decrease of negative affect such as anxiety or depression and increase of well-being (Bergin and Walsh 2005; Moraitou et al. 2006). Therefore, there would be a direct positive effect of state positive affect on hope as pathways thought and agency thinking, and vice versa. Moreover, reciprocal negative effects were expected between state negative affect and each one of the two aspects of hopeful thinking (Hypothesis 4).

As regards state affect and wise thinking, based on the literature that connects both dialectical and practical thinking with positive affect, reciprocal positive effects were expected between state positive affect and wisdom as integrated dialectical thinking and practical wisdom (Hypothesis 5a). No relations of these dimensions of the cognitive facet of wisdom were expected with state negative affect. Awareness of life uncertainty, however, was expected to have a direct positive effect on state negative affect (Hypothesis 5b).

The hypotheses referring to the effects of age and individual demographic characteristics on wise thinking were formulated as follows: *Age* would have a direct positive effect on practical wisdom as accumulated knowledge about life as well as on awareness of life uncertainty due to increased experiences of “losses” that are associated with advancing age. On the contrary, age would have a direct negative effect on wisdom as integrated dialectical thinking due to the negative effect of advancing age on cognitive resources such as working memory (Hypothesis 6a). *Gender* would not be associated with practical wisdom and integrated dialectical thinking, but it would directly affect wisdom as awareness of life uncertainty (Hypothesis 6b). *Educational level* would positively affect wisdom as integrated dialectical thinking because education facilitates the development of it (Hypothesis 6c). On the other hand, education was not expected to affect practical wisdom and wisdom as awareness of life uncertainty. Finally, no hypothesis was formulated about the effects of age and demographic characteristics on the two aspects of hopeful thinking.

## 8.2 Method

### 8.2.1 Participants and Procedure

The sample comprised a total of 446 adults (217 males, 229 females) from Greece. Their age ranged from 20 to 80 years. Participation was voluntary. Participants were recruited by third- and fourth-year psychology students, who participated in a research project on cognitive geropsychology. Young and middle-aged participants came from Thessaloniki and other areas of Greece. No exclusion criteria were used. As regards the older adults in particular, they were volunteers recruited mainly through senior adults' centers. In this case, the exclusion criteria were mental or

physical illness or inability to follow instructions. No other exclusion criteria were used. The participants were examined on an individual basis at a place of their own choosing. The questionnaires and the memory test used in the study were presented in random order.

There were three age groups: young adults ( $N = 162$ , age range: 20–39 years,  $M = 26.8$ ,  $SD = 6.1$ ), middle-aged adults ( $N = 158$ , age range: 40–64 years,  $M = 49.9$ ,  $SD = 6.7$ ), and older adults ( $N = 126$ , age range: 65–80 years,  $M = 72.3$ ,  $SD = 4.8$ ). The participants' educational level varied. Hence, three groups in terms of educational level were defined: low educational level (range: 0–6 years of education,  $N = 101$ ; 22.6%), middle educational level (range: 7–12 years of education,  $N = 168$ ; 37.7%), and high educational level (years of education  $\geq 13$ ,  $N = 177$ ; 39.7%). It should be noted, however, that there was a confounding of age with educational level. Specifically, of the 162 young adult participants, only 4.3% ( $N = 7$ ) had low educational level, while 32.7% ( $N = 53$ ) had middle and 63% ( $N = 102$ ) had high educational level. Of the 158 middle-aged participants, 15.2% ( $N = 24$ ) had completed 0–6 years of education, 50% ( $N = 79$ ) had completed 7–12 years, and 34.8% ( $N = 55$ ), 13 years of education and over. On the contrary, of the 126 older participants, 55.6% ( $N = 70$ ) had low educational level, 28.6% ( $N = 36$ ) had middle, and only 15.9% ( $N = 20$ ) had high educational level. In other words, there was a tendency of advancing age to be associated with lower educational level.

### 8.2.2 Instruments

*The Wise Thinking and Acting Questionnaire* (WITHAQ; Moraitou and Efklides 2011). The WITHAQ is a 13-item self-report instrument developed to measure *practical wisdom* (4 items; example item is as follows: “Owing to my various experiences in life, I feel competent enough to handle different situations or – when asked – to advise people who face similar situations”), *integrated dialectical thinking* (6 items; example item is as follows: “When I hear different or opposing views on a matter or a person, I usually search for common ground that underlies these views”), and *awareness of life uncertainty* (3 items; example item is as follows: “The saying ‘it changes in an hour what happens not in 7 years’ is almost always true for me when I plan my future”<sup>1</sup>). Moraitou and Efklides (2011) confirmed the three-factor structure of the WITHAQ with interrelations between the factors.

Participants had to indicate how much their thinking fits with what is depicted by each item when they are faced with a situation such as the one described in the item. Responses were on a 4-point scale from 1 (not at all) to 4 (a great deal). The internal consistency of the first two factors was acceptable: Cronbach's  $\alpha = .75$  and  $.70$  for practical wisdom and integrated dialectical thinking, respectively. The internal

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<sup>1</sup> This is a Greek saying that emphasizes the sudden and unpredicted nature of everyday life events.

consistency of the last factor, namely, awareness of life uncertainty, was low: Cronbach's  $\alpha = .60$ . Given this factor's theoretical importance and that it was loaded only by three items, the internal consistency was considered adequate, and the factor was retained in further analyses (for more details, see Moraitou and Efklides 2011).

*Hope.* Snyder et al.'s (1991) Adult Dispositional Hope Scale (ADHS) was used. It is a 12-item self-report scale. Four of the items refer to *pathways thought* (example item is as follows: "I can think of many ways to get out of a jam"). Four items refer to *agency thinking* (example item is as follows: "I energetically pursue my goals"). Finally, 4 items are distracters (e.g., "I feel tired most of the time"). The ADHS was translated into Greek by Moraitou et al. (2006). The construct validity was tested by Papantoniou et al. (2013) who confirmed its two-factor structure.

It should be mentioned that the ADHS was administered with the more neutral title "Goals Questionnaire" in order to avoid possible interference, during the administration, of participants' ideas regarding hope. Participants had to answer whether each of the 12 items was true for them on a 5-point Likert-type scale (from 1 = not true at all to 5 = very true). The 5-point scale was used because in a previous study, the older adults participating in the study had serious difficulty in answering on the 8-point scale proposed by Snyder et al. (1991; see Moraitou et al. 2006). Internal consistency for the two factors of ADHS was acceptable, namely, Cronbach's  $\alpha = .75$  for pathways thought and .69 for agency thinking.

*Affect.* The Positive Affect and Negative Affect Schedule (PANAS; Watson et al. 1988) was chosen to examine the affective state of the participants. The PANAS is a self-report questionnaire that consists of two 10-item scales, one for positive affect and one for negative affect. For the purposes of this study, we used the PANAS as it was translated into Greek by Moraitou and Efklides (2009) who confirmed the two-factor structure of the instrument proposed by Watson and his colleagues (Watson et al. 1988).

Participants answered to what extent they had felt what was described by each item during the past 2 weeks. Responses were on a Likert-type scale from 1 (very few times or not at all) to 5 (too many times). The internal consistency for the two PANAS factors was satisfactory – Cronbach's  $\alpha = .86$  for state positive affect and .84 for state negative affect.

*Memory Capacity.* To examine memory capacity, the Rivermead Behavioral Memory Test (RBMT; Wilson et al. 1991) was administered as adapted to Greek by Efklides et al. (2002). The RBMT is designed to detect everyday memory functioning. There are 11 subtests of the RBMT, assessing paired associate learning (remembering a person's first and last name); prospective memory (e.g., remembering to collect a hidden belonging, delivering a message, and arranging an appointment); object recognition; remembering a story (one score for immediate and one for delayed recall of a short prose passage); face recognition; spatial memory (e.g., remembering a new route: (a) immediately (b) after a delay of a few minutes); orientation in time and place; and remembering the date. Initially, the pass/fail or screening score was used. The screening score for the total test ranges

from 0 to 12. The higher the score, the better the memory ability. At a second stage, all the scores representing normal functioning (from “10” to “12”) were transformed into a grade of “2,” and all the scores indicating mnemonic problems (from “3” to “9”) were transformed into a grade of “1.” No participant had scores representing serious problems in memory (from “0” to “2”).

### 8.2.3 Statistical Analyses

Analyses were conducted in three stages. At the first stage, statistical analyses were aimed at estimating the possible reciprocal effects of the three dimensions of wisdom, the two aspects of hope, memory performance, state positive affect, and state negative affect. According to Kline (2005; p. 237), “many ‘real world’ causal processes are based on cycles of mutual influence, that is, feedback. To capture a ‘snapshot’ of such an ongoing dynamic process in an empirical study with a cross-sectional design, the ‘feedback loop’ could be examined as mutual causation among variables measured at the same time. In fact, for many researchers, the estimation of reciprocal relations between variables measured at the same time is the only realistic alternative to a longitudinal design.”

Technically speaking, the presence of a feedback loop in a structural model where all variables are observed (i.e., a path model) automatically makes it non-recursive (Kline 2005). This means that besides the two basic requirements (“the number of free parameters must not exceed the number of observations” and “every latent variable must have a scale”) for the identification of any type of structural equation model, the necessary “order condition” (“the number of variables that do not have direct effects on each endogenous variable must equal or exceed the total number of endogenous variables minus 1”) and the sufficient “rank condition” (“each variable in a feedback loop must have a unique pattern of direct effects on it from variables outside the loop—statistical anchors”) must also be satisfied in order for the non-recursive path model to be identified (Kline 2005).

In the present study, we tested a series of simple non-recursive path models containing a direct feedback loop between two endogenous variables plus error covariances (for details, see Kline 2005) and exogenous variables that function as statistical anchors. Every one of the simple non-recursive path models that were confirmed was subsequently tested for the satisfaction of the order and rank conditions. In order for each model to meet the rank condition, a series of exogenous variables (mainly individual demographic factors) were used as “statistical anchors” (see Kline 2005) on the basis of their differential correlations with the variables that in each one of the non-recursive path models were the endogenous ones.

At a second stage, after the confirmation and identification of a series of simple non-recursive path models and in order to create an integrated “picture” of the relationships between the three dimensions of wisdom, the two aspects of dispositional hope, memory capacity and state positive and negative affect, we tested a path model including all these variables but containing only unidirectional

effects of one variable onto another. The pattern of the unidirectional effects was formulated according to the findings of the simple non-recursive path models: Every unidirectional effect of one variable on another in the recursive path model was based on the higher standardized direct effect from the direct feedback loop between the same variables in the respective non-recursive path model.

To test the effects of age and other individual demographic factors on wisdom, hope, memory, and state affect, after the confirmation of a recursive path model and based on the extant theories and previous findings about wisdom and dispositional hope, we proceeded to add to this model age and individual demographic factors as exogenous variables. After the inspection of modification indices, a final recursive path model was confirmed including all the psychological variables of interest plus age, gender, and educational level.

The SEM analyses were conducted with EQS Version 6.1 and performed on covariance matrices using the robust maximum likelihood estimation procedure (Bentler 2005). Model fit was evaluated based on the Satorra-Bentler chi-square statistic as well as on the root mean squared error of approximation (RMSEA). The RMSEA index shows how well the model would fit the population covariance matrix. A rule of thumb is that  $RMSEA \leq .050$  indicates close approximate fit; values between .050 and .080 suggest reasonable error of approximation, and RMSEA values in the range of .090–.100 are considered mediocre (Kline 2005). The Comparative Fit Index (CFI), which is one of the indexes assessing the relative improvement in fit of the researcher's model compared to a baseline model, was also used; CFI values greater than .900 indicate reasonably good fit of the researcher's model (Kline 2005).

## 8.3 Results

### 8.3.1 Reciprocal Effects Between Hope and Wisdom

*Hope as Pathways Thought and Wisdom as Integrated Dialectical Thinking.* With regard to reciprocal relationships between the three dimensions of wisdom and the two aspects of hope, a non-recursive path model containing a direct feedback loop between the “integrated dialectical thinking” dimension of the WITHAQ and the “pathways thought” aspect of the ADHS was firstly confirmed, Satorra-Bentler scaled  $\chi^2(1, N = 444) = 5.022, p = .025$ ; CFI = .981; RMSEA = .095 (90% CI: .027 to .184) (see Table 11.1, Model 1-M1).

As shown in Table 11.1, the magnitude of the standardized direct effect of pathways thought on integrated dialectical thinking was nearly six times the magnitude of the direct effect in the opposite direction. The latter was also not statistically significant at the .05 level. On the basis of this finding, it was concluded that pathways thought predicted integrated dialectical thinking and not the other way around.

**Table 11.1** Robust maximum likelihood parameter estimates for non-recursive path models displaying reciprocal relationships between hope, wisdom, memory, and affect

Parameters in the feedback loop for each one of 10 models (M1-M10)	Direct effect (Std.)	Error (Std.)	Bentler-Raykov corrected $R^2$	Errors' correl.	Order condition ( $n$ of exogenous variables $\geq 1$ )	Rank condition (rank of structural equation $\geq 1$ )
M1. Hope/pathways thought (HPT) => wisdom/integrated dialectical thinking (WIDT)	.41	.90	.19	-.13	For HPT: 1	For HPT: 2
Wisdom/integrated dialectical thinking (WIDT) => hope/pathways thought (HPT)	.07	.81	.34		For WIDT: 1	For WIDT: 2
M2. Hope/pathways thought (HPT) => practical wisdom (WPW)	.55	.99	.11	-.30	For HPT: 1	For HPT: 1
Practical wisdom (WPW) => hope/pathways thought (HPT)	-.15	.80	.36		For WPW: 2	For WPW: 2
M3. Hope/agency thinking (HAT) => wisdom/integrated dialectical thinking (WIDT)	.61	.99	.13	-.51	For HAT: 2	For HAT: 2
Wisdom/integrated dialectical thinking (WIDT) => Hope/agency thinking (HAT)	.05	.83	.31		For WIDT: 1	For WIDT: 1
M4. Hope/agency thinking (HAT) => practical wisdom (WPW)	.33	.88	.22	-.23	For HAT: 1	For HAT: 1
Practical wisdom (WPW) => hope/agency thinking (HAT)	.22	.79	.38		For WPW: 1	For WPW: 1
M5. Wisdom/integrated dialectical thinking (WIDT) => memory (M)	.36	.94	.14	-.32	For WIDT: 1	For WIDT: 1
Memory (M) => wisdom/integrated dialectical thinking (WIDT)	.12	.92	.16		For M: 1	For M: 1
M6. Practical wisdom (WPW) => memory (M)	.004	.98	.03	-.47	For WPW: 1	For WPW: 1
Memory (M) => practical wisdom (WPW)	.27	.98	.10		For M: 2	For M: 2
M7. Hope/pathways thought (HPT) => state positive affect (PA)	.16	.84	.30	-.46	For HPT: 2	For HPT: 2
State positive affect (PA) => hope/pathways thought (HPT)	.43	.83	.33		For PA: 1	For PA: 1

(continued)



**Table 11.1** (continued)

Parameters in the feedback loop for each one of 10 models (M1–M10)	Direct effect (Std.)	Error (Std.)	Bentler-Raykov corrected $R^2$	Errors' correl.	Order condition ( $n$ of exogenous variables $\geq 1$ )	Rank condition (rank of structural equation $\geq 1$ )
M8. Hope/agency thinking (HAT) => state positive affect (PA)	.23	.86	.27	-.41	For HAT: 1	For HAT: 1
State positive affect (PA) => hope/agency thinking (HAT)	.52	.73	.47		For PA: 2	For PA: 2
M9. Practical wisdom (WPW) => state positive affect (PA)	-.22	.97	.09	-.11	For WPW: 1	For WPW: 1
State positive affect (PA) => practical wisdom (WPW)	.48	.87	.27		For PA: 1	For PA: 1
M10. Hope/agency thinking (HAT) => state negative affect (NA)	-.10	.97	.06	.44	For HAT: 2	For HAT: 2
State negative affect (NA) => hope/agency thinking (HAT)	-.46	.88	.28		For NA: 1	For NA: 1

*Hope as Pathways Thought and Wisdom as Practical Wisdom.* A second non-recursive path model that was confirmed, Satorra-Bentler scaled  $\chi^2(1, N = 443) = 3.781, p = .051$ ; CFI = .991; RMSEA = .079 (90% CI: .00 to .17) (see Table 11.1, M2), contained a direct feedback loop between the “practical wisdom” dimension of the WITHAQ and the “pathways thought” aspect of the ADHS. As shown in Table 11.1, the magnitude of the standardized direct effect of pathways thought on practical wisdom was almost four times the magnitude of the direct effect in the opposite direction, in absolute value. The latter was also statistically nonsignificant at the .05 level. Based on these findings, it was concluded that pathways thought positively predicted practical wisdom and not vice versa.

*Hope as Agency Thinking and Wisdom as Integrated Dialectical Thinking.* The next non-recursive path model that was confirmed, Satorra-Bentler scaled  $\chi^2(3, N = 444) = 12.363, p = .006$ ; CFI = .965; RMSEA = .084 (90% CI: .039 to .135) (see Table 11.1, M3), contained a direct feedback loop between the “integrated dialectical thinking” dimension of the WITHAQ and the “agency thinking” aspect of the ADHS. As shown in Table 11.1, the magnitude of the standardized direct effect of agency thinking on integrated dialectical thinking was nearly 13 times the magnitude of the direct effect in the opposite direction. The latter was also statistically nonsignificant at the .05 level. On the basis of these findings, it was concluded that agency thinking positively predicted integrated dialectical thinking and not the opposite.

*Hope as Agency Thinking and Wisdom as Practical Wisdom:* A non-recursive path model containing a direct feedback loop between the “practical wisdom” dimension of the WITHAQ and the “agency thinking” aspect of the ADHS was subsequently confirmed, Satorra-Bentler scaled  $\chi^2(1, N = 444) = 2.538, p = .111$ ; CFI = .993; RMSEA = .059 (90% CI: .00 to .15) (see Table 11.1, M4). As Table 11.1 displays, the magnitude of the standardized direct effect of agency thinking on practical wisdom was less than two times the magnitude of the direct effect in the opposite direction. However, the latter was statistically nonsignificant at the .05 level. In other words, based on the findings, agency thinking predicted practical wisdom, but a tendency of practical wisdom to positively affect agency thinking was also delineated.

As regards reciprocal relationships between each of the two aspects of hope and wisdom as awareness of life uncertainty, no model was confirmed.

### 8.3.2 Reciprocal Effects Between Wisdom and Memory

*Wisdom as Integrated Dialectical Thinking and Memory.* With regard to reciprocal relationships between the three dimensions of wisdom, the two aspects of hope and memory capacity, a non-recursive path model containing a direct feedback loop between the “integrated dialectical thinking” dimension of the WITHAQ and memory performance was firstly confirmed, Satorra-Bentler scaled  $\chi^2(1, N = 444) = 0.777, p = .377$ ; CFI = 1.000; RMSEA = .000 (90% CI: .00 to .12) (see Table 11.1, M5). As shown in Table 11.1, the magnitude of the standardized direct

effect of integrated dialectical thinking on memory performance was nearly three times the magnitude of the direct effect in the opposite direction. The latter was also statistically nonsignificant at the .05 level. On the basis of this finding, it is clear that integrated dialectical thinking positively predicted memory performance.

*Wisdom as Practical Wisdom and Memory.* The second non-recursive path model that was confirmed, Satorra-Bentler scaled  $\chi^2(1, N = 444) = 2.437$ ,  $p = .118$ ; CFI = .992; RMSEA = .057 (90% CI: .00 to .15) (see Table 11.1, M6), contained a direct feedback loop between the “practical wisdom” dimension of the WITHAQ and RBMT performance. As can be seen in Table 11.1, the magnitude of the standardized direct effect of practical wisdom on memory performance was close to zero. On the other hand, there was a direct effect in the opposite direction, that is, from memory to practical wisdom, but this effect was not statistically significant at the .05 level. In other words, based on the findings, only a tendency of memory capacity to affect practical wisdom was delineated.

As regards reciprocal relationships between wisdom as awareness of life uncertainty and memory as well as between hope – either as pathways thought or as agency thinking – and memory capacity, no model was confirmed.

### 8.3.3 Reciprocal Effects Between Hope, Wisdom, and State Affect

*Hope as Pathways Thought and State Positive Affect.* To test reciprocal relationships between the two aspects of hope, the three dimensions of wisdom, and state affect as measured by the PANAS, a non-recursive path model containing a direct feedback loop between the “pathways thought” aspect of the ADHS and the “state positive affect” dimension of the PANAS was firstly confirmed, Satorra-Bentler scaled  $\chi^2(1, N = 444) = 0.251$ ,  $p = .616$ ; CFI = 1.000; RMSEA = .000 (90% CI: .00 to .10) (see Table 11.1, M7). As shown in Table 11.1, the magnitude of the standardized direct effect of state positive affect on pathways thought was nearly three times the magnitude of the direct effect in the opposite direction. However, both effects were not statistically significant at the .05 level. Thus, based on the findings, it seems that there was a tendency of state positive affect to influence pathways thought as compared to the opposite.

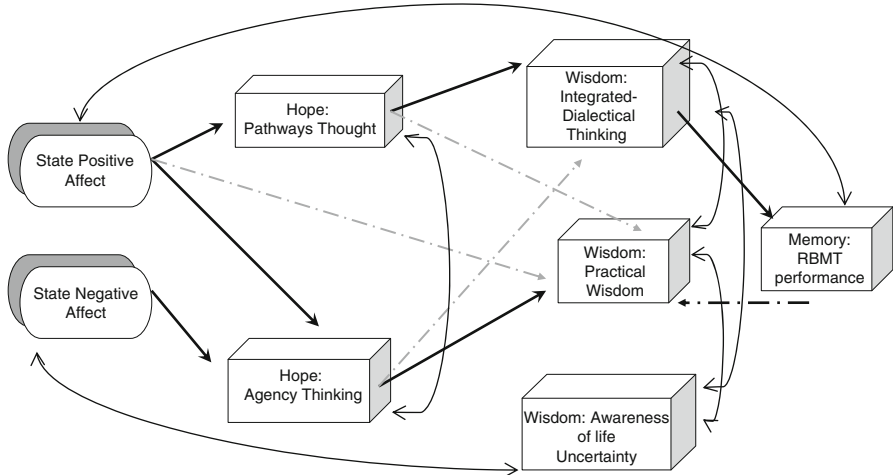
*Hope as Agency Thinking and State Positive Affect:* The second non-recursive path model that was confirmed, Satorra-Bentler scaled  $\chi^2(4, N = 443) = 17.696$ ,  $p = .001$ ; CFI = .966; RMSEA = .088 (90% CI: .05 to .13) (see Table 11.1, M8), contained a direct feedback loop between the “agency thinking” aspect of the ADHS and the “state positive affect” dimension of the PANAS. As shown in Table 11.1, the magnitude of the standardized direct effect of state positive affect on agency thinking was a little more than twice the magnitude of the direct effect in the opposite direction. However, both effects were not statistically significant at the .05 level. So, based on the findings, it can be concluded that there is a “stronger” tendency of state positive affect to influence agency thinking as compared to the opposite.

*Wisdom as Practical Wisdom and State Positive Affect.* The next non-recursive path model that was confirmed, Satorra-Bentler scaled  $\chi^2(1, N = 444) = 0.774$ ,  $p = .378$ ; CFI = 1.000; RMSEA = .000 (90% CI: .00 to .12) (see Table 11.1, M9), contained a direct feedback loop between the “practical wisdom” dimension of the WITHAQ and the “state positive affect” dimension of the PANAS. As Table 11.1 shows, the magnitude of the standardized direct effect of state positive affect on practical wisdom was nearly twice the magnitude of the direct effect in the opposite direction, in absolute value. However, both effects were statistically significant at the .05 level. Thus, according to the findings, it appears that state positive affect positively predicted practical wisdom, while, on the other hand, there was a lower negative effect of practical wisdom on state positive affect.

*Hope as Agency Thinking and State Negative Affect.* A non-recursive path model containing a direct feedback loop between the “agency thinking” aspect of the ADHS and the “state negative affect” dimension of the PANAS was finally confirmed, Satorra-Bentler scaled  $\chi^2(3, N = 444) = 10.472$ ,  $p = .014$ ; CFI = .969; RMSEA = .075 (90% CI: .03 to .13) (see Table 11.1, M10). As Table 11.1 shows, the magnitude of the standardized direct effect of state negative affect on agency thinking was nearly five times the magnitude of the direct effect in the opposite direction. The latter was also statistically nonsignificant at the .05 level. This finding clearly shows that state negative affect predicted agency thinking and not the opposite. No other models were confirmed as regards reciprocal relationships between hope, wisdom, and state affect.

### **8.3.4 The Integrated “Picture” of the Relationships Among Hope, Wisdom, Memory, and State Affect: The All-Embracing Recursive Path Model**

Based on the findings of the non-recursive path models that were confirmed, we proceeded to test a path model containing all the aforementioned variables with unidirectional effects of one variable on another in order to unveil the integrated “picture” of their relationships at a given time. Specifically, the covariance matrix was based on total scores for hope as pathways thought, hope as agency thinking, wisdom as integrated dialectical thinking, wisdom as practical wisdom, wisdom as awareness of life uncertainty, state positive affect, and state negative affect, and on RBMT performance. State positive and state negative affect were defined as exogenous variables. All the facets of hope and wisdom as well as memory performance were defined as endogenous variables. Then, starting from the covariance matrix, the specified model was computed using robust maximum likelihood estimates. Several iterations, which included suggested modifications indicated by the Lagrange multiplier and Wald tests, resulted in a slightly changed model that was finally confirmed, Satorra-Bentler scaled  $\chi^2(15, N = 442) = 16.607$ ,  $p = .343$ ; CFI = .997; RMSEA = .016 (90% CI: .00 to .05).



**Fig. 11.1** Final recursive path model examining the relationships among hope, wisdom, memory capacity, and affect. The three *gray dashed lines* represent the three direct effects that were initially suggested but dropped out of the final model. The *black dashed line* represents a direct effect that was dropped out after the addition of individual demographic factors into the model. All the direct effects are significant at the .05 level. The values of the standardized direct effects, the estimated errors, and the correlations are presented in Table 11.2, which gives detailed information about the final path model after the addition of individual demographic factors

As shown in Fig. 11.1, the unidirectional effects between variables that were identified in the previous models were kept in the final path model, except for the following three effects: the direct effect of the “state positive affect” on the “practical wisdom” variable, the direct effect of the “pathways thought” on the “practical wisdom” variable, and the direct effect of the “agency thinking” on the “integrated dialectical thinking” variable. Moreover, after the inspection of modification indices, the “state positive affect” and “memory performance” as well as the “state negative affect” and “awareness of life uncertainty” variables were allowed to freely covary (see Fig. 11.1).

Specifically, Fig. 11.1 shows that state positive affect directly affected hope as pathways thought, and indirectly, via pathways thought, influenced wisdom as integrated dialectical thinking. Furthermore, state positive affect directly affected hope as agency thinking and, via this aspect of hope, positively influenced practical wisdom. On the other hand, state negative affect had a direct negative effect on hope as agency thinking and, via this relationship, influenced practical wisdom. Moreover, memory was affected by wisdom as integrated dialectical thinking and in its turn affected practical wisdom. Besides the interrelations of the two aspects of hope and of the three dimensions of wisdom, there was also a low positive relationship between state positive affect and memory as well as between state negative affect and awareness of uncertainty in life.

### 8.3.5 The Effects of Age, Education, and Gender on Hope, Wisdom, Memory, and Affect

Initially, individual demographic factors were incorporated into the recursive path model that was confirmed, as exogenous variables, according to the specific hypotheses of the study. After the examination of the modification indices, a new model was confirmed, Satorra-Bentler scaled  $\chi^2(30, N = 442) = 48.974$ ,  $p = .015$ ; CFI = .980; RMSEA = .038 (90% CI: .017 to .056), containing all the psychological variables plus age, gender, and educational level (see Table 11.2).

As shown in Table 11.2, age was found to have low negative effects on state positive and mainly on state negative affect. It was also found to have a direct negative effect on memory performance. However, in the case of wisdom and hope, this pattern of age effects seems to be reversed: Age positively affected hope as agency thinking as well as practical wisdom and wisdom as awareness of life uncertainty. Moreover, age did not display any negative effect on hope as pathways thought and wisdom as integrated dialectical thinking (see Table 11.2).

Female gender was found to slightly increase negative affect and slightly decrease state positive affect. It was also found to positively affect wisdom as awareness of life uncertainty (see Table 11.2).

Finally, as can be seen in Table 11.2, higher educational level was related to a lower level of negative affect. Moreover, with regard to wisdom, higher educational level negatively affected practical wisdom but positively influenced integrated dialectical thinking.

## 8.4 Discussion

### 8.4.1 Reciprocal Effects Between Hopeful and Wise Thinking

In order to reveal the pattern of relationships between hope and wisdom in the adult sample of the present study, we initially determined the direction of effects between hopeful and wise thinking by testing a series of simple non-recursive path models. This was necessary because of the cross-sectional nature of the study. Every model of this type contained a direct feedback loop between each one of the three dimensions of wise thinking and each one of the two aspects of hopeful thinking.

Considering the first model that was verified (M1), it is obvious that Hypothesis 1 was partially disconfirmed since there was a relationship between pathways thought and integrated dialectical thinking, but it was hope as pathways thought that positively predicted wisdom as integrated dialectical thinking and not vice versa. Hope theory posits that the development of a person's dispositional hope occurs during early childhood and suggests that healthy attachments to caregivers who model hopeful thinking are essential for learning goal-directed thinking (Snyder et al. 2005). There is also evidence that childhood trauma interferes with

**Table 11.2** Final path model displaying the relationships among individual – demographic factors, hope, wisdom, memory capacity, and affect

Dependent variables	Independent variables										R <sup>2</sup>
	Age <sup>a</sup>	Gender	EL	PA	NA	HPT	HAT	WIDT	E		
Positive affect (PA)	-.09 <sup>b</sup>	-.12								.99	.02
Negative affect (NA)	-.20	.09	-.12							.98	.04
Hope/pathways thought (HPT)				.39						.92	.16
Hope/agency thinking (HAT)	.15			.55	-.15					.81	.34
Wisdom/practical wisdom (WPW)	.38		-.13				.29			.82	.33
Wisdom/integrated dialectical thinking (WIDT)	.29		.19			.34				.92	.15
Wisdom/awareness of life uncertainty (WAU)		.12								.95	.10
Memory: RBMT performance (M)	-.35							.15		.92	.16
<i>Correlations among variables</i>											
Age-Education	-.51										
PA-M	.11										
NA-WAU	.15										
HPT-HAT	.45										
WPW-WIDT	.22										
WPW-WAU	.21										
WIDT-WAU	.29										

<sup>a</sup>Age: 1 = young adults, 2 = middle-aged adults, 3 = older adults; Educational level or EL: 1 = low, 2 = middle, 3 = high; Gender: 1 = male, 2 = female

<sup>b</sup>All the direct effects and correlations among variables are significant at the .05 level

the development of hopeful thinking and is associated with a significant lower level of hope in adults (Creamer et al. 2009). On the other hand, theories that posit that wisdom is reflected in a higher level of cognitive organization (see Pascual-Leone 2000; Sternberg 1990) claim that complex thinking is associated with post-formal operations and experiences of adulthood. In this light, it seems that if pathways thought and integrated dialectical thinking share some similarities, this is likely due to the contribution of early learned skills for figuring out alternative strategies toward a valued goal. This is aligned with the development of multisided thinking that considers and differentiates the alternative actions in a given situation.

Unlike what was expected as regards the relationships of pathways thought with the dimensions of wise thinking, the second model that was confirmed (M2) showed that pathways thought predicted practical wisdom as well. Practical wisdom represents accumulated expert knowledge about life blended with values. It is applied to life dilemmas in the form of ill-structured problems with unknown dimensions and multiple possible solutions (see Baltes and Staudinger 2000; Sternberg 1990, 1998). Just like integrated dialectical thinking, the development of such a kind of life expertise presupposes many years of life (Baltes and Staudinger 2000). Therefore, it seems that early learned goal-directed thinking that leads the person from their childhood to find and sustain different pathways – cognitive strategies toward a valued goal, enriches practical wisdom with a large repertory of procedural knowledge that can later be applied in everyday problem solving.

Hypothesis 2 predicted a direct effect of practical wisdom on hope as agency thinking. The results were not in the predicted direction. The respective model that was confirmed (M4) showed a reciprocal relationship. Specifically, it appears that it is mainly agency thinking that predicts practical wisdom. However, it seems that an effect from the opposite direction may exist as well. In other words, based on their positive beliefs regarding personal goals and abilities to reach these goals, people develop a sense of control over their environment. This sense of control functions as an “energizer” for the application of accumulated knowledge blended with values in life dilemmas. On the other hand, expert knowledge blended with values as well as past successes in handling socio-moral problems via utilizing this knowledge constitute a “strong” background for bolstering goal-related motivation. In this light, Hypothesis 2 was partially confirmed.

Besides practical wisdom, hope as agency thinking was found to positively influence wisdom as integrated dialectical thinking (M3). The findings of a study on childhood trauma indicated that the lower level of hope in adults who experienced childhood trauma compared to adults who did not have such an experience was mainly an outcome of a significantly lower level of agency (Creamer et al. 2009). Based on this, it seems that even if a person has developed complex thinking that can facilitate goal attainment, when the level of agency thinking is low, one lacks the confidence in their ability to utilize complex thinking. Thus, agency thinking appears to function as “energizer” for two of the three dimensions of wise thinking, while contrary to what was expected, no relation was found between wisdom as awareness of life uncertainty and agency thinking. At this point, it must



be noted that the lack of relationship may be due to methodological reasons since the third dimension of wise thinking is not well represented in the WITHAQ (see for details, Moraitou and Efklides 2011).

#### **8.4.2 Wisdom and Memory: Reciprocal Effects Between Wise Thinking and Memory Performance**

Of the various models tested, only two were finally confirmed. Both of them depicted relations between memory and wise thinking. According to the first model (M5), Hypothesis 3 was partially disconfirmed since there was a relationship between integrated dialectical thinking and memory, but it was wisdom as integrated dialectical thinking that positively predicted memory and not the other way around. Integrated dialectical thinking presupposes strong working memory capacity that can support its abstract “form.” However, it seems that if this complex kind of thinking has been developed and represents the main way of one’s thinking, the person utilizes it in everyday life, and this is functioning as a kind of memory training that results in better memory performance.

Unlike what was expected, another model that was confirmed (M6) indicated that there is a tendency of memory to affect practical wisdom. Taking into account that this effect was not maintained in the final recursive path model after the addition of age and demographic variables, one could infer that memory is not critical for practical wisdom.

#### **8.4.3 Hope, Wisdom, and State Affect**

As shown in the two models depicting the relationships between hope and positive affect (M7, M8), instead of the reciprocity effects suggested by Hypothesis 4, it was only state positive affect that predicted hope in its two aspects. This finding suggests that positive affect – even in the form of state affect – strengthens hopeful thinking. Such a function of positive affect appears to confirm the broaden-and-build theory (Fredrickson 2001) according to which, a “positive attitude” builds resources and enables human flourishing. It is also attuned to theories claiming that hope involves “affective forecasting,” that is, a blend of positive feelings that a person experiences when they make plans for a positive future (see Coulehan 2011).

The only confirmed model (M10) on the association of state negative affect with hopeful thinking showed that state negative affect negatively predicted hope as agency thinking. This finding is in line with previous evidence according to which agency, that is, the motivational aspect of hopeful thinking, is more vulnerable to negative affect induced by negative experiences, situations, or expectations (Coulehan 2011; Creamer et al. 2009).

As regards the direction of the effects in the associations of wise thinking with state affect, only one model was confirmed (M9), partially verifying Hypothesis 5a. There was only one reciprocal relationship, and it involved state positive affect and practical wisdom. It seems that expert knowledge about life blended with values as

well as the process of applying it for resolving life dilemmas are among the resources that state positive affect can “build” on. However, the effect from the inverse direction was negative. This implies that practical wisdom, as a repertory of well-practiced strategies, heuristic methods, and behaviors, may dampen high arousing positive affect such as interest and surprise by blocking creativity and originality (see Sternberg 1990, 1998).

Finally, Hypothesis 5b suggesting that wisdom as awareness of life uncertainty would have a direct positive effect on state negative affect was not confirmed since no such non-recursive model was confirmed.

#### 8.4.4 The Integrated Model

In order to reveal the pattern of relationships among all variables of interest, we tested a recursive path model containing state positive and negative affect, the two aspects of hopeful thinking, the three dimensions of wise thinking, and memory performance. In addition, the model included unidirectional effects between the variables – as these effects were defined based on the paths with higher standardized values from the feedback loops in the non-recursive path models – the correlations between the two aspects of hope, and the correlations between the three dimensions of wisdom.

According to the final path model, state affect is a psychological quality that influences human strengths rather than a quality that can be influenced by them. Specifically, state affect influences hopeful thinking directly, and wise thinking indirectly, via hope. State positive affect appears to increase the level of both aspects of hope and via pathways thought and agency thinking enhances the level of wisdom as integrated dialectical thinking and practical wisdom, respectively. Moreover, the final path model indicated that there is a low positive relationship between state positive affect and memory performance. Generally speaking, these findings corroborate theories pointing out the central role of positive affect in psychological functioning and subjective well-being such as the broaden-and-build theory (Fredrickson 2001), that posits that positive affect enables human flourishing, and the theory of subjective well-being homeostasis that envisages a genetically predefined, deep, and stable positive mood state that drives both personality and well-being (see Cummins 2013). As regards the identified association of state positive affect with memory performance, it is a finding in line with previous evidence and theories related to emotion–cognition interactions with advancing age. It is claimed that emotional variables influence older adults’ cognitive performance mainly in tasks requiring attention and memory (see Fernandez-Ballesteros 2007).

Besides the aforementioned relations of state positive affect with hope, wisdom, and memory, it must be mentioned that the direct effect of positive affect on practical wisdom, which was found in the respective non-recursive model, was the only effect that was not significant in the final path model. This means that the previously found direct effect is explained by the indirect effect of positive affect on practical wisdom via agency thinking.

As already shown in the respective non-recursive model, state negative affect influences the motivational aspect of hopeful thinking. Besides this, the final path model indicated that it has an indirect effect, via agency thinking, on practical wisdom. This implies that negative affect can block the energy required for applying expert knowledge about life blended with values in life dilemmas. Furthermore, a low positive relationship between state negative affect and wisdom as awareness of life uncertainty was revealed in the final path model, partially confirming, in this way, Hypothesis 5b and previous findings connecting stress and anxiety with the experience of uncertainty (Alaszewski and Coxon 2009).

As regards the effects of hopeful thinking on wise thinking, two of the previously found direct effects were not maintained in the final model. Specifically, hope as pathways thought affected directly wisdom as integrated dialectical thinking, and indirectly, via this dimension of wisdom, memory performance. However, the effect on practical wisdom was not significant. Therefore, it seems that a person's ability to consider alternatives (strategies, aspects, etc.) and differentiate them in order to fit a specific situation functions as a kind of memory training due to the demands it poses on working memory. On the other hand, nonsignificance of the previously found effect of pathways thought on practical wisdom can be explained by the relationship between the two aspects of hope as well as the relationships of the dimensions of wisdom between each other, as found in the final model. The same explanation could hold for the initially found effect of hope as agency thinking on wisdom as integrated dialectical thinking.

In conclusion, the final path model showed that the pattern of relationships among affect, hopeful thinking, wise thinking, and memory in the adult sample of the present study is roughly organized as follows: State affect influences hopeful thinking, hopeful thinking predicts wise thinking, and wise thinking has a low but positive effect on memory performance.

#### **8.4.5 The Effects of Age and Demographic Characteristics on Hopeful and Wise Thinking, State Affect, and Memory**

*Age.* The final model that was confirmed indicated that age has a rather positive effect on wise and hopeful thinking, in general. Specifically, age was found to positively predict hope as agency thinking and, mainly, wisdom as practical thinking and awareness of life uncertainty (Hypothesis 6a). Furthermore, age was not found to have any negative effect on hope as pathways thought and wisdom as integrated dialectical thinking, disconfirming, in this way, Hypothesis 6a. Therefore, it seems that advancing age, when it is not associated with specific negative experiences such as serious health or cognitive decline (see Snyder 2000), can “act as facilitator” for the development or enhancement of positive traits such as wisdom and hope. In fact, the small but significant contribution of age to the motivational aspect of hopeful thinking as well as its stronger contribution to practical wisdom and wisdom as awareness of uncertainty in life may all be connected through the accumulation of knowledge coming from experiences that were evaluated as

“gains” or “successes” at the end, even though initially they might have been experienced as “hard” ones. Moreover, the positive effects of positive affect and hopeful thinking on thinking requiring increased working memory resources, such as integrated dialectical thinking, appear to counteract a possible negative age effect on it.

In conclusion, this study showed that positive aging is possible in terms of (a) positive age effects on specific facets of human strengths and virtues and (b) the interplay between positive traits and processes that can eliminate negative age effects on them.

*Gender.* As expected (Hypothesis 6b), females were found to report slightly increased awareness of life uncertainty as well as slightly decreased positive and increased negative affect compared to males. The common ground between the female gender and awareness of uncertainty might be the negative affect (i.e., anxiety) inherent in the experience of uncertainty (Alaszewski and Coxon 2009).

*Education.* In corroboration of Hypothesis 6c, education was found to positively influence wisdom as integrated dialectical thinking, confirming theory, and evidence supporting the view that education facilitates the development of abstract forms of thinking (see Sternberg 1990, 1998). Moreover, education was found to have a low negative effect on practical wisdom. This finding may indicate that when educational level is low, then people resort to practical wisdom as ready-made knowledge and guidelines derived from experience and values in order to manage everyday life situations.

Summing up, the addition of age and demographic characteristics in the final model depicting the relationships among affect, hope, wisdom, and memory indicated that the direct and indirect effects, via state affect, of gender and education on hopeful and wise thinking are generally few and of low magnitude. On the other hand, the general pattern of age effects on the psychological qualities appears encouraging, mainly, because age can foster positive traits.

#### **8.4.6 Limitations of the Study**

A number of limitations of this study have to be pointed out. First, there was a confounding of age with education and possibly cohort effects in general. However, it should be noted that the tendency of age to be related to lower educational level is a characteristic of the general population in Greece, as well. Due to adverse sociohistorical conditions, the majority of old (about 70 years old and older) people, both men and women, in Greece are of low educational level. Conversely, the majority of young people tend to be highly educated since higher education is considered one of the most valuable aspirations in the Greek society nowadays.

Second, all the instruments used in the study, except for the RBMT, were self-report questionnaires and were subject to reporting bias. Moreover, the WITHAQ and the ADHS were developed to measure certain aspects of the cognitive facet of wisdom and hope, respectively. However, both wisdom and hope are considered multifaceted constructs involving affective, personality, and spiritual facets that

were not examined in the present study. More observational and dynamic problem-solving situations are needed to fully understand the adaptational use of wisdom and hope.

With respect to methodological issues, the main disadvantage of the present study was that the design was cross sectional. In order to capture the dynamic process of the causal relationships among hopeful and wise thinking, affect, and memory, as these relationships are changed with advancing age, a longitudinal design is needed along with the application of more sophisticated statistical methods.

#### **8.4.7 Conclusions: Implications of the Study**

Despite the limitations, the present study revealed significant relations between two positive psychological traits, namely, hope and wisdom, by examining not only the association but also the direction of effect among specific components of hopeful thinking and wise thinking. In fact, the study showed that it is hope that affects wisdom and not the reverse. Besides the relation of the two positive qualities between each other, the study indicated the way these positive traits are associated with psychological functioning in terms of state affect and memory. Actually, affect, and mainly positive affect, is the one that influences hopeful and wise thinking, while memory is affected by them. A last contribution of the study regards the investigation of age effects on hopeful and wise thinking. There is evidence that advancing age leads to a higher level of hopeful and wise thinking directly and indirectly, via the relations among affect, hope, and wisdom.

Taking into account that human societies grow older, positive kinds of thinking such as hopeful and wise thinking emerge again as valuable human strengths. It seems that societies need to invest in lifelong learning that can support the development of positive characteristics and processes. Personal experiences, active exercising of both synthetic and analytic thinking and concern for the common good could enhance cognitive aspects of hope and wisdom at the individual level and compensate for or counteract age-related losses in cognitive resources, but also contribute to the welfare of the broader society.

Nevertheless, many issues still remain open. It would be interesting to examine the pattern of relationships between hope and wisdom across time and/or across cultural contexts. Besides the relations of these two positive traits, we need to explore more complex patterns of the dynamic interplay among hope, wisdom, other positive traits and processes such as forgiveness or gratitude, and more aspects of cognitive functioning that are negatively affected by age, such as attention and cognitive control.

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# Chapter 12

## Dispositional Hope and Action-State Orientation: Their Role in Self-Regulated Learning

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### 1 Introduction

In the last 20 years, considerable progress has been made as regards the components and functioning of self-regulated learning (Pintrich 2000; see Torrano and Gonzalez 2004). Self-regulated learning (SRL) emphasizes the active role of the learner in setting one's goals in learning and ensuring that the goals set are attained (Boekaerts 1997; Efklides 2011; Pintrich 2000; Winne 2004; Zimmerman 2008). Theorists in SRL tend to agree that the process of self-regulation refers to the person monitoring and control of their performance, cognition, and affect, as well as their environment in order to achieve their goals (Efklides 2011; Efklides et al. 2002; Pintrich 2000).

Self-regulated learning in academic settings is assumed to consist of skills that are learned, rather than being unchangeable or genetically rooted (Pintrich 2000). As a result, various aspects of SRL have often been conceived of as being situated and context-dependent, while less attention has been devoted to the connection between SRL and individual trait-like characteristics (Bartels et al. 2009; Bidjerano and Dai 2007; Hong and O'Neil 2001).

However, according to Efklides (2011) and Winne (2004), the interactions between different components of SRL can be described either at a macrolevel or at a microlevel. The level of functioning of SRL processes is important because metacognition, motivation, and affect at a macrolevel are represented by relatively stable or trait-like person characteristics (e.g., metacognitive knowledge, achievement goal orientations, self-efficacy beliefs; see also Pintrich 2000) that function across tasks or situations. In other words, SRL is conceived of as domain-specific

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but at a generalized level (e.g., self-efficacy in mathematics, emotions raised in a specific course) rather than at the task-specific or microlevel. The macrolevel, or “Person” level according to Efklides (2011), comprises cognitive, metacognitive, motivational, affective, and volitional person characteristics. In extant research in SRL, there has been a lot of emphasis on motivational person characteristics but less so on affective and volitional. The “Metacognitive and Affective model of Self-Regulated Learning” (the MASRL model) (Efklides 2011) posits that there are interrelations between person characteristics and between them and microlevel processes as well. Specifically, affect and motivation are assumed to interact with metacognition, both metacognitive knowledge (MK) and metacognitive strategies (MS), and volitional characteristics are assumed to be related to MS.

Yet, there is no exhaustive list of motivational or volitional person characteristics in the MASRL. This study conceptualized motivation in terms of dispositional hope (Snyder 2000; Snyder et al. 1991) and volition in terms of action-state orientation (Kuhl 1985, 1994b). Focusing on dispositional hope and action-state orientation is important because of their centrality in theories of well-being.

Although research on dispositional hope is relatively recent, the construct itself has a long history in psychology and is viewed by some theorists as a key mechanism of change in psychological interventions (Snyder 2000; Snyder et al. 2002). Hope theory offers a framework for understanding how people reach their goals and how they motivate themselves in doing so. Hope has been found to be related to many aspects of students’ lives (e.g., views about the self and the future, life satisfaction and well-being, physical health, academic and athletic achievement, and interpersonal relationships) (see Lopez et al. 2009).

Action-state orientation, on the other hand, captures individual differences in self-regulatory effectiveness. Effective self-regulation fosters health-promoting behaviors (Kuhl and Fuhrmann 1998), positive psychological well-being (Baumann et al. 2005), and high job performance (Diefendorff et al. 2000, 2006). Furthermore, Kuhl’s Personality Systems Interactions (PSI) theory that extends his initial action-state orientation theory has applications in learning and treatment contexts (Kuhl 2000, 2001). Therefore, Kuhl’s idea about action-state orientation can be used for understanding volition in the context of SRL.

In the following, hope and action control are considered in more detail, and findings concerning their relations with SRL strategies and performance in academic contexts are reviewed. An empirical study is then reported that tested the interrelations between hope and action-state orientation with self-reported strategy use and course attainment in a university student sample.

## 2 Hope

Hope seems to hold considerable promise as a goal-related construct: one of the ways through which people manage their goals and adapt to everyday life challenges is hope. Hope contributes to one’s life fulfillment and longevity, and for this reason in the context of positive psychology is identified as a human strength (Danner et al. 2001; Kashdan et al. 2002).

Hope was originally investigated within the fields of philosophy and theology. But with the advent of the positive psychology movement, and the accompanying shift in focus away from psychopathology and toward human strengths, hope began to be studied thoroughly. Hope theory, pioneered by Snyder in the early 1990s (see Snyder et al. 1991), has provided researchers with an explanatory model that has stood the test of empirical investigation for almost 20 years. Although it is common to equate hope with wishful thinking (as in “hope for the best”), Snyder and his colleagues (Snyder et al. 1991) have invested hope with an operational definition. Hope as trait involves the belief that one can produce “routes to desired goals” (Snyder 2000, p. 8). High-hope individuals believe that they can initiate and maintain activities that can lead to their goals (agency thinking), as well as produce potential routes to their goals (pathways thought). Being able to set up goals and make plans to achieve them is assumed to be the major driving force that underpins an individual’s positive emotions and psychological well-being. Nevertheless, Snyder et al. (1991) do not consider hope as an emotion but rather as a dynamic cognitive motivational system. It is goal-directed thinking.

In this study, hope is conceptualized as a goal-directed disposition, which consists of two interrelated but distinct components (Snyder et al. 1991; see also Snyder 2000): (a) *waypower or pathways thought*, which reflects one’s perceived ability to produce alternative paths, that is, cognitive strategies toward desired or valued goals, as well as to talk positively to the self about being able to find these paths; (b) *willpower or agency thinking*, which reflects the motivational dimension of hope. It refers to one’s ability to endorse agency self-talk. Agency thinking takes on special significance when people encounter obstacles. In such situations, agency thinking and self-talk help the person direct the required motivation to the best pathway (Snyder et al. 2002). Put in another way, people who are high in hope have both the “ways” and the “will” to achieve their goals. According to the theory, pathways thought and agency thinking work in concert. They are reciprocal, additive, and positively related but cannot be reduced one to the other (Snyder et al. 1991). This duality of the agency and pathways components of hope is what clearly distinguishes hope from other positive psychology constructs such as self-efficacy (Bandura 1997) and optimism (Scheier and Carver 1985).

## ***2.1 Hope Versus Other Positive Psychology Constructs***

Robinson and Snipes (2009) claim that hope, self-efficacy, and optimism are expectancy beliefs that form a cognitive set because each focuses on different aspects of competence and control. Self-efficacy is the belief in one’s capabilities to organize and execute courses of action that can bring about a specific outcome (Bandura 1997). Self-efficacy, however, is essentially a competence belief; it shares some similarity to the agency (willpower) component of hope, but it differs from it in that self-efficacy does not incorporate the pathways (waypower) component. Pathways thought is a manifestation of control processes. Optimism, on the other

hand, is a general disposition to expect positive, rather than negative, outcomes across various circumstances and situations (Scheier and Carver 1985). Optimism is a control belief and shares some similarity to the pathways (waypower) component of hope, but it differs from hope in that it does not incorporate the agency (willpower) component. Optimism represents general positive outcome beliefs, but pathways thought identifies specific routes through which one can achieve specific outcomes.

In the past decade, hope was established as a coping strategy across multiple life domains including the academic. Ciarrochi et al. (2007) examined the distinctiveness of three “positive thinking” variables (trait hope, self-esteem, and positive attributional style) in predicting students’ future high school grades and reports of their affective states. The results demonstrated that, once extraneous variables were controlled, hope was the best predictor of school grades. Furthermore, hope was found to predict increases in activated positive affect. Similar results were found by Robinson and Snipes (2009), who examined if hope, optimism, and self-efficacy predict academic well-being (academic achievement, affect, coping skills, and life satisfaction) among African-American college students. Most recently, Marques et al. (2011) explored the relationship between hope, life satisfaction, self-worth, and academic achievement among middle school students. The results demonstrated that hope significantly predicted academic achievement in core and other subjects. Life satisfaction and self-worth were not found to predict any variance in academic achievement over and above that accounted for by hope. Finally, Curry et al. (1997) carried out studies of hope with samples of university student athletes and found that even taking into account other influential factors (e.g., the amount of training performed by each runner, the athletes’ coach-rated athletic giftedness), athletes with higher levels of hope felt better and performed better.

## ***2.2 Hope, Learning Strategies, and Academic Achievement***

Research has shown that hope in both its trait and state forms is an effective predictor of various performance-related behaviors (see Snyder 2000). Students with low hope often experience high anxiety, especially in competitive, test-taking situations. Such anxiety presumably reflects the fact that these students often do not use feedback from failure experiences in an adaptive manner so as to improve their future performance (Onwuegbuzie and Snyder 2000; see Lopez et al. 2009). Rather than using such feedback constructively, low-hope individuals are prone to self-doubt and negative ruminations that interfere with attention to the appropriate cues for both studying and test taking (Snyder 2000; see Lopez et al. 2009). High-hope students, on the other hand, do not doubt their abilities when they fail and do not let failures affect their sense of self-worth over time. In this regard, high-hope students make adaptive attributions that the “failure” feedback merely means that they did not try hard enough in a given instance or that they did not identify the correct

studying or test-taking strategies. This emphasis on strategies and on effort attributions may explain, in part, why hope is not significantly related to inborn intelligence but instead is consistently related to academic achievement (Lopez et al. 2009).

Specifically, Snyder et al. (1991) in a validation study of the Adult Dispositional Hope Scale (ADHS) showed that, among high school and university students, trait hope was a positive predictor of academic achievement. It was found that university students with higher hope, relative to students with lower hope, aimed at higher grades at the start of the semester and obtained better end-of-semester grades. In a longitudinal study of hope and academic success, Snyder et al. (2002) administered the Hope Scale (a measure of trait hope) to 213 newly admitted college freshmen. The academic performance of these students was tracked over the following 6 years. Higher trait hope positively predicted cumulative grade point averages (GPA) over the 6-year period. Snyder et al. (2002) also found that, at the end of this period, high-hope relative to low-hope students were more likely to have graduated and not to have been dismissed from the university due to poor grades. The hope–academic success relationship has also been found in younger students. Snyder et al. (1997) showed the validity of the Children’s Hope Scale (CHS) and that trait hope positively predicted scores on a standardized basic skills test for kindergarten through year 12 students. Moreover, the predictive power of hope remained significant even when controlling for self-worth and intelligence (Snyder et al. 1997), prior grades and self-esteem (Snyder et al. 1991), and entrance examination scores (Snyder et al. 2002).

Besides hope as trait, Rose (2008) explored the relationship between academic domain-specific hope and academic achievement among college students and high school students. The results indicated that domain-specific academic hope predicted undergraduate final course grades, college grade point averages (GPA), and high school GPA beyond trait hope. In the same study, Rose (2008) also attempted to distinguish hope from other similar motivation frameworks in predicting student achievement and found that academic hope predicted academic achievement beyond demographics, self-efficacy, self-regulated learning strategies, goal orientation, and optimism. Robinson and Rose (2010) also examined the relationship between general academic hope, mathematics hope, and academic achievement among undergraduate students. Their findings demonstrated that general academic hope predicted college GPA and final course grades in introductory psychology courses, but mathematics hope predicted final course grades in mathematics classes beyond academic hope.

To sum up, given the longitudinal nature of many of the above studies, and given that most of them investigated hope as trait, there is good reason to expect that hope as trait can predict academic performance in school and university. However, to our knowledge, the extent to which dispositional hope relates to self-regulated learning and, particularly, to the use of learning strategies has not been investigated, although there have been studies in recent years that researched hope in relation to motivation and affect that are connected to SRL and to student well-being.

### 3 Action Control

Kuhl (1985) identified self-regulation with action control and posited that there are individual differences in the latter. Specifically, Kuhl (1985) introduced the notion of action-state orientation as a personality trait that captures individual differences in the ability to regulate emotions, cognitions, and behaviors to accomplish one's intentions (Kuhl 1994b). The action-state orientation construct is measured on a continuum with two polar ends: action orientation and state orientation.

Because of its focus on dynamic, process-oriented issues of goal striving, action-state orientation can be useful in understanding why two individuals who have similar goals, knowledge, ability, and desire to perform well nevertheless fail to achieve the same level of performance. Although individuals vary along a continuum of action-state orientation, it is helpful to contrast those individuals who are more action-oriented to those who are more state-oriented. Individuals with a strong action orientation are able to devote their cognitive resources to the task at hand, thus enabling them to expediently move from a present goal state to some desired future goal state. These individuals flexibly allocate their attention for the purpose of task execution and goal attainment. Persons who are more action-oriented are characterized by enhanced performance efficiency (Kuhl 1994b) and the ability to complete tasks after minor failures or setbacks. Alternatively, individuals with more of a state orientation tend to have persistent, ruminative thoughts about alternative goals or affective states, which reduce the cognitive resources available for goal striving. This reduction of available resources impairs state-oriented individuals' ability to initiate activities and to follow tasks through to completion, especially when the activities are difficult, nonroutine, or both (Brunstein and Olbrich 1985; Kuhl 1994b). Kuhl and Beckmann (1994) further suggested that there are three distinct aspects or dimensions of action-state orientation: preoccupation (vs. disengagement), hesitation (vs. initiative), and volatility (vs. persistence).

*Preoccupation (vs. Disengagement) Dimension.* This dimension, with opposing poles preoccupation and disengagement, indicates the degree to which individuals explicitly process information related to some past, present, or future state. The action-oriented pole of this dimension (disengagement) refers to the ability to detach from thoughts about alternative goals or undesirable events that may interfere with progress on the task at hand. In contrast, the state-oriented pole is associated with impaired effectiveness due to the perseveration of thoughts related to some unpleasant experience (real or simulated), often involving failure (see Diefendorff et al. 2000; Kuhl 1994a).

*Hesitation (vs. Initiative) Dimension.* This dimension, with opposing poles hesitation and initiative, refers to the degree to which individuals have difficulty initiating intended goal-directed activities. Action-oriented individuals on this dimension (initiative pole) are able to easily initiate work on tasks.

*Volatility (vs. Persistence) Dimension.* This dimension, with opposing poles volatility and persistence, taps the ability to stay in the action-oriented mode for as long as needed. It reflects the extent to which individuals get distracted

when working on an interesting or mandatory task. Action-oriented individuals (persistence pole) are able to effectively maintain focus on an intention until the task is completed, whereas state-oriented individuals are easily pulled off-task, thus impairing their overall performance.

### ***3.1 Action Control, Learning Strategies, and Performance***

The above description of the dimensions of action-state orientation implies that in SRL, action orientation would be more adaptive than state orientation as regards initiation and selection of effective problem-solving strategies (Brunstein and Olbrich 1985; Kuhl 1994b), although literature reviews (Kuhl and Fuhrmann 1998) have revealed that state orientation is not always dysfunctional. Perry et al. (2001) examined self-regulation (action control) using only the preoccupation subscale, along with measures of cognitive strategies (e.g., elaboration) and metacognitive self-monitoring strategies using the scales adopted from the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al. 1991), note-taking using a single item, and academic achievement using final course grade. They found that students who were high in failure preoccupation took more notes during lectures and had better final grades. Students' use of elaboration and metacognitive strategies did not significantly correlate with failure preoccupation.

Bembenutty et al. (1998) examined action control using a scale based on the behavioral component of the more extended Action Control Scale of Kuhl (1985). They also assessed students' academic performance and learning strategy use using a modified version of MSLQ. Action control was found to be positively related to students' use of all of the cognitive, metacognitive, and self-regulatory strategies, except for critical thinking, attention, and peer learning. In a similar vein, Papanтониου (2002) examined the effect of action control on learning strategy use and performance on cognitive tasks (text comprehension and spatial orientation). Action orientation (disengagement, initiative, and persistence) was measured using Kuhl's (1994b) 36-item Action Control Scale (ACS-90). She assessed self-regulation through the use of two categories of strategies: deep strategies and technical learning strategies. Path analyses showed that initiative facilitated cognitive performance through deep strategies use, and persistence facilitated cognitive performance through technical learning strategies use.

Jaramillo and Spector (2004) examined the effect of action control on effort and academic performance. Action orientation (disengagement, initiative, and persistence) was measured using Diefendorff et al.'s (2000) 22-item revised Action Control Scale (R-ACS-90), which is based on Kuhl's (1994b) 36-item ACS-90. Results indicated that initiative and persistence were positively related to actual effort expenditure, which is an important antecedent of academic performance. Diefendorff (2004) measured action orientation (disengagement and initiative) using the respective subscales of the 22-item R-ACS-90 (Diefendorff et al. 2000). The results suggested that disengagement and initiative predicted performance

independently of students' goal orientation, cognitive ability, self-efficacy, and self-set goals (Diefendorff 2004). Roy et al. (2008) examined action control using only the preoccupation and the hesitation subscales. They assessed self-regulation through four categories of strategies: (1) planning and organization, (2) efforts to understand further, (3) engagement, and (4) perseverance. They found that failure preoccupation was barely linked to self-regulation, whereas use of all self-regulatory strategies was negatively related to hesitation.

In sum, the literature review regarding action control reveals an inconsistent pattern of relations of action control with use of SRL strategies. Moreover, there is inconsistency in the findings regarding the relations of action control with other motivational variables and performance. However, none of the above studies included dispositional hope in the motivational variables. Thus, the question is if hope, as pathways thought and agency thinking, is related to action-state orientation and if the effects of hope and action control on performance are, firstly, distinct and, secondly, mediated by use of learning strategies.

## 4 Aim: Hypotheses

The present study aimed to examine the effect of dispositional hope (i.e., pathways thought and agency thinking) and action control (i.e., disengagement, initiative, and persistence) on SRL strategies use (i.e., cognitive, metacognitive, and resource management) and academic performance in university students.

According to the MASRL model (Efklides 2011), interrelations between each of the above person characteristics and the SRL strategies are expected: Both dispositional hope aspects, as motivational characteristics, and action control tendencies, as volitional characteristics, are assumed to be related to metacognition in the form of metacognitive strategies (MS) and learning strategies, which constitute the person's usual strategies for the control of cognition and learning.

Specifically, with respect to action control, it was hypothesized that action orientation will be associated with the use of cognitive, metacognitive, and self-regulatory strategies (Hypothesis 1). Based on the studies of Bembenuity et al. (1998), Jaramillo and Spector (2004), Papantoniou (2002), and Roy et al. (2008), we hypothesized that initiative and persistence will be positively associated with the use of learning strategies (Hypothesis 1a); based on Perry et al.'s (2001) findings, we expected negative associations between disengagement and use of self-regulated learning strategies (Hypothesis 1b).

With respect to dispositional hope, it was hypothesized that both pathways hope – as measured with perceived ability to clearly conceptualize goals and develop specific strategies to reach one's goals – and agency thinking – as measured with initiation and sustaining of one's motivation – will be related to the self-regulated learning strategy use (Snyder 2000; Snyder et al. 2002) (Hypothesis 2).

However, since trait characteristics are more distal from performance than the use of learning strategies, it was hypothesized that the effects of dispositional hope and action control on academic performance will be indirect via learning strategies.



Specifically, since several studies (Bidjerano and Dai 2007; Chen 2002; see Bandalos et al. 2003) have shown that metacognitive strategies along with resource management strategies emerged as good predictors of performance, trait hope and action control were expected to have an indirect effect on course attainment mediated by use of metacognitive and resource management strategies (Hypothesis 3).

Finally, there are no studies, to our knowledge, that explored the relationship of dispositional hope with action control. However, Matti et al. (2009) investigated whether action control can predict achievement emotions and showed that hope, as learning-related emotion, was positively related to persistence and initiative. Accordingly, as both dispositional hope and action control are goal-related dispositions, we expected associations between their constituents and particularly between initiative and both aspects of hope, because this is exactly the role of hope: to facilitate initiation of action based on a positive prospect of the course and outcome of action. Agency thinking, on the other hand, would also be related to persistence because one persists to the extent one believes that he or she can attain a goal and to do this one needs to sustain action. Lower correlations were expected between the two aspects of hope and disengagement, because hope is proactive, a facilitator of action, rather than retroactive or failure-related (Hypothesis 4).

## 5 Method

### 5.1 Participants

The total sample consisted of 275 undergraduate students (11 male, 264 female, mean age = 20.4 years, SD = 2.8, age range = 18–39 years) attending the School of Education at the Universities of Ioannina and Thessaly and the School of Psychology at the Aristotle University of Thessaloniki, in Greece.

### 5.2 Instruments

*The Adult Dispositional Hope Scale (ADHS).* The ADHS (Snyder et al. 1991) is a 12-item scale tapping dispositional hope in adults. Four of the items refer to pathways thought and four to agency thinking. Finally, four of the items are distracters. The data of these last four items were not included in the analysis. Example items are the following: for pathways thought: “There are lots of ways around any problem.”; for agency thinking: “My past experiences have prepared me well for my future.”; for distracters: “I feel tired most of the time.”

For the purposes of a previous study, the ADHS was translated into Greek by the second author (Moraitou et al. 2006). Participants had to answer whether each of the 12 items was true for themselves, on a 5-point Likert-type scale ranging



from 1 (not true at all) to 5 (very true). Confirmatory factor analysis marginally confirmed the two-factor structure of ADHS for this sample, namely, Pathways Thought and Agency Thinking,  $\chi^2(19, N = 275) = 60.30, p < .001, \chi^2/df = 3.44, CFI = .91, SRMR = .06, RMSEA = .09 (CI_{90\%} .06 \text{ to } .11)$ , (see Brown 2006). The internal consistency for the factors was Cronbach's  $\alpha = .74$  and  $.61$ , respectively.

*The Action Control Scale (ACS-90)*. In order to assess individual differences in action-state orientation, Kuhl (1985) developed the Action Control Scale (ACS), which is a self-report instrument. Since its original development, the ACS has undergone three revisions, the most recent version being the ACS-90 (see Diefendorff et al. 2000). The ACS-90 consists of 36 items, divided equally into three subscales measuring failure-related, decision-related, and performance-related action orientation (Kuhl and Beckmann 1994).

The items of the scale present brief scenarios of everyday life and require selection of one of two options that indicate what the participant would do in the depicted situation. One of the options is indicative of action orientation and the other of state orientation. The scoring of the responses is based on action orientation. A score of one is assigned to responses that correspond to action orientation and zero to state orientation responses. Scores are added for each of the three subscales with higher scores denoting higher action orientation. Example items are the following: For the preoccupation subscale: "If I had just bought a new piece of equipment (for example, a tape deck) and it accidentally fell on the floor and was damaged beyond repair: A. I would manage to get over it quickly. B. It would take me a long time to get over it."; for the hesitation subscale: "When I know I must finish something soon: A. I have to push myself to get started. B. I find it easy to get it done and over with."; for the volatility subscale: "When I read something I find interesting: A. I sometimes still want to put the article down and do something else. B. I will sit and read the article for a long time."

In an attempt to improve the ACS, Diefendorff et al. (2000) examined the factor structure of the ACS-90 performing confirmatory factor analyses. A number of items that did not fit to come up with a three-factor solution corresponding to the Failure-related (AOF), Decision-related (AOD), and Performance-related (AOP) Action Orientation subscales were dropped. The revised Action Control Scale retained 8 from the original 12 AOF subscale items, 8 from the original 12 AOD subscale items, and 6 from the original 12 AOP subscale items.

For the purposes of a previous study, the ACS-90 was translated into Greek by the first author and back translated by one independent bilingual psychologist (see Papantoniou 2002; Papantoniou and Efklides 2004). The back-translated questionnaire was then compared to the original, and a few minor modifications were made. The factor structure of the Greek version of the Action Control Scale was examined using confirmatory factor analyses.<sup>1</sup> The three-factor structure was not confirmed (Papantoniou et al. 2010). Consequently, a second set of

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<sup>1</sup> For all confirmatory factor analyses, EQS 6.1 (Bentler 2005) was used.

**Table 12.1** The structure of the revised Action Control Scale (standardized solution) in the present sample

Items	Factors			E	R <sup>2</sup>
	AOF (F1)	AOD (F2)	AOP (F3)		
AOF4	.470			.883	.221
AOF10	.525			.851	.275
AOF13	.371			.929	.138
AOF19	.453			.891	.205
AOF22	.445			.896	.198
AOF28	.474			.880	.225
AOF31	.591			.807	.349
AOF34	.468			.884	.219
AOD2		.375		.927	.140
AOD5		.385		.923	.148
AOD8		.440		.898	.194
AOD11		.423		.906	.179
AOD20		.565		.825	.319
AOD26		.514		.858	.264
AOD29		.536		.844	.287
AOD35		.417		.909	.174
AOP3			.198	.980	.039
AOP15			.632	.775	.399
AOP21			.230	.973	.053
AOP24			.474	.881	.224
AOP33			.673	.739	.453
AOP36			.333	.943	.111
Factor correlations					
F2 (AOD)–F1 (AOF)		.495			
F3 (AOP)–F1 (AOF)		.088			
F3 (AOP)–F2 (AOD)		.335			

*Note:* AOF = the Failure-related Action Orientation Factor; AOD = the Decision-related Action Orientation Factor; AOP = the Performance-related Action Orientation Factor; E = Residuals

confirmatory factor analyses was performed, using a revised item set of the three ACS-90 subscales. In the revised item set, we excluded 14 items which were proposed by Diefendorff et al. (2000) as poorly performing. Four items were excluded from the AOF subscale (items 1, 7, 16, 25) and the AOD subscale (items 14, 17, 23, 32). Six items were eliminated from the AOP subscale (items 6, 9, 12, 18, 27, 30). The models using the revised item set yielded a noticeably better fit to the data than did the first set of analyses. Thus, on the basis of chi-square difference tests, comparisons of CFI, and the RMSEA and SRMR values, the three-factor model with interrelations between the latent factors was confirmed,  $\chi^2(206, N = 323) = 259.90, p = .006, \chi^2/df = 1.26, CFI = .92, SRMR = .05, RMSEA = .03 (CI_{90\%} .02 \text{ to } .04)$  (Papantoniou et al. 2010).

As shown in Table 12.1, confirmatory factor analysis verified the three-factor structure of the revised ACS-90 for this sample, as well. The three factors were Failure-related, Decision-related, and Performance-related Action Orientation,

$\chi^2(206, N = 275) = 277.7, p < .001, \chi^2/df = 1.01, CFI = .89$  (marginal),  $SRMR = .05, RMSEA = .04$  (CI<sub>90%</sub> .02 to .05) (see Brown 2006). Cronbach's  $\alpha$  values were .70 for the preoccupation subscale, .68 for the hesitation subscale, and .58 for the volatility subscale. The low alphas are consistent with previous research using the original and revised English version (Diefendorff et al. 2000; Jaramillo and Spector 2004; Kuhl 1994b) as well as the original Greek version (Papantoniou 2002), in which the internal consistency indices ranged from .51 to .78.

*The Motivated Strategies for Learning Questionnaire (MSLQ)*. The MSLQ was developed by Pintrich et al. (1991) as a measure of SRL. The MSLQ has two sections, a motivational and a learning strategies section. In this study, the learning strategies section was used to assess college students' use of various learning strategies in college courses. The learning strategies section of the MSLQ consists of 50 items, divided into nine subscales measuring rehearsal, elaboration, organization, and critical thinking (representing the cognitive aspect of SRL); metacognition (representing the metacognitive aspect of SRL); and environment and time management, effort regulation, peer learning, and help seeking (representing the management component of SRL). Responses are given on a 7-point Likert-type scale anchored by 1 (not at all true of me) and 7 (very true of me). An example from the subscale used to measure elaboration is the following: "When reading for this class, I try to relate the material to what I already know." An example from the subscale used to measure metacognition is the following: "When I study for this class, I set goals for myself in order to direct my activities in each study period." An example from the subscale used to measure study environment management is the following: "I usually study in a place where I can concentrate on my course work."

For the purposes of this study, the learning strategies section of MSLQ was translated into Greek by two of the authors and an independent bilingual person. The two versions of the translated questionnaire were then compared and modifications were made. Confirmatory factor analysis verified the nine-factor structure of the learning strategies section of the MSLQ for this sample. The fit indices, although not satisfactory,  $\chi^2(1139, N = 275) = 2635.4, p < .001, \chi^2/df = 2.31, LISREL GFI = .71, SRMR = .09$ , were comparable to those of Pintrich et al. (1991, pp. 79–80),  $\chi^2/df = 2.26, LISREL GFI = .78, SRMR = .08$ .

Cronbach's alphas were also comparable to those of Pintrich et al. (1991) (given in parenthesis):  $\alpha = .66$  (.69) for rehearsal,  $\alpha = .71$  (.76) for elaboration,  $\alpha = .82$  (.64) for organization,  $\alpha = .67$  (.80) for critical thinking,  $\alpha = .59$  (.79) for metacognition,  $\alpha = .72$  (.76) for environment and time management,  $\alpha = .70$  (.69) for effort regulation,  $\alpha = .64$  (.76) for peer learning, and  $\alpha = .53$  (.52) for help seeking.

*Course Attainment*. Course attainment was measured with students' final grade on a psychology course, which was converted to a 10-point scale ( $M = 6.52; SD = 2.33$ ). Final course grade was assessed with (a) an essay (maximum score: 3) and (b) an exam, which required recall of information from textbooks and was administered at the end of the semester (maximum score: 7).

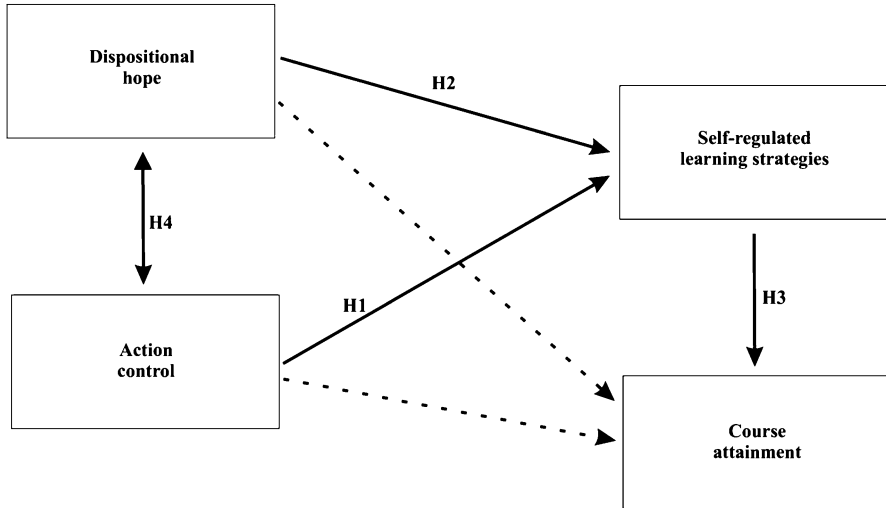
### 5.3 Procedure

Institutional permission for conducting research with human participants was obtained. The survey was administered to students of four introductory courses in psychology (including mainly topics of educational, cognitive, and developmental psychology). Although the courses were taught by two different instructors (a postdoctoral student and a lecturer), same textbooks and similar class assignments were utilized across the four different courses. Questionnaires were administered in the classroom. The ACS-90 and the ADHS were administered at the beginning of the semester. Participants answered in writing the two questionnaires which were presented in counterbalanced order. They also provided demographic information, including age, gender, and class level (freshman, sophomore, junior, or senior) prior to completing the questionnaires. The MSLQ was administered during a session at the end of the semester. Participation in the study was voluntary, and participants were informed that all results were confidential.

### 5.4 Statistical Analysis

Path analysis – a structural equation modeling (SEM) technique for analyzing structural models with observed variables – was used in order to examine the relationships between the various constructs. Sum scores were used for the various scales. Specifically, to examine the model depicting the hypothesized relationships between the subscales of action orientation, dispositional hope, SRL strategies, and course attainment, a path analysis with manifest variables was computed. Although it is undoubtedly true that the attainment of specific goals (e.g., passing an exam) may enhance one's level of dispositional hope and action orientation, the general rule is that personality traits are relatively enduring, and so when an association is found between a trait (such as hope) and a specific behavior (such as reaching one's goal), it is plausible to assume that the trait caused the behavior rather than the other way round. Consequently, the two components of dispositional hope as well as the three dimensions of action orientation were defined as exogenous variables, while the graded performance and the nine self-regulated learning strategies were defined as endogenous variables. The theoretical model tested is shown in Fig. 12.1.

Path analysis was conducted in EQS Version 6.1 and performed on covariance matrix using the Maximum Likelihood estimation procedure (Bentler 2005). Initially, in the structural part of the model, the three action orientation and the two dispositional hope independent variables incorporated in the path model were allowed to correlate between them and predict the nine latent variables of self-regulated learning strategies and the dependent variable of course attainment. Simultaneously, the latent self-regulation learning strategies variables were allowed to correlate and predict the dependent variable of course attainment as well. Modifications suggested by the Wald test were used to test the necessity



**Fig. 12.1** The theoretical path model of dispositional hope, action control, self-regulated learning strategies, and course attainment. *Solid lines* represent links in the hypothesized model; *dashed lines* represent alternative links

of the regressions included in the model and to ensure a theoretically plausible and statistically restricted model. The chi-square ( $\chi^2$ ), the chi-square/degrees of freedom ( $\chi^2/\text{df}$ ) ratio, the comparative fit index (CFI), the standardized root-mean square residual (SRMR), and the root-mean square error of approximation (RMSEA) were used as indices of the model.

## 6 Results

### 6.1 Path Analysis

The path model that was confirmed is displayed in Fig. 12.2. The correlations between independent variables of the model are shown in Table 12.2. The overall fit of the model was good,  $\chi^2(30, N = 275) = 33.05$ ,  $p = .32$ ,  $\chi^2/\text{df} = 1.10$ , CFI = .99, SRMR = .04, and RMSEA = .02 (CI<sub>90%</sub> .00 to .05) (see Brown 2006).

As hypothesized in Hypothesis 1 and Hypothesis 3, two of the dimensions of action orientation, that is, disengagement and initiative, were related to the use of cognitive, metacognitive, and resource management strategies. Specifically, initiative was positively related to metacognitive, time and study environment management, and effort regulation strategies. It seems that a student's capability to initiate intended actions explains metacognitive and time and study environment

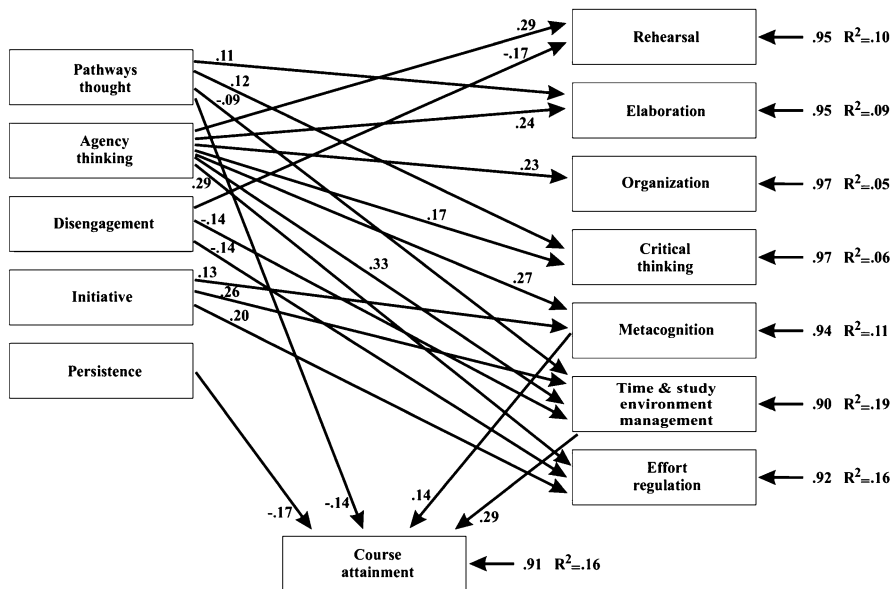


Fig. 12.2 The confirmed path model of dispositional hope, action control, self-regulated learning strategies, and course attainment. Only significant effects are presented in the figure

management strategies use, which in turn is translated into greater graded performance. Disengagement, on the other hand, was found to be negatively related to rehearsal, time and study environment management, and effort regulation. That is, the higher the disengagement, the less the use of some of the cognitive and resource management strategies. Since time and study environment management is positively related to course attainment, a student’s early disengagement from activities or thoughts that are related to task demands or resource management can be detrimental to performance.

Contrary to Hypothesis 3, however, persistence was directly and negatively related to graded performance. It seems that a student’s capability to remain focused on goal-related activities until completion was translated into lower course attainment during a typical, rather easy, and routine introductory psychology course examination. It is likely that for students, persistence is associated with obstacles in attaining one’s goal. It seems that persistence was not required in this course which was relatively easy. Another unexpected finding, in contrast to Hypothesis 1a, was the lack of relationships between persistence and SRL strategies. It seems that the course demands were not such as to require intensive use of learning strategies. Therefore, persistence was not activated to support strategy use.

As hypothesized in Hypothesis 2 and Hypothesis 3, the two components of dispositional hope – agency thinking and pathways thought – were related to the use of several cognitive, metacognitive, and resource management strategies. Specifically, agency thinking was positively related to the use of all of the cognitive,

**Table 12.2** Correlations between independent variables of the path model displayed in Fig. 12.2

Correlations among independent variables	
Agency thinking – Pathways thought	.466
Disengagement – Pathways thought	.217
Initiative – Pathways thought	.323
Persistence – Pathways thought	.153
Disengagement – Agency thinking	.140
Initiative – Agency thinking	.387
Persistence – Agency thinking	.276
Initiative – Disengagement	.337
Persistence – Initiative	.237
Elaboration – Rehearsal	.487
Organization – Rehearsal	.666
Critical thinking – Rehearsal	.173
Metacognition – Rehearsal	.498
TSE management – Rehearsal	.522
Effort regulation – Rehearsal	.315
Organization – Elaboration	.540
Critical thinking – Elaboration	.467
Metacognition – Elaboration	.564
TSE management – Elaboration	.257
Effort regulation – Elaboration	.236
Critical thinking – Organization	.268
Metacognition – Organization	.481
TSE management – Organization	.380
Effort regulation – Organization	.242
Metacognition – Critical thinking	.403
TSE management – Metacognition	.427
Effort regulation – Metacognition	.386
Effort regulation – TSE Management	.555

*Note:* Only significant correlations are presented in the table

metacognitive, and resource management strategies, except for peer learning and help seeking. Since metacognition and time and study environment management were positively related to course attainment, a student's perceived ability to endorse agency self-talk when one encounters obstacles facilitates course attainment via effective regulation of metacognitive and time and study environment management strategies use.

Pathways thought was found to be positively related to the cognitive strategies of elaboration and critical thinking. However, there was a low negative relationship with time and study environment management, which, as a consequence, led to lower course attainment. Furthermore, contrary to Hypothesis 3, pathways thought was found to be directly and negatively related to course attainment. These findings suggest that a student's perceived ability to produce alternative cognitive strategies toward valued goals and to talk positively to the self about being able to find these strategies may undermine graded performance either directly or indirectly via inappropriate regulation of resource management strategies.

Finally, as hypothesized in Hypothesis 4, both pathways thought and agency thinking were positively related to the three dimensions of action orientation, probably because they share a common, goal-related background. Moreover, as predicted in Hypothesis 4, hope was more strongly related to initiative rather than to persistence and disengagement.

## 7 Discussion

The aim of this study was to examine the effect of dispositional hope and action orientation on SRL strategy use and academic achievement. The present study focused on two of students' antecedent characteristics, namely, hope as a motivational construct and action control as a volitional construct, and their potential impact on self-regulated learning. Specifically, this study found that SRL strategies and course attainment are linked to important trait-like characteristics, such as dispositional hope and action orientation. Without discounting the claim that SRL skills, in general, are learnable, the results of the present study suggest that personality predispositions impact SRL strategy use and academic achievement in specific situations (see Bidjerano and Dai 2007; Efklides 2011). Dispositional hope and action control can lead to decisions regarding top-down self-regulation as both of them appear to be associated with metacognitive knowledge in the form of strategies (the SRL cognitive, metacognitive, and resource management strategies) that one tends to use when dealing with a task (e.g., an introductory psychology course examination) (see Efklides 2011). These findings are in accordance with the MASRL model's predictions for the person characteristics and support the importance of hope and action control, as human strengths, in self-regulated learning. Since, on the one hand, self-regulated learners' attributes are positively related to academic achievement and to quality of learning and performance (Boekaerts 1997; Schunk and Zimmerman 1994) and, on the other hand, academic achievement is positively related to greater opportunities in adulthood (Johnson et al. 2006), our findings also reinforce the positive psychology initiative, with its focus on the science of well-being and optimal human functioning. However, despite the positive effects of hope, our results suggest that there can be negative consequences in particular cases.

### *7.1 Effects of Hope on SRL Strategy Use and Course Attainment*

As regards the predictive ability of dispositional hope and action orientation for SRL strategy use, agency thinking clearly stands out as a powerful predictor. Specifically, agency thinking was found to positively affect the use of cognitive, metacognitive, and resource management strategies. This is in accordance with the definition of agency thinking as "individuals' perceptions regarding their capacities



to clearly conceptualize goals and to initiate and sustain the motivation for using the specific strategies to reach those goals” (Snyder et al. 2002). This finding can also be explained taking into account the similarity shared between the agency (willpower) component of hope and self-efficacy, since self-efficacy beliefs are strong predictors of educational outcomes and have been shown to correlate with self-regulatory processes (Bandura 1997).

Pathways thought appears to positively influence some higher-order learning strategies, such as elaboration and critical thinking. This finding could be explained on the basis of the complex nature of the aforementioned strategies which presupposes one’s ability to view a problem from multiple perspectives. However, pathways thought seems to undermine course attainment either directly or indirectly via inappropriate regulation of resource management strategies. This finding can be explained by the more creative, rather than executive nature of pathways thought (Snyder 2000; Snyder et al. 2002). In other words, one may engage in pathways thought to avoid routine or persistence requiring tasks or tasks requiring resource management, thus to inappropriately disengage from task processing.

## ***7.2 Effects of Action Control on SRL Strategy Use and Course Attainment***

Overall, several interesting results were derived from this study as regards the three dimensions of action control. Specifically, initiative was found to positively affect the use of metacognitive and resource management strategies. This finding is consistent with previous research (Bembenutty et al. 1998; Jaramillo and Spector 2004; Papantoniou 2002; Roy et al. 2008) indicating that, due to their greater ability to get things done, decision-related action-oriented individuals are willing to monitor the effectiveness of their learning, to manage effectively their time and study environment and to exert greater effort on learning strategies, despite potential distractions.

Contrary to decision-related action orientation, failure-related action orientation appears to block mainly resource management strategies. It seems that quick disengagement from failure may lead the person to bypass causal search that adds to effective self-regulation. Since time and study environment management – which is one of the resource management strategies – was found to be positively associated with course attainment, the above finding is consistent with the literature showing that being preoccupied with failure (i.e., state-oriented) can improve performance (Diefendorff 2004; Kuhl and Fuhrmann 1998; Perry et al. 2001). Another finding confirming that state orientation is not always dysfunctional was the negative effect of persistence on course attainment. Research indicates that state-oriented individuals operate at their optimum when they are allowed sufficient time and freedom from pressure and when they receive explicit instructions on the activities to be completed. In sum, the results of this study tend to repeat the differential effects of action control on learning strategy use and performance.

To conclude, dispositional hope and action orientation, as goal-related motivational and volitional constructs, respectively, were found to be associated with the use of all of the cognitive, metacognitive, and resource management strategies, except for peer learning and help seeking. It is possible that peer learning and help seeking are different from other learning strategies in that they involve social interaction. Therefore, it is likely that social motives will influence the use of these strategies.

### ***7.3 Effects of SRL Strategy Use on Course Attainment***

The study also revealed that self-regulated learning strategies, particularly metacognition and time and study environment management, mediate the effect of disengagement, initiative, pathways thought, and agency thinking on course attainment. These findings are consistent with previous research indicating that metacognition and time and study environment management are two of the most salient predictors of academic achievement (Bidjerano and Dai 2007; Chen 2002; see Bandalos et al. 2003). Specifically, these results suggest that, students who tend to monitor the effectiveness of their learning and to manage effectively their time and study environment are likely to perform better in an introductory psychology undergraduate course compared to their counterparts lacking these qualities. Taking also into account the negative effects of persistence and pathways thought on graded performance in this course, it seems that students who described themselves as low in persistence and pathways thought were more likely to achieve high course grades possibly because they are effective learners and do not experience the negative repercussions of persistence and effort to find alternative ways in order to deal with course requirements.

### ***7.4 Relations Between Hope and Action Control***

Finally, an interesting finding is the association of the two aspects of dispositional hope with the three dimensions of action orientation. This finding is consistent with previous research indicating that the majority of the action orientation dimensions are significantly related to positive achievement emotions such as hope (Matti et al. 2009). As both dispositional hope and action orientation are goal-related constructs, one plausible explanation for these relationships could be the fact that action-oriented individuals are facilitated by hope – as their ability to direct the required motivation to the best pathway via agency thinking and self-talk and to produce alternative strategies toward the task – to easily initiate work on task and to effectively maintain focus on an intention until the task is completed.

## 7.5 *Limitations of the Study*

A limitation of this study is the use of self-report measures of self-regulatory skills. More rigorous designs are needed to establish the validity of the relationship between academic self-regulation and trait-like characteristics using behavioral and observational measures of self-regulation (i.e., real-time measurements of learning strategies or video-based assessment of strategy use) (see Dermitzaki 2004). The restricted nature of the sample should also be noted, especially with regard to age and gender. It is also not known whether the same pattern of results would be obtained, if college students of other disciplines, than education, were involved.

Future research should further clarify, in different college student groups and in different age groups, how hope and action control predispose individuals to employ SRL, and how these dispositions interact with learning situations in developing relevant self-regulation strategies. It will be helpful for future research to examine the relationships of hope and action control with other positive psychology constructs (e.g., flow, self-esteem, optimism, mindfulness) and to evaluate the role that they may play in self-regulated learning. For example, mindfulness may be one means by which SRL can be cultivated. However, more research is needed to disentangle both the causal relationships among the various positive person characteristics and the causal relationships of SRL with its antecedents and outcomes. Beyond unidirectional designs, such research should also attend to the reciprocal nature of these linkages. Finally, further research is also needed to investigate the development of hope and action control.

In conclusion, our findings suggest that human strengths, like hope and action control, influence in distinct ways SRL strategy use and course attainment. Since the findings of the present study have the potential to support the application of positive psychology constructs to SRL, it is evident that this line of research can bring together two independent theoretical traditions that have yet to be extensively integrated (positive psychology and self-regulated learning) and enrich our understanding of learning phenomena.

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# Chapter 13

## One Ingredient in the Mix: Interest and Psychological Well-Being

Mary Ainley

### 1 Introduction

Whether the focus is infancy, adolescence, early adulthood or old age, through experience individuals accrue schemas that provide the basis for processing of new experience. Such schemas consist of combinations of cognitions and affect organized in ways that reflect the unique experience of each individual. In this chapter I examine the contribution of interest to psychological well-being and assert that interest is an essential ingredient in the dynamic system of experience that contributes to psychological well-being. First, we consider some current understandings of how interest relates to constructs often associated with interest, namely, curiosity and enjoyment. In addition, I consider some of the ways that interest functions in the regulation of specific activities and in the building of schemas that guide behaviour. Against this background, I then examine the role of interest in the virtues and character strengths described in positive psychology as well as the contribution of interest at specific developmental stages: infancy and early childhood, adolescence and adulthood.

The contribution of interest to psychological well-being arises from its character as motivating affective experience and from its functional significance for the onset and maintenance of information seeking. Consider the following illustrations.

*Scenario 1.* A little child approximately 15 months of age is given a puzzle with colourful cut-out pieces depicting insects. Each puzzle piece has a small metal button on the insect body, and as the carer passes a small paddle to the child, the attached string hovers over one of the insect pictures. There is a small but audible click as it attaches to the puzzle piece which is then lifted up. The child is watching intently. When given the paddle, the child touches on the pictures *as if* trying to

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take out the pieces. This is repeated a number of times, and eventually the end of the string clicks with one of the pieces. Smiles and excitement replace the concentration as the puzzle piece is lifted and then shaken to the floor. But it is not long before smiles give way to concentration again as the child repeats the process of passing the paddle and string across the puzzle. The child stays with the puzzle for many minutes, lifting the pieces, shaking them onto the floor, and encouraging the carer to replace them. The whole episode has lasted about 20 min. Careful observation of the character of the child's behaviour suggests that processes such as attention, concentration, persistence, interest, delight, exploration and skill development, all part of this episode, have become linked together in the emerging schema.

*Scenario 2.* Three 9th graders are working on a group project. They have 3 weeks to work on a topic of their choice. They are required to negotiate a topic, research information and present the findings to the class. The students have met and decided to investigate the development of hot air ballooning. One of the three has been interested in hot air ballooning since attending a ballooning event as an 11-year-old. The second is happy to go along with this topic as she is keen on photography and knows she can create stunning images for the presentation. The third student is in the school debating team. For him the topic is not important. A good speech can be produced for any topic. Early in week 3, they are observed deep in conversation debating the finer points of topic, imagery and presentation. Each has a personal interest that they can pursue in this project. Each brings to the project well-organized schemas consisting of the positive affect and knowledge associated with highly valued activities, and as they work on the project, existing schemas become elaborated and new schemas develop.

*Scenario 3.* The third scenario concerns a retired teacher who has devoted a lifetime to teaching English language and literature. Eighteen months after retirement, she volunteers for an after-school drop-in programme at the local community centre. Some of the young people at the centre are struggling with their schoolwork, and the retired teacher invites them to sign up for individual tuition sessions. In the first meeting with each student, she attempts to identify what aspects of language and writing they find interesting as well as aspects they find difficult. She then plans engaging ways to build their experience of language and writing. The young people very quickly warm to their new 'tutor', and it is not long before many of them are devoting additional time to practise their writing skills and to read more widely. They clearly value the opportunity to discuss their efforts with someone who gives them time and is interested in their opinions. The former teacher's volunteering is both challenging and rewarding. It allows expression of her well-organized schemas linking positive affect with her wide knowledge and appreciation of language and literature. Simultaneously, the young people are surprised to find their interest has been aroused, and they are enjoying this new challenge of mastering language and expression skills. In short, they are developing language and writing schemas that combine interest, knowledge seeking and a range of other cognitive and affective experiences.

Each of these scenarios illustrates the basic proposition that interest is an essential element in the mix of cognitive and affective processes organized as personal



schemas that contribute to growth and development at all life stages. We now turn to consider some of the theory and evidence on which this proposition is based.

## 2 The Ubiquity of Interest

A productive way to examine the role of interest in complex behaviour is to adopt the lens of dynamic systems theories with their central proposition that at all levels human behaviour involves the development of self-organizing systems (Thelen and Smith 2006). This means that novel schemas and elaborations of existing schemas are essential features of human development. Emphasis in dynamic systems theories is on non-linear patterns of interaction including reciprocal or recursive relations between the component processes and feedback loops linking components in increasingly complex systems. Systems interact with other systems within the broader experience of the person and so change and develop. These propositions have been developed through research into perceptual, motor and cognitive functioning in infancy and early childhood (Lewis and Granic 2000; Thelen and Smith 2006), as well as the learning sciences (e.g. Jörg et al. 2007). Hence, a key issue concerns identifying ways that interest combines and interacts with other aspects of experience to create complex organizations of knowledge, affect and value.

Interest is involved in many contexts, and the term can be used to designate a transient psychological state or a very complex organization of affect, cognition and action that has become part of the personality. It is important to distinguish these levels of application. At the state level, interest represents an immediate positive orientation towards an object or event. As illustrated by the child with the new puzzle, the individual positions themselves to increased receptivity, eyebrows are raised, eyes are open wide and the whole face expresses openness to take in information from the new event. At a more generalized level, interest represents a developed organization of feelings, cognitions and actions that orient the individual to approach and engage with the object of those feelings, cognitions and actions (Hidi and Renninger 2006; Krapp 2003). Earlier, in Scenarios 2 and 3, a wide range of developed interest schemas were depicted, for example, developed interest in hot air ballooning, in public speaking and both developed and emerging interests in language and literature. As soon as we start to look closely at these various levels of meaning, it becomes clear that there are constructs closely associated with interest that help understand its contribution to psychological well-being.

### 2.1 *Interest and Curiosity*

Curiosity is often closely associated with interest and attention, and some of the overlaps and distinctions assist to appreciate the role of both to psychological well-being. The early writings of Berlyne (1949) described a special form of motivation: active search for new experiences and knowledge or curiosity. He also referred to this form of motivation as interest. More recently, researchers exploring the role of situational interest in learning and development (see, e.g. Alexander 2004; Hidi

2006; Schraw and Lehman 2001) differ over the relation between interest and curiosity. For example, Hidi and Berndorff (1998) suggest that situational interest is content specific and can be triggered by a broader set of variables than those collectively defined as collative variability and which arouse curiosity.

On the other hand, Silvia (2006) proposes that interest and curiosity have the same meaning at the level of subjective experience. He cites Berlyne's use of the terms interest and curiosity interchangeably and suggests there is no strong basis for overturning this view.

Hence, in the literature, there is considerable overlap between interest and curiosity at the level of experiential state. In what follows, our main focus is on how interest functions in relation to positive growth and well-being. Some of the research cited refers to both interest and curiosity, other research to one of interest or curiosity. Whether treated singly or in combination, they share the function of motivating exploration and information seeking.

## 2.2 *Interest and Enjoyment*

In many positive experiences, both interest and enjoyment are reported. A number of researchers have investigated the specific processes through which interest functions by distinguishing interest from enjoyment. Reeve (1989) presented undergraduate students with sets of anagrams whose patterns were distinguished by being 'more irregular' and 'less irregular' and reported that interest in the anagrams was related to differences in collative variability (more versus less irregular) while experiences of enjoyment were related to perceived performance. Interest initiates and directs attention and exploratory behaviour while enjoyment sustains persistence. More recently, Silvia (2008; Turner and Silvia 2006) distinguished activation of interest and enjoyment by identifying how interest is the outcome of appraisals on two dimensions: *novelty-complexity* and *comprehensibility* or *coping-potential*, that is, whether individuals feel competent to engage with the event. Undergraduate students and other adults were presented with a range of stimuli from art galleries and art museums designed to distinguish these functions from enjoyment. Comprehensibility, or being able to make sense of new objects, makes them interesting, while incomprehensible objects generate feelings of confusion. Paintings rated as unfamiliar, disturbing and negative but appraised as comprehensible were rated as interesting. On the other hand, paintings that were relatively more simple and calming were rated as enjoyable. Hence, interest and enjoyment, both positive experiences and both generating approach behaviour, do not always occur together and can serve different functions.

## 2.3 *Interest and Self-regulation*

Self-generated feelings of interest have been shown to serve a self-regulatory function especially under conditions where an activity may be boring or mundane but yet is perceived to be of value (Sansone et al. 1992). Students, who were given

a boring letter-copying task and were informed that the task was likely to have a positive health outcome, spontaneously engaged in strategies to make the task more interesting. It is not uncommon to experience periods of boredom or tedium in the course of pursuing an important goal, and it is at this point that individuals often create their own interest in the activity, and this self-generated interest sustains the activity to completion.

Further investigation into the functional properties of interest suggests it has a replenishment function: ‘one role of the emotion *interest* is to harness resources needed to engage a task, and if these resources are depleted, experiencing interest will aid their replenishment, above and beyond positive affect’ (Thoman et al. 2011, p.1). Thoman et al. demonstrated that when students had been participating in a task designed to deplete their cognitive resources, an interest inducing manipulation was associated with a higher level of performance on a subsequent unrelated task than students with either a positive affect or neutral emotion manipulation.

These demonstrations of the self-regulatory function of interest states provide examples of the way that the individual’s current state, in particular the current level of interest, supports and guides action. The emphasis in these experimental studies has been on identification of the specific functions of interest distinguishing it from related processes. What these findings do not tell us is how processes combine when the state of interest is aroused. When we look beyond laboratory studies to identify the contribution of interest to the way individuals react to and engage with activities in more naturalistic settings, it becomes obvious that feelings of interest combine with other emotions and cognitions to shape the direction of ongoing behaviour.

## **2.4 *Developed Interest Schemas***

Dynamic systems perspectives suggest that the relations within elements that make up self-organizing schemas are reciprocal; for example, emotion states influence associated thoughts and actions, while simultaneously thoughts and actions influence feelings. Hence, the nature of the combinations, or schemas, provides an important focus for understanding interest and its contribution to psychological well-being. In addition, variations in the constituent processes that combine to initiate interest states are expected, and these combinations are likely to vary according to both the individual’s developmental level and the activity domain.

Evidence from investigations into situational interest supports this proposition. Chen and colleagues (Chen and Ennis 2004; Sun et al. 2008) have demonstrated that situational interest in relation to physical education programmes is triggered by five factors: attention demand, challenge, exploration opportunity, instant enjoyment and novelty. The same five factors operated at both primary school and middle school levels. Yet, the functional relation between the five factors varied. At the primary school level (3rd–5th grade), there were similar patterns of association with

situational interest for all five factors. However, across middle school grades, the same dimensions applied, but the relations with situational interest varied. For older students, instant enjoyment had the strongest association with situational interest.

Similar variability is expected with developed schemas functioning as individual interest, which according to Hidi and Renninger (2006), include combinations of knowledge, value and positive affect. Ainley and Ainley (2011) have investigated the combination of processes contributing to interest in science using data from the large-scale international PISA studies of science achievement. Their findings indicate that science knowledge, personal valuing of science, enjoyment of science and general interest in learning science combine in the prediction of students' on-task interest in engaging further with specific science topics. In the domain of mathematics, Frenzel et al. (2012) reported that between 5th and 9th grades, there is a shift in the balance of affective and cognitive components in the meaning of students' interest in mathematics. While positive affect was important at both levels, the importance of cognitive aspects of mathematics was stronger for the older students than for the younger students. Hence the weight of evidence suggests there are variable combinations of properties of the situation, by domain as well as by developmental level, that are associated with interest schemas.

In short, when an individual experiences interest in a particular object or event, this expression reflects the current, unique organization taking into account both the person's immediate experience and their past experience with the relevant object or event. Experiences of feeling interested in activities are the building blocks for developed interest schemas.

### **3 Interest Schemas and Psychological Well-Being**

Interest is present in the growth-promoting development that underpins psychological well-being both as immediate experience and through the activation and elaboration of more enduring interest schemas. The overall significance of these schemas, predispositions or dispositions for positive development can be seen by the central place they hold among the virtues and character strengths elaborated in the central platform of positive psychology.

#### ***3.1 Interest and Curiosity as Character Strength***

Positive psychology proposes that there are six virtues of human well-being and positive development, namely, *wisdom and knowledge, courage, humanity, justice, temperance and transcendence* (Peterson and Seligman 2004). Interest is one of a group of related constructs identified as components of the virtue *wisdom and knowledge*. The human virtues are conceptualized as traits in the sense used in personality psychology. Each virtue (trait) subsumes a number of character

strengths or component dimensions that are variable across individuals. When they occur, they represent manifestations of the more abstract traits or personal virtues. In this system, the virtue wisdom and knowledge is defined as ‘cognitive strengths that entail the acquisition and use of knowledge’ (p. 29). The component strengths are listed as creativity or originality and ingenuity, curiosity or interest, novelty seeking and openness to experience, open-mindedness or judgement and critical thinking, love of learning, and perspective or wisdom.

Curiosity and interest are treated as interchangeable and are described as emotional-motivational states. It is also suggested that there are individual differences in the ‘frequency, intensity and duration of exploration’ associated with these emotional-motivational states. Novelty seeking is described as an individual’s ‘propensity for seeking novel and exciting experiences to elevate stimulation to an optimal level’ (Peterson and Seligman 2004, p.126). The term curiosity is also invoked as the broader term to encompass both novelty seeking (so-called diversive curiosity) and specific curiosity (increasing one’s knowledge). Finally, openness to experience represents the highest level of generality within the structure of the wisdom and knowledge virtue, and this is based on the conceptualization of curiosity (or interest) as mechanism for action, ‘whereas openness is more of a psychological predisposition’ (Peterson and Seligman 2004, p.127). Hence, the different levels of functioning of virtues and their constituent character strengths encompass both the detailed processing occurring in specific situations located across relatively confined periods of time, as well as the broader personal organizations that develop over time and that show some consistency across situations.

Fredrickson’s (e.g. Fredrickson and Branigan 2005) research on positive emotions provides a strong evidence base for the role of interest in the behaviours subsumed under the *wisdom and knowledge* virtue. Fredrickson emphasizes that by opening the individual to new experience and knowledge, positive emotions make an important contribution to growth and well-being. Positive emotions broaden the thought-action repertoire, allowing novel solutions to problems from social and physical contexts. Fredrickson proposes that in contrast to the knowledge acquired when boredom and cynicism prevail, interest and curiosity initiate exploratory behaviour in the moment. This builds knowledge of affordances in the environment and becomes a personal resource for future behaviour. Interest was one of the positive emotions that correlated with resilience in Fredrickson et al. (2003) study of adults’ reactions following the 2001 terrorist attacks on the United States. Positive emotions of gratitude, interest and love mediated between pre-crisis resilience, later development of depressive symptoms and post-crisis personal growth. According to Fredrickson, resilient people are buffered from depression and achieve positive growth through their experience of positive emotions, and interest is a key emotion contributing to these growth-promoting processes.

Under the *wisdom and knowledge* virtue, Peterson and Seligman (2004) also include love of learning which represents motivation for information seeking and knowledge acquisition. This conceptualization of love of learning draws from the literature on personal interest and well-developed individual interest (Hidi and Renninger 2006; Krapp 2003; Renninger 2000). Emphasis is on the individual

organization of factors such as knowledge, value and affect that coalesce in the predisposition to re-engage with the interest contents. This is recognized by some as a predisposition or as passion (see, e.g. Phillippe et al. 2009) or as flow (Csikszentmihalyi 1990). Hence, from the perspective of positive psychology, interest and curiosity, whether conceptualized as experiential state, predisposition or disposition, are part of major human virtues and character strengths.

The ubiquity of these schemas in a wide range of human behaviour underlines the importance of understanding what interest schemas contribute to psychological well-being. The following sections examine how this plays out at specific life stages, namely, infancy and early childhood, adolescence and adulthood.

### ***3.2 Interaction with Carers and Early Interest Schemas***

In infancy and early childhood as the child engages with the world of objects and people, they are building schemas that function to affirm the self in their immediate context. As with our example of the toddler and the new puzzle, combinations of interest and exploratory behaviour are the earliest building blocks for the development of wide-ranging affective-cognitive combinations that through experience become elaborated into affective-cognitive schemas (Izard 2007, 2009).

Development of interest schemas in infancy and early childhood makes a positive contribution to children's successful transition to schooling. The quality of interaction between child and significant adults is important for initiating the development of schemas supporting information seeking and knowledge acquisition. For example, Saxe and Stollack (1971) reported that positive feeling displayed by mothers, the level of attentiveness towards the child and the mothers' own curiosity towards novel and familiar objects were significantly related to children's exploratory and information-seeking activities. Chak (2002) linked parent and teacher support for children's exploration and investigative activities with adaptive development; 'fleeting curiosity may result in the acquisition of scattered information but may not promote systematic investigation' (p. 77). The contrast here is between sampling novelty and exploring novelty to acquire information. These processes have different implications for the child's developing schemas.

The development of curiosity and exploratory behaviour has also been linked with the character of children's early attachment relationships. Grossmann et al. (1999) suggest that by emphasizing the security function of the attachment figure, the exploratory activity that occurs when the attachment figure functions as a secure base has been overlooked.

There is ample evidence of the contribution of early exploratory behaviour for later cognitive development. For example, a large-scale study by Raine et al. (2002) demonstrated that stimulation seeking in 3-year-olds was predictive of cognitive and intellectual functioning when children were 11 years of age. These effects were assumed to operate through the richer environment created by the children's stimulus-seeking behaviour. While the focus of these studies has often been on

the value of the cognitive outcomes associated with general individual differences in childhood dispositional curiosity, recent research on children's development of emotional competence (see, e.g. Trentacosta and Izard 2007) suggests that early emotional competence operates through children's attention. 'Emotionally competent children can pay attention because their emotion understanding and regulation abilities allow them to effectively harness the motivation in positive emotions such as interest to attend to academic tasks' (p. 78). However, the relation between emotion regulation and attention is not just about the positive emotions; emotion regulation skills also involve managing negative emotions when they arise.

Hence, this body of research presents interest and related curiosity and exploratory behaviours as major factors in the development of schemas in infancy and early childhood that are associated with later academic adjustment when children reach school age.

### 3.3 *Positive Youth Development*

Interest is also a key component of the personal schemas through which adolescents understand themselves and navigate the developmental challenges they confront. A range of such schemas can be found in the central concepts used in contemporary theory and research examining adolescent development.

In a recent review, Hofer (2010) suggests that more attention be given to the ways that individual interests develop as part of adolescents' pursuit of multiple goals. Hofer proposes that certain interests are selected and become part of the developing identity, while other interests may be abandoned. He concludes that 'development does not take place as a succession of phases but is a continuous process in which interests at different points of development emerge, grow, change, differentiate, or are discarded' (p. 162). The implication from this position for supporting adolescent psychological well-being is that educational environments require opportunities for exploration, reflection, feedback and interest choices that mean commitment. This is not unlike Erikson's (1968) emphasis on adolescence as a moratorium for exploration of personal interests, abilities and lifestyle possibilities that find resolution in commitment to an integrated adult identity. Similar propositions are advanced by Azevedo (2011) in his ethnographic study of one young adolescent boy's individual interest in model rocketry. While the central object of the young adolescent's interest was model rocketry, continued engagement was not only based on the model rocketry activity *per se*. On some occasions, social goals were foregrounded when he attended model rocketry events but 'seemed more engaged in activities subsidiary or completely unrelated to model rocketry' (p. 148). Azevedo argues that the extended engagements associated with individual interests are pointers to broader understanding of the individual's life space and commitments.

Interest, exploration and curiosity have also been explored as a broad individual differences orientation, similar in function to a personality disposition. Flum and Kaplan (2006) draw on both attachment theory and identity theory to develop their



proposal that an exploratory orientation, described as a personal disposition, plays an important role in adaptive student engagement. The exploratory orientation involves interacting with the world to acquire information about the self and is likely to be growth promoting by virtue of the development of self-knowledge. It involves intrinsic motivation and generally leads to positive affect. However, the exploratory actions that are indicative of this orientation often arise when adolescents experience ‘subjective uncertainty, ambiguity and incoherence’, and so in the process, it may be necessary to tolerate negative affect. Flexibility, tolerance of ambiguity and perception of challenge rather than threat are reminiscent of both the coping-potential appraisal emphasized by Silvia (2008) in his findings distinguishing interest and enjoyment and the *openness to experience* dimension from the Big 5 model of personality (McCrae and Costa 1983).

The developmental origins of the exploratory orientation in adolescence derive from early attachment experiences and the affordance of the secure base attachment figure for experiences that expand the child’s knowledge through engaging with the world. Flum and Kaplan (2006) coordinate their exposition of the exploratory orientation with major educational motivation constructs including achievement goals, interest, self-determination and self-regulation theories. They conclude that an important goal of the educational system is to provide conditions and experiences that support the development of an exploratory orientation.

All of these approaches to understanding patterns of interest in adolescence describe complex schemas consisting of processes such as acceptance or rejection of novelty, level of exploration, information and knowledge seeking and appraisals that the challenges inherent in new experiences are within the individual’s range of competence. These perspectives on adolescent development demonstrate the range of ways that interest schemas intersect with goals, abilities and preferences in the individual’s life space and how these forms of organization can be growth promoting.

Discussion of the personal interest schemas through which adolescents understand themselves and navigate the developmental challenges that confront them would not be complete without reference to Hunter and Csikszentmihalyi’s (2003) concept of *chronic interest*. Hunter and Csikszentmihalyi describe individual differences in engagement with experience as a dimension of chronic interest. They propose that while interest is a building block for the development of skills that afford opportunities for participation in enjoyable and challenging activities, failure to develop such skills and preferences may lead to broad-ranging boredom in adolescence. Using experience sampling techniques (ESM; see Csikszentmihalyi and Larson 1987), they identified contrasting groups of adolescents ‘at one end are youth who experience stimulation, enthusiasm, and pleasure, and on the other, adolescents in a disconnected state of apathy’ (p. 30). Differences between these groups were observed on measures of global self-esteem, internal locus of control and sense of hope into the future. These composite broad orientations to experience were interpreted to mean that chronic interest was indicative of psychological well-being. The downside is that numbers of adolescents demonstrate a pattern of chronic boredom which is not conducive to psychological well-being.



Hunter and Csikszentmihalyi's (2003) approach to understanding the function of interest in positive development focuses on the individual adolescent's sense of agency rather than the specific object of interest. Where Flum and Kaplan (2006) have emphasized exploration, Hunter and Csikszentmihalyi (2003) emphasize interest as 'the tool self-organizing creatures use to direct attention to select information from the environment' (p. 28).

As this selection of contemporary perspectives on adolescent development illustrates, interest is a key component of the personal schemas through which adolescents understand themselves and their immediate experience. Interest is growth promoting because a positive orientation to new experience supports the dynamic processes implicit in activation of existing interest schemas, exploration and knowledge seeking and the elaboration of more enduring interest schemas.

### ***3.4 Well-Being, Positive Affect and Adult Life***

However, interest is not just a centrepiece of experience in children and adolescents. While most of the contemporary research on interest has been focused at this level increasingly, researchers are considering the role of interest in development across the adult years. Two research directions are considered here: the role of interest in patterns of lifelong learning and the place of interest in the positive affect associated with life satisfaction in the elderly.

*Lifelong Learning.* Sustained interest supports the development of the type of commitment to learning and skill development that extends into self-directed and lifelong learning. One important manifestation of this is the sense of purpose that prompts adults to re-engage with formal education. Typically this requires participation as a minority within a cohort of students many years their junior. All major tertiary institutions have adults returning to study, and this trend is accompanied by personal stories indicating that return to study was motivated by a desire to expand their knowledge and understanding. Sometimes this is described as a long-term interest, and now they have the opportunity. Others describe the prompt for their return to study as an interest that has been triggered more recently.

*Non-traditional Students.* In light of these personal stories, a number of researchers have investigated the role of interest in groups of students referred to as 'non-traditional' undergraduates. Many of them have been away from study for a number of years and have made a conscious decision to return to study. This decision is often associated with considerable personal and financial cost, and these students have different patterns of motivation for their study. Bye et al. (2007) investigated relations between intrinsic and extrinsic motivation in a diverse cross-university sample of tertiary students. The sample included both traditional (up to 20 years of age) and non-traditional students (28 years of age or older). Contrary to expectations, there was no difference between the groups on the measure of extrinsic motivation. The researchers suggest that this was not surprising considering that the

typical structure of undergraduate examination and assessment requires some focus on achieving good grades. On the other hand, the non-traditional students showed significantly higher levels of intrinsic motivation than the younger cohort of undergraduate students.

An important aim of this research on motivation in non-traditional students was to extend understanding of ‘the emotional mechanisms underlying the affect-cognition-motivation triangle for older adult students’ (Bye, et al. 2007, p.146). Drawing on links between interest and curiosity as defined in the character strength and virtues defined by Peterson and Seligman (2004), Fredrickson’s (2001) broaden-and-build theory of positive emotion and by the findings of interest researchers, Bye et al. (2007) explored the contribution of interest to the relation between intrinsic motivation and positive affect. Non-traditional students showed a strong relation between intrinsic motivation and positive affect, while the same relation for the traditional undergraduates was weak. When non-traditional students reported higher intrinsic motivation, they also were likely to report higher positive affect. In addition, when both intrinsic motivation and interest were assessed as predictors of positive affect, interest was responsible for the largest predictive contribution. For these adults returning to study, interest was an important component of what Bye et al. referred to as the affect-cognition-motivation triangle, self-organized ‘study’ schemas built around intrinsic motivation, interest and positive affect.

### ***3.5 Positive Affect and Life Satisfaction***

A common finding of studies of psychological well-being in elderly adults is that there is a positive relation between positive affect, well-being and life satisfaction (Pinquart and Sorensen 2009). However, this generalization masks important differences in experiences collectively referred to as positive affect. A key critique of the studies of emotions in educational settings has pointed to use of the broad groupings of positive and negative affect rather than considering distinct affective experiences (see, e.g. Pekrun et al. 2002). The same tendency in the ageing and well-being literature has been documented by Consedine and colleagues (Consedine 2008; Consedine et al. 2004). Associations between positive affect and life satisfaction or between positive affect and psychological well-being in older members of the community are well-established (Pinquart and Sorensen 2009). Looking to theories distinguishing the functioning of discrete emotions and the development of emotion schema that regulates behaviour, Consedine et al. (2004) suggest that understanding well-being in later life requires investigation of the impact of discrete emotions within positive affect. This points to potential diversity in the experiences underpinning judgments of general well-being and life satisfaction. In particular, Consedine and colleagues focused on separating the functional properties of joy and interest in the life patterns of elderly people.

As has been seen in the findings reported from earlier life stages, interest focuses attention and engages the person in exploratory behaviour and knowledge seeking. On the other hand, enjoyment and joy are associated with feelings of vigour, with familiar events and with calming pleasant experiences. The studies referred to earlier (e.g. Reeve 1989; Silvia 2006) distinguished these emotions through their separate functional properties and focused on immediate experience; participants rated how they felt while viewing specific stimuli, anagrams or works of art. Consedine et al. (2004) used the functional properties of interest and enjoyment to predict that specific life patterns, such as education, religiosity and stress, will have different relations with both interest and joy measured as general personal dispositions. In particular, Izard's Differential Emotions Scale was used as a trait-type measure asking participants to report 'how much each emotion characterizes their day-to-day experience' (p. 55).

Although functionally distinct, interest and joy can occur together. After allowing for this commonality, as predicted, higher educational attainment was associated with higher interest. The index representing stress across a range of life areas was also positively associated with interest. Hence, interest may be a key component in the type of lifestyle that requires the individual to deal with the stress that accompanies goals of seeking knowledge and understanding of complexities and uncertainties in their social and physical environment. Although dealing with immediate experience, Silvia's (2008) proposition that complexity and competence appraisals are central to feelings of interest is consistent with the lifestyle patterns identified by Consedine et al. (2004). On the other hand, joy was located with familiar, calm and pleasant experience. Higher scores for general feelings of joy were associated with fewer health symptoms indicating more positive physical health status. In addition, joy was positively associated with religiosity. Consedine et al. (2004) suggest that this pattern is consistent with a lifestyle with priorities of 'maximizing pleasurable experiences and minimizing unpleasant experiences' (p. 60). In addition to the separate functional properties of joy and interest in relation to psychological well-being in the elderly, both emotional dispositions were found to be positively associated with social support. As Consedine (2008; Consedine et al. 2004) points out, our understanding of how discrete emotions contribute to health and well-being has been neglected in the concentration of research into global positive and negative affect on the health and well-being of the elderly. Increasing attention to the role of discrete emotions, such as interest, has the potential to identify the diversity of goals and lifestyle combinations that are associated with positive outcomes in the elderly across a range of cultures and contexts.

In short, research evidence sampled from across the lifespan is consistent with the proposal that interest is an important ingredient in the experiences that promote positive growth and well-being. The early experiences of interest and exploration built around interactions with a primary caregiver, the exploratory orientations and developing individual interests of adolescents and the challenge-seeking interest schemas identified in the elderly point to the diverse combinations of psychological processes through which interest can influence behaviour.

## 4 Conclusion

This chapter started with the assertion that interest is an essential ingredient in the dynamic system of experience that contributes to psychological well-being at all life stages. To set the context for discussion of specific life stages, the varying associations between interest and related constructs of curiosity and enjoyment and ways that interest functions to regulate and guide behaviour were explored. It was argued that the expression of interest in an activity reflects a unique organization of experience that draws on both past and present. Interest, curiosity and exploratory behaviour are major factors in the development of schemas in infancy and early childhood that orient them towards the information seeking that is essential for later academic adjustment. Interest is also a key component of the personal schemas through which adolescents understand themselves and successfully confront developmental challenges. A similar picture emerges from current research into the aspects of adult life, namely, the motivation of adults returning to formal study and discrete affective processes relating to life satisfaction in the elderly.

Research evidence sampling a range of perspectives has been presented to explore how interest combines with other psychological processes to build schemas that promote positive development and psychological well-being. Whether the focus is infancy, adolescence, early adulthood or old age, through experience individuals accrue schemas that provide the basis for processing of new experience. Such schemas consist of complex combinations of cognitions and affect organized in ways that reflect the unique experience of each individual.

Our focus has been on positive development. We have not delved into the more negative sides of interest (and curiosity) that describe conditions where interest is manifested as a preoccupation or morbid interest and is indicative of unhealthy mental states. These are the subject for a different brief. However, the caveat needs to be stated that all schemas having interest as part of the mix are not necessarily positive.

In summary, the contribution of interest to psychological well-being arises from its character as motivating affective experience and from its functional significance for the onset and maintenance of information-seeking knowledge and actions. From the earliest processing of experience in infancy through to the activities, thoughts and feelings that occupy the elderly, when we examine the psychological make-up of productive growth-promoting schemas, interest is one of the key ingredients.

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# Chapter 14

## From Burnout to Engagement During Transition from School to Work

Katariina Salmela-Aro

### 1 Introduction

A positive approach to educational and career adaptation is strongly emerging, focusing on school and work engagement. This research reflects the recent trend emphasising the positive aspects of students and employees' experienced success, well-being and health. Educational transitions and the transition from school to working life present substantial possibilities and challenges for youth in modern societies (Schoon and Silbereisen 2009). This chapter focuses on the role and change of burnout and engagement during these critical transitions and presents recent findings on how young people navigate their educational transitions from comprehensive school to upper-secondary education and further education, and finally to work life. The concept of school engagement has received heightened research attention in the last decade as an approach to positive development and related positive psychology.

### 2 Burnout and Engagement at School

Although burnout and engagement are generally considered primarily work-related concepts, they are also applicable in the school context: school is a setting in which students work (Fredricks et al. 2004). Although students are not employed as such, from a psychological perspective, their core activities at school could be classified

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as 'work'; they attend classes and carry out assignments in order to pass exams and acquire a qualification (Salmela-Aro et al. 2009b).

School burnout is a multidimensional concept comprising three dimensions: exhaustion due to school demands, a cynical and detached attitude towards the school and feelings of inadequacy as a student (Salmela-Aro et al. 2009b). Exhaustion refers to feelings of strain, particularly chronic fatigue resulting from overtaxing school work. Cynicism manifests an indifferent or distal attitude towards school work in general, a loss of one's interest in schoolwork and not seeing it as meaningful. Inadequacy refers to a diminished sense of competence, achievement and accomplishment as a student. A scale to measure multidimensional school burnout was introduced by Salmela-Aro et al. (2009b). Parker and Salmela-Aro (2011) recently explored the development of multidimensional burnout. The results suggested by Taris et al. (2005) framework fitted the data. Parameters of this model suggested that school burnout is moderately to strongly consistent over time. However, both cynicism and exhaustion predicted later on feelings of inadequacy.

Schoolwork engagement, in turn, can be defined as a positive, fulfilling state of mind characterised by vigour and energy, dedication and absorption (Salmela-Aro and Upadyaya 2012). Vigour implies high levels of energy and mental resilience while working and a willingness to invest effort in the schoolwork. Dedication refers to being strongly involved in the school and experiencing a sense of significance, enthusiasm, inspiration, pride and challenge. Finally, absorption means being fully concentrated and happily engrossed in one's school work, whereby time passes quickly. In line with the original theory of work engagement (Schaufeli and Bakker 2004), school-related energy could be defined as positive feelings about schoolwork characterised by high levels of energy and mental resilience while studying and the willingness to invest effort. School-related dedication, in turn, is manifested in a positive attitude towards schoolwork in general, an interest in the academic work and seeing it as meaningful, and strong involvement in studying together with a sense of significance, enthusiasm, inspiration, pride and challenge. Finally, school-related absorption refers to feelings of competence as well as successful achievement and accomplishment both in terms of schoolwork and at school in general. In line with the demands-resources model (see below), the high level of study and personal resources would be related to schoolwork engagement.

School provides an important developmental context for adolescents (Eccles 2004), whose perceptions and experiences appear to be associated with various adjustment outcomes. In the context of school burnout and engagement, adolescents' well-being and disengagement at school are likely to change during critical educational transitions. In this section, evidence is presented of such changes during the transition from comprehensive school to upper-secondary or vocational education.



### 3 Educational Track and School Burnout

Finnish children start their education at kindergarten during the year of their sixth birthday. One year later, at the age of seven, they move to comprehensive school, where they continue for the next 9 years. All Finnish school children receive a similar basic education up until the age of 16. After comprehensive school, the educational trajectories begin to diverge: about 55% of all adolescents enter upper-secondary schools, and 37% choose vocational schools, 2% stay on for a voluntary tenth year, and 6% exit formal education. Average academic achievement in the ninth year of comprehensive school is the minimum requirement for admission to upper-secondary school; matriculation, in turn, is a bridge to further education and, most likely, higher education. Secondary vocational education serves as a route to working life in academically less demanding occupations, and also to tertiary-level education, most likely in vocational institutes. Thus, educational choices at the end of comprehensive school set the students on either an academic or a vocational track. Girls are more likely to matriculate and enter universities than boys. Education in all levels in Finland is state-provided and tuition is free.

The transition from comprehensive school to either an academic or a vocational track is the key change during adolescence in Finland and many other European educational systems. Tracking determines the quality and kinds of learning opportunities each student receive (Eccles 2004). It also determines peer exposure and, thus, to a certain degree, the nature of the social relationships young people forms in school. Comprehensive schools are frequently referred to as ‘neighbourhood’ schools, the students spending most of the school day with one set of peers and teachers, whereas upper-secondary schools are in most cases larger than comprehensive schools.

The stage-environment fit theory (Eccles and Midgley 1989) can be applied to school transitions. According to the theory, positive outcomes will result if changes in school opportunities are aligned with changes in adolescents’ needs, whereas unfavourable outcomes will result if there is no alignment. Thus, students should be more motivated to learn if the material they are asked to master matches their current levels of competence and interest. There is substantial evidence of a decline in academic motivation, attachment to school and academic achievement during the school transition in early adolescence (cf. transition to middle school or junior high school). However, little is known about what happens during the transition in late adolescence, from comprehensive school to upper-secondary or vocational school, for example. The nature of the respective environments of the academic and vocational tracks might have significance in terms of how the adolescent thinks and feels at school. Eccles and Midgley (1989) suggest that positive developmental changes may result if schools do provide developmentally appropriate educational environments for adolescents and that this could lead to well-being.

Upper-secondary schools are typically larger and more bureaucratic than lower-secondary schools; also, the former provide fewer opportunities for students and

teachers to get to know each other. This situation is reflected in distrust between teachers and students, as well as in low attachment to common goals and values. There is little opportunity for students to form mentor-like relationships with a non-familiar adult. Such environments are likely to further undermine the motivation and involvement, especially among those who are not doing particularly well academically. Moreover, there is increased pressure to succeed and a heavier work load on the academic track at the upper-secondary level, which could well lead to increased levels of exhaustion. This transition has also been associated with a drop in grades, an increase in disciplinary problems and dropout, and poorer attendance. These signs of disaffection could be early signs of impending school failure, dropout and risky behaviours later on (Finn 1989) and could be manifested in school-related burnout in terms of an increased level of cynicism and reduced efficacy among those on the academic track. On the other hand, the vocational track focuses more on hands-on and practical activities. In terms of school-related burnout, this might lead to a decreased level of cynicism and an increase in efficacy, particularly among students who were not among the high achievers at comprehensive school. Previous research has also shown that many young people seem to show a decrease in school engagement when they move to senior high school.

The results in the school context reported in this chapter are based on FinEdu longitudinal study in which young people were followed for several years during the critical period of educational transitions. At the beginning of the study, the participants were in comprehensive school in their ninth school year (median age = 15 years), facing the transition to post-comprehensive education. All the 9th-year students in a medium-sized town (population 88,000) in Central Finland were aimed to be recruited for the study ( $N = 954$ ) and were asked to participate in all five stages. The first two measurements were carried out before the transition to upper-secondary (academic track) or vocational (vocational track) education: one at the beginning of the 9th grade, which is the final year of comprehensive school (time 1), and the other at the end of that school year (time 2). The next two measurements were carried out after the transition to post-comprehensive schooling: the first one, 6 months after the transition (time 3) and the second one, a year later (time 4). Finally, the last measurement was carried out 3 years later. The retention rate was between 70 and 86%.

Results on the FinEdu study reported by Salmela-Aro et al. (2008) showed that adolescents on a vocational track experience a higher initial level of cynicism than their counterparts on an academic track. However, cynicism among the former was higher before the transition, but then it decreased. There was evidence that the level of cynicism among adolescents on an academic track increased over time. In terms of the school-stage-environment fit theory (Eccles 2004), it could be assumed that the transition to vocational education would promote well-being in particular among those who struggle in a more academic context, whereas the challenges of an academic education might lead to school burnout. Overall, the findings concerning adolescents' cynicism during the school transition to academic track tend to support the stage-environment fit theory (Eccles and Midgley 1989). As mentioned above, students should be more motivated to learn if the material

is appropriate, given their current competence and interests. The interplay between the characteristics of the school environment and student competences and interests during an educational transition is more important than the transition per se in terms of how adolescents think and feel about school.

Adolescents on a vocational track were found to experience higher initial levels of inadequacy than their counterparts on an academic track (Salmela-Aro et al. 2008). However, their sense of inadequacy decreased over time, whereas among those on an academic track, it initially decreased and then increased again after the transition to upper-secondary school. A further explanation complementing the stage-environment fit theory with regard to the academic track is the ‘big-fish-in-a-little-pond’ effect (Marsh et al. 2007): when students move to upper-secondary school, their reference group changes in that the peers with whom they compare themselves are generally on a higher level in terms of academic achievement and competences than their peers in comprehensive school. Moreover, adolescents on an academic track seemed to experience a higher initial overall level of exhaustion than those on a vocational track.

It was further found that girls on an academic track experienced a decreased sense of inadequacy before the transition, but it increased at upper-secondary school, whereas among the boys, there was a marginally significant increase over time (Salmela-Aro et al. 2008; Salmela-Aro & Tynkkynen 2012). These results show evidence of gendered trajectories in school burnout from comprehensive school to both academic and vocational tracks. Almost 20% of all girls on an academic track experienced school burnout (Salmela-Aro et al. 2008; Salmela-Aro & Tynkkynen 2012). Account should be taken of the practical implications of these findings. There is clearly a need to offer more support to students on an academic track in order to prevent school burnout which could lead to dropout from school later on. This is the topic I address next. It would seem to be important to identify students at risk of school burnout on the one hand, and on the other to seek to change the school context in such a way that it would lead to engagement in terms of school-related vigour, dedication and absorption.

### ***3.1 Demands-Resources Model in the School Context***

The demands-resources model (Bakker and Demerouti 2007) as a new framework was recently tested in the school context using four waves of the FinEdu longitudinal data including the associations between adolescents’ school-related engagement and burnout symptoms (Salmela-Aro et al. 2009a). Supporting the demands-resources model, the results analysed by structural equation modelling showed that high level of study demands at the last year of comprehensive school was related to school burnout 1 year later, while school resources were related to schoolwork engagement. In addition, personal resources at the last year of comprehensive school were positively related to schoolwork engagement and negatively to burnout. Second, engagement and burnout were stable during secondary education

and negatively associated between them. The cross-lagged paths between them revealed that burnout predicted negatively schoolwork engagement 1 year later rather than vice versa. Finally, engagement towards schoolwork was positively related to life satisfaction 2 years later, while burnout was positively related to depressive symptoms and negatively to life satisfaction. Engagement with schoolwork mediated the relationship between study resources and life satisfaction, while school burnout mediated the relationship between study demands and mental health outcomes. In line with the demands-resources model (Bakker and Demerouti 2007), high level of study demands and low level of personal resources were related to school burnout.

The model suggests that there are two processes in school: (a) an effort-driven energetic process of overtaxing and wearing out in which high study demands exhaust student's energy and lead to diminished mental health such as depression, and (b) a motivational process in which the availability of resources allows dealing effectively with high study demands, leads to engagement and fosters life satisfaction. The results support the two processes of the demands-resources model (Demerouti et al. 2001), that is, an effort-driven energetic process of overtaxing and wearing out and a motivational process in which the availability of resources counteracts the high study demands and leads to engagement and life satisfaction. Overall, a particularly strong relationship existed between study demands and burnout and burnout and depressive symptoms. In contrast, the paths from study resources to engagement, and engagement and life satisfaction were weaker. Similarly, the cross-lagged paths from study resources to burnout and from burnout to life satisfaction were much weaker. The cross-lagged paths to engagement from demands and from engagement to depressive symptoms were not even significant. This agrees with the two processes of energetic effort-related process: study demands to burnout and later on to depressive symptoms and motivation process from study resources to engagement and later on to satisfaction with life.

#### **4 Transition From Upper-Secondary School to University**

Transition from upper-secondary school to tertiary education is a critical and challenging period. I next focus on the role of motivation during upper-secondary school to later school engagement and burnout and the role of engagement and burnout in later educational transitions (Vasalampi et al. 2009). According to the lifespan model of motivation (Salmela-Aro 2009), the demands, challenges and opportunities young people encounter at a particular educational stage and the related life transitions channel their motivation and the goals they construct. Further, goals significantly affect the ways in which they make their educational and career choices (Baltes 1997); young people regulate their career development by co-regulation with other people; people compensate for failure by adjusting their motivation and related goals on the basis of previous developmental transitions and

life events, and such adjustment has career-related consequences in terms of engagement and burnout (Salmela-Aro 2009).

According to Sheldon and his colleagues (e.g. Sheldon, and Houser-Marko 2001), goals pursued for internal reasons are likely to receive sustained effort over time, be more attainable, and consequently be more satisfying, and this implies many positive outcomes. By using the FinEdu longitudinal study, we examined the role of intrinsic motivation in later goal effort, progress and school engagement and burnout. The role of burnout and engagement in later educational tracks was also assessed (Vasalampi et al. 2009). Results of the FinEdu showed that students whose achievement-related goal matched their implicit values and interests invested a lot of effort in working towards it and also showed a high level of progress during upper-secondary school. These results are consistent with those of previous studies showing that individuals are better at achieving self-concordant goals because they put more sustained effort into it (e.g. Sheldon and Houser-Marko 2001).

In terms of engagement, progress in the achievement-related goal was related to a high level of engagement at the end of upper-secondary school among both boys and girls. This could be attributed to the fact that self-concordance enables individuals to put effort into and thereby increase the probability of attainment, which in turn increases well-being (Deci and Ryan 1985). Progress in achievement-related goals was related to a low level of school burnout among the girls but did not contribute to burnout among the boys. This may have been due to the fact that girls are typically more motivated in terms of achieving their education-related goals and attribute greater importance to academic achievement than boys (Murberg and Bru 2004) but fear academic failure more than boys, and this tendency may lead to a high level of burnout in the case of non-attainment (Sheldon and Houser-Marko 2001). Another reason for the result may have been that girls experience internalising problems, such as burnout, more often than boys, whereas boys are more likely to exhibit externalising problems.

Overall, the findings contribute to the previous research in two ways. Self-concordance seems to have an impact not only on engagement but also on young people's educational trajectories, and secondly, the associations between self-concordance, engagement and educational trajectories span several years. School engagement among girls predicted success in the transition after upper-secondary school, whereas burnout at upper-secondary school predicted delay in their studies but only among girls. These results provide evidence of a cumulative path from academic motivation to later educational trajectories that complements earlier reports of an accumulating cycle between motivation and performance related to educational goals (Sheldon and Houser-Marko 2001). This is significant in terms of finding instruments to help adolescents to deal with this challenging transition: an increase in adjustment at upper-secondary school may be of considerable help in facilitating rapid school transition.

However, engagement at upper-secondary school did not predict success in the subsequent educational transition among the boys. One explanation for this may have been that post-secondary-school transition is more challenging for boys than girls in the Finnish school system: more Finnish girls than boys matriculate from

upper-secondary schools and proceed to university. Finally, burnout predicted a low level of aspiration among the girls, but not among the boys. This is significant in showing the detrimental effect of school burnout and is consistent with earlier findings. For example, Nurmi and Salmela-Aro (2002) reported that the more depressive symptoms people reported, the more pessimistically they rated their goal accomplishment, progress, and their ability to achieve future goals.

It appears that when adolescents pursue their achievement-related goal for internal reasons, they also invest effort into achieving it, which is evident in a high level of progress. Goal progress, in turn, was related to a high level of engagement in upper-secondary school, which predicted success in the subsequent educational transition among the girls. In contrast, slow progress was related to school burnout among the girls, which was subsequently reflected in delayed studies and low educational aspirations. The key factor in successful goal pursuit among adolescents is the ability to select goals to which they can relate well. The results suggest that those with strong intrinsic motivation are more likely to attain their goals and thus to strengthen their school engagement. Strong engagement, in turn, predicted a successful educational trajectory. A high level of adjustment among girls in upper-secondary school helps them later on dealing with the transition to further education. Strengthening school engagement and supporting those suffering from burnout would also help them in their later educational trajectories and transition to work life.

## 5 Transition to Tertiary Education and Gap Year

Next, the effects of a ‘gap year’ on burnout and engagement were examined by using the FinEdu data. Gap year is a year during which students take time off and do something other than schooling, such as work. The year out is most commonly taken after secondary school and before starting university. Gap year might be beneficial as a moratorium period (e.g. benefits of a break from achievement pressures) (Martin 2010). In order to provide a preliminary exploration into this question, the effect of a moratorium period on burnout and engagement was examined. Educational moratorium is defined as an extended period of time in which young people take a break from their long-term educational/career trajectories, typically entering the labour force or other achievement domain (e.g. military service) after completing high school and before entering university. Despite public interest and the growing tendency for young people to undertake such a break, little empirical evidence exists on which to make policy recommendations (Heath 2007). The benefits of a ‘gap year’ are thus assumed to provide young adults with an important time of reflection that frees them from the achievement pressures they have experienced in high school and before the reapplication of these pressures upon entering university.

The hypothesis that a moratorium period provides a break from achievement pressures in which young people can consider their long-term plans is intuitively appealing and in part the basis upon which such a period is promoted (e.g. Heath

2007). Indeed, empirical research indicates that students do experience high levels of stress and burnout in both school and university. As such, the advantage of a break from these high stress environments to regain motivation seems obvious. Likewise, the idea of taking time for oneself to carefully consider future plans and resolve uncertainty seems self-evident. It is important to note, however, that for many young people, an educational moratorium period is not a break from achievement pressures completely, where many young people entering into the labour market or other achievement domains while awaiting re-entry into their educational trajectories. Further, being in such an achievement context is central to the experience and skills development suggested to occur during this time (Heath 2007). As such, young people may not be gaining the break from achievement pressures which is the most typical reason young people give for embarking on a moratorium period. It is for this reason that the focus of our research was on youth on an educational break who are currently in some form of full-time achievement context.

Our results (Parker et al. 2011) showed that moratorium group displayed lower burnout and high engagement in their new academic achievement setting. This suggests that a 'gap year' is associated with a break from academic achievement pressures, particularly in relation to burnout. Importantly, the results suggest that this effect is associated with well-being measures, such as engagement, that are achievement-domain-specific (e.g. achievement-related burnout and engagement). While these results supported group differences in achievement-domain-specific well-being among those in a gap year and those who entered university (e.g. achievement-related burnout and engagement), for the domain-general (i.e. not focused on achievement domains) depression and life satisfaction variables, no group difference was observed. This is important evidence of the validity of the results as those in a moratorium period are taking a break from achievement pressures but not from achievement pressure associated with all life domains (e.g. family and peer relationships).

The evidence did not, however, support the assumption that an educational break helps resolve uncertainties about long-term educational and career goals. Indeed, individuals in the moratorium group had moderately lower levels of commitment to their long-term educational and career goals and reported slightly lower expectations about their ability to successfully obtain their goals. Taken together, these results suggest that a break from education is associated with a break from achievement pressure but that this break may not be associated with a resolution of educational career uncertainty. Thus, while being in a period of moratorium was beneficial in terms of well-being, results for goal pursuit suggest that it may not be without costs.

## 6 From University to Work

Finally, I turn to the transition from university to work life. In line with the demands-resources model, the ways in which individuals approach and respond to various challenges in their lives can influence work engagement. Personal



and social competence may provide a basis for success and related engagement at work. Despite the number of studies on work-related competence, however, little research has been carried out on the extent to which people's social competence and behaviour in social situations contribute to early-career work burnout and engagement. One might assume that social avoidance and withdrawal are indicative of work burnout and that social optimism and competence and related strategies are indicative of work engagement. Consequently, the present longitudinal study spanning 18 years investigated the prospective relationships between the achievement and social strategies individuals showed at the university and their levels of early-career work burnout and engagement 10–18 years later (Salmela-Aro et al. 2011).

This study was part of the ongoing Helsinki Longitudinal Student Study (HELSS). The participants were 294 (77 men, 215 women), 18–25 years old ( $M = 20.61$ ,  $SD = 1.80$ ), and are undergraduates studying various subjects (biology, geography, economics, English, Finnish, French, history, psychology and sociology) at the University of Helsinki at the first study year. Then the participants were measured at six time points afterwards: three times during their university studies and three times during their early career. These times are during their first, third and fifth study year, 10, 14 and 18 years after measurement time 1 in working life. On the first three measurement occasions, the participants filled in the achievement and social strategy questionnaire (SAQ) (Rosenberg et al. 1995) and gave some background information. On the last three occasions, those who were in working life filled in the work-burnout questionnaire, and on the last two occasions, they filled in the work-engagement questionnaire.

Our research showed that optimistic and task-focused academic strategies (Salmela-Aro et al. 2009c) contribute to high work engagement and low burnout. The higher the initial level of, and increase in, optimism during university studies, the lower was work burnout 10–15 years later and higher the initial level of work engagement in early career. In turn, the higher the level of task-avoidance achievement strategy during university studies, the lower was the initial level of work engagement in the early career. In terms of social strategies, the results showed that a high level of and an increase in functional social strategies at university predicted high levels of work engagement 10 years later at the start of working life. Similarly, a low level of functional social strategies at university contributed to high levels of and an increase in burnout 10 years later. These results suggest that the ways in which people deal with social situations strongly affect how well they cope with the challenges of working life. In addition, functional achievement strategies, such as optimistic and task-focused academic strategies (Salmela-Aro et al. 2009c), contribute to high levels of work engagement and low levels of burnout. The present longitudinal study adds to this understanding in showing that both achievement and social strategies contribute to well-being at work.

There are several mechanisms through which achievement and social strategies may affect work-related engagement during the early career. First, as mentioned above, the demands-resources model (Bakker and Demerouti 2007) assumes two processes (Demerouti et al. 2001): an effort-driven energetic process that is overtaxing and exhausting, in which high demands sap energy and lead to burnout,



and a motivational process in which the availability of resources to deal effectively with high demands leads to engagement and fosters satisfaction; a key issue of personal resources, such as social competence, is that they facilitate goal attainment in the face of adversity. Resources translate into work engagement. Secondly, those who use optimistic strategies, compared to those adopting avoidance strategies, are active in dealing with the social challenges and demands they face in their work, which in turn contributes to career success, as evidenced in career-related engagement and a lack of burnout symptoms. Thirdly, optimistic strategies increase self-efficacy beliefs, which then lead to persistence in the face of obstacles and high performance in the career domain. Finally, according to the broaden-and-build theory, the presence of positive emotions triggers an upward spiral towards broad-minded coping, which in turn leads to more positive affect. In the context of our study, this would mean that resources (social optimism) and related positive emotions would build up enduring work engagement.

Our findings thus highlight the potential significance of the achievement and social strategies adopted at the university for later success at work. They also make an empirical contribution to developmental theory, highlighting the importance of peer relationships and social skills for later success in life. The right choice of social relationships at university may be significant in terms of building close interpersonal relations and social support, whereas the ability to interact socially with unselected people, including co-workers and supervisors, may be more important for work success in later life.

## 7 Discussion

A positive approach to educational and career adaptation is strongly emerging, focusing on school and work engagement. This research reflects the recent trend emphasising the positive aspects of students' and employees' experienced success, well-being and health. This chapter focused on engagement and burnout during critical educational transitions, transition from comprehensive school to further education and from upper-secondary school to tertiary education, as well as from university to working life. Engagement was defined as vigour, dedication and absorption towards school or work life. School- and work-related maladjustment were conceptualised in terms of burnout, which comprises three dimensions: exhaustion due to school or work demands, a cynical and detached attitude towards school or work, and feelings of inadequacy as a student or a worker (Salmela-Aro et al. 2009a). It seems that both motivational factors and transitions play a role in burnout and engagement. The transition from comprehensive school to the next stage of education is a significant context for change in burnout: proceeding to an academic track seems to increase it, whereas moving to a vocational track seems to decrease it. Therefore, there seems to be a need to develop guidance systems for young people facing the transition from comprehensive school to an academic or vocational career path in today's world.

In light of the demands-resources framework, proceeding to the academic track increases burnout, while moving to a vocational track decreases burnout. In light of the demands-resources model, this finding maybe attributed to the fact that academic track is more demanding; adolescents need to invest more effort in order to deal with these demands, which in turn depletes their energy resources and leads to burnout. Moreover, intrinsic motivation and goal progress appear to be related to a high level of engagement in upper-secondary school, which, among girls, predicted success in the subsequent educational transition. According to this study, the key factor in successful goal pursuit among adolescents is the ability to select internal career goals. A higher level of school engagement, in turn, seems to predict a successful educational trajectory. Increasing engagement and supporting those suffering from burnout would also help them in their later educational trajectories and transition to working life. Moreover, the results showed the possible beneficial effect of a gap year in terms of burnout and engagement.

In this connection, a recently developed one-week intervention programme entitled 'Towards Working Life' has been found effective in promoting engagement and reducing school burnout during this transition (Salmela-Aro et al. 2010). The intervention applied active learning processes to increase participants' career choice preparedness, which is a cognitive-motivational construct comprising career choice self-efficacy and preparation for setbacks. Career choice self-efficacy refers to the degree of confidence in one's ability to successfully perform essential career choice activities, such as defining personal career interests, seeking information about interesting educational pathways and constructing concrete and realistic plans for career advancement. Specific self-efficacies have been established as motivational components and determinants of behavioural intention predicting future behaviour. Moreover, providing students with the ability to anticipate setbacks and the strategies to cope with them maintains their motivation to perform difficult behaviours in the face of setbacks. The results of the intervention showed that increasing preparedness decreased burnout and increased engagement.

In terms of the transition from university to working life, it appears that the motivational strategies young people adopt at the university predict work engagement and burnout during their early career: the more optimistic and task-focused their behaviour was and the greater the increase in these optimistic strategies at the university, the higher the level of work engagement and the lower the level of burnout they reported. Conversely, the more pessimistic they were and the more task avoidance they showed at the university, the higher their level of burnout and the lower their level of engagement later on. The contribution of motivational strategies over longer time periods and their consequences in terms of working life and career adaptation are important. The findings are significant in showing that optimism is a buffer against burnout, possibly because it strengthens the individual's self-belief and supports active coping. The future challenge is to find effective ways in which to promote student optimism at the university.

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# Chapter 15

## A Comparative Study of Resilience in Greece and Cyprus: The Effects of Negative Life Events, Self-Efficacy, and Social Support on Mental Health

Sophie Leontopoulou

### 1 Introduction

Resilience is the outcome of a complex process involving factors and mechanisms that aid people overcome adversity and risk for maladaptation (Masten 2001). Such factors can be construed as positive personal, family, and/or environmental psychosocial characteristics of the individual, which are activated in the face of negative life circumstances. Process models of resilience have been developed to explain how social and psychological sources of stress and psychosocial resources of individuals combine to influence one's mental and physical health and adaptation in an interactive manner (Avison and Gotlib 1994). A wealth of studies attempted to decipher the complex relations between the above three elements, in an effort to map pathways which lead people to overcome stress and adversity and to exhibit mental health and positive adaptation with the aid of psychosocial resources (Luthar 2006). The overall aim of the present study was to map and compare the intricate relations between personal and social characteristics of children at the verge of adolescence that affect the development of resilience under the pressure of negative life events in Greece and Cyprus. The perspective adopted was that of positive psychology, with emphasis on positive aspects of human development such as capabilities and assets that lead to good adaptation and ultimately enhance the quality of life of individuals in every stage of their lives.

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### ***1.1 Criteria for the Identification of Resilience: Adversity and Adaptation***

In the process approach to resilience, one of the main criteria for the identification of resilience involves the existence of *adversity* and/or risk. Within the resilience paradigm, adversity has been conceptualized in a number of ways, including interpersonal, intrapersonal, and proximal difficulties such as anxiety and stress, negative life events, trauma, abuse and neglect, parental psychopathology, and poverty (Luthar 2006; Masten et al. 1999). The deleterious effects of stress on children and adolescents' psychosocial and physical health and their overall developmental trajectory are well documented in the literature (Lantz et al. 2005). Perception and incidence of stressful negative life events has traditionally been used to index both adult and children's levels of stress. Stressful events can be actual or hypothetical (Nielsen et al. 2008). Fewer studies have attempted to measure hypothetical, in addition to actual negative life events in children (Anderson et al. 2005; Leontopoulou et al. 2011; Yamamoto and Byrnes 1987). This study aimed to explore possible differences in resilience depending on the nature of life events, that is, actual or hypothetical, in an effort to further our understanding on the ways that life events affect children's adaptation.

The second criterion for the identification of resilience is *adaptation* under adversity. Luthar (2006) maintained that positive adaptation can be understood as "adaptation that is substantially better than would be expected given exposure to the risk circumstance being studied" (p. 742). Developmental psychopathology proposes that resilience should be understood as positive development of the organism and its systems under difficult situations (Masten 2001). This perspective moves away from a mental illness model of resilience, which traditionally measured adaptation as absence of psychopathology, toward a positive psychology perspective that emphasizes positive development (Seligman 2002). In this study, both of the above two approaches to adaptation are adopted. As a result, children's adaptation to negative life events was measured in two ways: as number of mental health problems—based on the premise that mental health problems cannot possibly denote happiness and are also corrosive of one's potential—and also as level of self-esteem.

*Self-esteem* refers to one's global appraisal of one's personal value, based on the scores one gives oneself in different roles and domains of life (Rogers 1981). "Positive self-esteem is not only seen as a basic feature of mental health, but also as a protective factor that contributes to better health and positive social behavior through its role as a buffer against the impact of negative influences. It is seen to actively promote healthy functioning as reflected in achievements, success, satisfaction, and the ability to cope with diseases like cancer and heart disease" (Mann et al. 2004, pp. 41–42). In the literature, self-esteem has been found to reduce the likelihood of youth becoming involved in problem behavior (DuBois and Tevendale 1999). High self-esteem has been found to protect against adaptational problems, especially when young people experience severe adversity in their lives (Gerard and Buehler 2004). Harter (1986) suggested that, under difficult situations,

the youth with high self-esteem tend to lessen the meaning of negative life events that happened to them or to selectively think of themselves as responsible for positive events that happened to them, but not responsible for negative events.

## 1.2 *The Role of Resources in Resilience*

The process approach to the study of resilience also suggests that a number of personal and environmental *resources* available to individuals affect the quality of their psychosocial adaptation under stress (Yates et al. 2003). Resources can mediate the effects of stress on adaptation, or to favor positive adaptation, independently of the level of adversity. Resources can also moderate the effects of stress. Resources can protect against maladaptation by being activated when the individual faces high levels of adversity; under conditions of low stress, resources do not affect adaptation (Luthar 2006). Personal resources can be cognitive (e.g., intelligence, self-efficacy), emotional (e.g., interaction with significant others, self-image), or behavioral (e.g., coping skills, prosocial behavior) in nature; in a similar manner, environmental resources can include distal and proximal variables, such as characteristics of the family (e.g., family communication, parenting style, support from family members), the school (e.g., classroom climate), the neighborhood (e.g., neighborhood patrols, youth clubs), or the society at large (e.g., effective institutions, financing of youth activities) (Gorman-Smith and Tolan 2003). This study examined the potential mediational role of children's self-efficacy as a personal resource, along with an environmental resource, such as family support.

According to Bandura et al. (1999), *self-efficacy* is a person's belief in their ability to bring about a particular outcome. Bandura described these beliefs as determinants of how people think, behave, and feel. Saltzman and Holahan (2002) in a prospective study of college students suggested that the link between social support and psychological adjustment is mediated by self-efficacy and by adaptive coping strategies. In a study of a normative school transition in USA, Seidman et al. (1994) found that negative changes in academic self-efficacy expectations were associated with declines in self-esteem, class preparation, and academic achievement in school. Career self-efficacy beliefs and career decision making have also been found to be influenced by family support.

Perceived *social support* has been reported to buffer the effects of stress on physical and psychological health cross-culturally (Calvete and Connor-Smith 2006). Newcomb (1997) reports that the level of social support that adolescents receive lowers not only the problems associated with substance abuse and emotional distress but also with family problems, interpersonal relationships, and health and psychosomatic symptoms. In a study of 347 young adolescents in the USA, social support was found to be directly linked to problem behavior and also indirectly linked to problem behavior via self-esteem (Moran and DuBois 2002).

In addition, perceived support from parents has been found to predict the academic goals youth set themselves at the onset of adolescence, while peer support is more important during middle adolescence (Wentzel 1998). Social support has been linked to school adjustment, both cross-sectionally and over time (Demaray et al. 2005). In a study of inner-city US youth high school students, Kenny et al. (2002) found that “the most successful seniors in terms of academic achievement and low levels of self-reported depressive symptoms described varied family structures, but all reported high levels of family support, low levels of family conflict, and strong support for educational attainment” (p. 175). Finally, Werner and Smith (1992) suggested that social support from an extended family member or significant other can enable youth who face severe difficulties to develop competence and resilience.

### ***1.3 A Cross-Cultural View of Resilience***

Although resilience is chiefly regarded as a process that transcends national borders (Masten 2001), cross-cultural differences can be expected in all three constituents of resilience, that is, adversity, resources, and adaptation. Calvete and Connor-Smith (2006) maintain that “culture is likely to influence the type and frequency of stressors experienced, the perceived stressfulness of negative events, the acceptability of various responses to stress, and the availability of coping resources” (p. 164). Kitayama and Markus (1999) suggest that variables with mental health implications may operate differently across cultures. Even in Mediterranean countries, such as Greece and Cyprus, which ascribe to a Western system of values, their position in the individualism-collectivism (as described by Triandis 1995) continuum may differ. In a study of resilience in 11 countries, culture was shown to provide meaning to a person living through adversity. Culture and context were also demonstrated to impact youth’s opportunities for survival in severe risk situations, such as war and violence (Ungar et al. 2007). Greece and Cyprus are two Mediterranean countries that share a common language, religion, values, history, and civilization at large. Nevertheless, Cyprus, after 1974, has an unresolved national problem with Turkey. This problem presumably creates an atmosphere of insecurity, imminent threat, and memories of a painful past, which could be potentially reflected on the number and type of negative life events perceived by Cypriot children, thus affecting the process of resilience for them. Due to the above-mentioned difference in recent events, but also in socioeconomic and political development and in cultural specifics, a cross-cultural comparison could reveal discrepancies in the way resilience was construed in each country.

Overall, there can be little disagreement that a culturally embedded view of resilience processes is needed in order to promote understanding of the different pathways through which resilience is manifested and in order to aid the development of targeted interventions at the family, school, and society levels.



### ***1.4 The Scope of the Present Study***

The overarching aim of the present study was to investigate and compare the intricate relations between personal (i.e., self-efficacy) and social (i.e., social support from the family) characteristics of children at the verge of adolescence that affect the development of resilience under the pressure of negative life events in Greece and Cyprus. The exploration of the influence of demographic factors and other characteristics of children, such as age, gender, socioeconomic status, and academic achievement, could also render an informed overall picture of resilience for the two countries combined, as well as for each country separately. On a methodological note, this study sought to further our understanding of the way different types of events (i.e., actual and hypothetical negative life events) lead to different adaptation outcomes in face of stress. In addition, a dual definition of resilience was used, involving both absence of psychopathology and presence of positive psychosocial adaptation as criteria of resilience.

Three sets of hypotheses were formulated. The first set pertained to the influence of demographic factors on the process of resilience. We expected that higher socioeconomic status and higher academic achievement would be associated with (a) lower levels of negative life events, (b) higher self-efficacy and social support, and (c) lower levels of mental health problems and higher self-esteem in the face of stress in the total sample and in the two subsamples of the study. We anticipated this pattern of relations to become more apparent with age, due to continuous influences of social and cognitive maturational processes on development and, also, to hold for both genders equally.

The second set of hypotheses regarded the effects of negative life events. The expectation was that there would be country differences with respect to the type of negative life events that children report, with Cypriots reporting more actual and hypothetical negative life events than Greeks. This would in turn affect both the resources and their adaptation to negative events, in that they would rely more heavily on their sense of self-efficacy and on their family support in order to overcome adversity. In addition, we anticipated to find differences with regard to the effects of hypothetical and actual negative life events children face on mental health problems and self-esteem. In particular, we hypothesized that actual negative life events would affect the relation between psychosocial resources and adaptation more profoundly, as compared to hypothesized negative life events.

Finally, it was hypothesized that self-efficacy and social support would mediate the relationship between stress (i.e., actual and hypothetical negative life events) and adaptation (i.e., mental health problems and self-esteem) in the total sample and in the two subsamples of the study (see Fig. 15.1 for a schematic representation of the predicted relations).

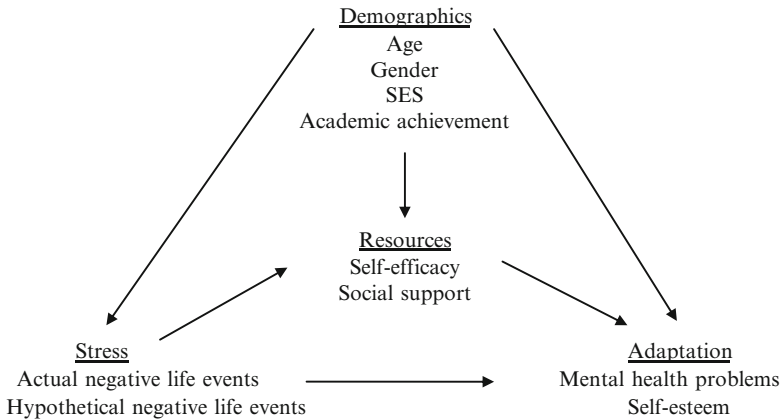


Fig. 15.1 Representation of the conceptual model tested in the study

## 2 Method

### 2.1 Sample Characteristics

A total of 248 students participated in this study. They came from three state schools at Ioannina, Greece ( $N = 158$ , 63.7%) and two state schools at Limassol, Cyprus ( $N = 90$ , 36.3%). Participants were female ( $N = 108$ , 43.5%) and male ( $N = 140$ , 56.5%), 5th ( $N = 143$ , 57.7%) and 6th ( $N = 105$ , 42.3%) grade primary school students. Most of the students (94.8%) had at least one sibling. Over 50% of the sample was classified as originating from middle socioeconomic status (SES) families ( $N = 137$ , 55.2%), with a further third of the sample coming from higher SES families ( $N = 86$ , 34.7%), and the rest from lower class families ( $N = 25$ , 10.1%). The majority of the sample scored top grades at the first semester at school in the core lessons of language and mathematics (see Table 15.1 for details). School, parental, and student consent was required for participation in the study.

### 2.2 Measures

Participants were asked to provide some demographic information regarding their age, gender, and existence of siblings, socioeconomic status (participants were classified into categories according to Mitsopoulos 1990), as well as their academic achievement at the last semester at school (i.e., grades in the language and mathematics, the two courses considered central to the Greek curriculum).

**Table 15.1** Sample details: gender, class, and grade distribution for the total sample and for each country separately

	Total sample ( <i>N</i> = 248)	Greece ( <i>N</i> = 158, 63.7%)				Cyprus ( <i>N</i> = 90, 36.3%)		
<i>Gender</i>								
Females	108 (43.5%)	65 (41.1%)				43 (47.8%)		
Males	140 (56.5%)	93 (58.9%)				47 (52.2%)		
<i>Class</i>								
5th	143 (57.7%)	91 (57.6%)				52 (57.8%)		
6th	105 (42.3%)	67 (42.4%)				38 (42.2%)		
<i>Socioeconomic status</i>								
High	86 (34.7%)	52 (32.9%)				34 (37.8%)		
Middle	137 (55.2%)	85 (53.8%)				52 (57.8%)		
Low	25 (10.1%)	21(13.3%)				4 (4.4%)		
<i>Grades<sup>a</sup></i>								
		10	9	8	7	A	B	Γ
Language		47.5%	31.6%	14.6%	6.3%	73.3%	24%	2.7%
Mathematics		42.4%	27.2%	20.9%	9.5%	64%	29.3%	6.7%

<sup>a</sup>Differences in the grading system between Greece and Cyprus are reflected in the variables

*Stressful life experiences* were measured with a modified version of the *What Do You Think?* questionnaire (Yamamoto and Byrnes 1987; modified by Anderson et al. 2005; available from Anderson). It comprises 20 items. Children's responses were given on a 5-point scale ("very, very little" to "very, very much") representing how upsetting they would find each life event, such as "parental fighting" and "sent to principal." In addition, children indicated whether they had experienced each item by placing an "X" on an apple printed after the circles denoting the response scale. The questionnaire was translated into Greek following established procedures such as back translation. The final version, titled "Esy Ti Pistevis?" in Greek, was administered to the two samples. Cronbach's  $\alpha$  index of internal consistency for the study sample was .81 ( $\alpha = .82$  for hypothetical events,  $\alpha = .73$  for actual events). High score on the two types of events indicates more negative hypothetical and actual life events.

The *Social Support Questionnaire* (SSQ-6, Sarason et al. 1987. Translated into Greek by K. Kafetsios, personal communication) was used to measure children's *perceived support* children receive from their family members (mother, father, siblings). This version of the SSQ includes three parts, each comprising three similar questions: the first one regards the support a child obtains from his/her mother, the second from the father, and the third from the siblings. Responses in each part are on Likert-type scales ranging from 1—"never" to 5—"always." Sample questions include the following: "Can you trust, talk sincerely and share your feelings with your mother/father/siblings?" "Can you depend on and turn to your mother/father/siblings in times of difficulty?" and "Does your mother/father/siblings offer you practical help?" Reliability of the SSQ in the study sample was  $\alpha = .76$ . A high score on the SSQ indicates higher perceived support from family members.

The *Children's Self-Efficacy for Peer Interaction Scale* (Wheeler and Ladd 1982; adapted into Greek by Galanaki and Kalantzi-Azizi 1999) was used to measure participants' levels of *self-efficacy*. The scale comprises 20 questions scored on a 4-point Likert-type scale (1—very difficult, 4—very easy). Respondents are asked how difficult it is for them to do what each sentence says. For example, “You want to play a game. You want to ask other children to play with you. Is it (very difficult, difficult, easy, very easy) for you to ask them to play with you?” Galanaki and Kalantzi-Azizi report that Cronbach's  $\alpha$  for the Greek sample was .84. Cronbach's  $\alpha$  for the study sample was .93. Higher scores on the scale suggest a higher sense of self-efficacy.

*Mental health* was explored in this study with the help of the *General Health Questionnaire* (GHQ-28; Goldberg 1978; adapted into Greek by K. Kafetsios, personal communication). The GHQ comprises four dimensions, namely, somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. The respondents were asked to rate whether they had recently experienced any of the 28 measured symptoms and to what degree. Four options are available, ranging from “not at all” to “much more/less than usual,” with small variations in the wording of the responses depending on the phrasing of the actual symptom measured. Sample items include “Have you recently been feeling perfectly well and in good health?” and “Have you recently lost much sleep over worry?” The original scale was reported to correlate well with clinical interview schedules,  $r = .76$ . Cronbach's  $\alpha$  for the study sample was .84. A high score on the GHQ indicates poor mental health.

Rosenberg's *Self-Esteem Scale* (Rosenberg 1965; adapted into Greek by the author) was used to measure participants' levels of *self-esteem*. This scale consists of ten items, which are answered on a 4-point Likert-type scale (1 = strongly agree, 4 = strongly disagree). Examples include “I feel I am a person of worth, at least on an equal plane with others” and “At times I feel I am not good at all”. Cronbach's  $\alpha$  for the study sample was .67. A high score on the scale indicates a higher sense of self-esteem.

### 3 Results

Means, standard deviations, and correlations for all study variables for the total sample, as well as for the Greek and the Cyprus samples, separately are shown in Tables 15.2 and 15.3.

#### 3.1 Demographic Effects in the Total Sample

For the total sample, a number of significant demographic differences were identified with the use of a series of one-way ANOVAs (see Table 15.4 for details). In particular, older students tended to report more actual negative events

**Table 15.2** Means, standard deviations, and correlations between the study variables for the total sample

	Mean	SD	Hypothetical neg. events	Actual neg. events	Support mother	Support father	Support siblings	Self- efficacy	Mental health
Hypothetical neg. events	3.77	.59							
Actual neg. events	6.21	2.74	-.35****						
Support mother	5.98	1.40	.32****	-.06					
Support father	4.96	1.73	-.19**	.00	.10				
Support siblings	4.70	1.86	.10	-.11	.24***	.18**			
Self-efficacy	3.29	.53	.09	-.10	.00	-.17**	-.02		
Mental health	1.91	.54	.03	.08	-.06	-.26**	.01	-.05	
Self-esteem	2.01	.43	.00	.14*	-.05	.12*	-.03	.19**	-.41***

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**Table 15.3** Means, standard deviations, and correlations between the study variables for Greece and Cyprus<sup>a</sup>

	Greece		Cyprus		Hypothetical events	Actual events	Support mother	Support father	Support siblings	Self-efficacy	Mental health
	Mean	SD	Mean	SD							
Hypothetical neg. events	3.64	.60	3.99	.50	-.29**	.57***	-.27**	.13	.12	-.00	
Actual neg. events	6.51	2.99	5.61	2.01	-.32***	.02	.02	-.11	-.17	-.12	
Support mother	6.02	1.26	5.91	1.62	.21**	-.09	-.41***	.16	.08	.02	
Support father	5.50	1.32	4.01	1.94	.04	-.14	.64***	-.15	.03	-.07	
Support siblings	4.95	1.75	4.27	1.97	.18*	-.16	.31***	.39***	.25**	.20	
Self-efficacy	3.11	.43	3.61	.55	-.13	.00	-.03	-.11	-.01	-.31**	
Mental health	1.76	.41	2.18	.63	-.14	.31***	-.13	-.03	-.19**	-.21**	
Self-esteem	2.01	.42	2.00	.46	-.04	.19**	-.10	-.02	.18*	-.45***	

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ <sup>a</sup>Correlations for Greece are shown on the lower part of the table, while correlations for Cyprus are shown on the upper part of the table

**Table 15.4** Demographic differences (ANOVAs) in the total sample in Greece and Cyprus

Total sample		Support mother	Support father	Support siblings	Mental health problems	Self-esteem
Hypothetical events	Actual events	Self-efficacy				
Age	Older > younger $F(1, 217) = 5.9^{**}$					
Gender				Males > females $F(1, 231) = 4.23^*$		
SES	Lower SES < higher SES $F(2, 245) = 5.11^{**}$	Higher SES > lower SES $F(2, 245) = 3.77^*$				
Grade in language	Higher grades < lower grades $F(8, 224) = 4.87^{***}$	Higher grades > lower grades $F(8, 224) = 8.33^{***}$	Higher grades > lower grades $F(8, 223) = 7.05^{***}$		Higher grades < lower grades $F(8, 223) = 4.75^{***}$	
Grade in mathematics	Higher grades < lower grades $F(8, 224) = 6.23^{***}$	Higher > lower grades $F(8, 224) = 8.18^{***}$	Higher grades > lower grades $F(8, 223) = 7.71^{***}$	Higher grades > lower grades $F(8, 211) = 1.93^{***}$	Higher grades < lower grades $F(8, 223) = 5.37^{***}$	
Greece						
Age	Older > younger $F(1, 156) = 7.19^{**}$	Older > younger $F(1, 145) = 11.35^{***}$	Older > younger $F(1, 156) = 3.06^*$			
SES	Higher SES < lower SES $F(2, 155) = 4.09^*$	Higher SES > lower SES $F(2, 155) = 2.96^*$				

(continued)

**Table 15.4** (continued)

Total sample	
Hypothetical events	
Actual events	Self-efficacy
Support mother	Support father
Support siblings	Mental health problems
Self-esteem	
Grade in language	<i>Higher grades &gt; lower grades</i> $F(5, 151) = 2.71^*$
Grade in mathematics	<i>Higher grades &lt; lower grades</i> $F(5, 152) = 2.65^*$
Cyprus	
Age	<i>Younger &lt; older</i> $F(1, 88) = 7.65^{**}$
Gender	<i>Older &lt; younger</i> $F(1, 85) = 3.68^*$ <i>Older &gt; younger</i> $F(1, 87) = 4.25^*$
SES	<i>Males &gt; females</i> $F(1, 155) = 4.62^*$ <i>Higher SES &gt; lower SES</i> $F(2, 87) = 3.95^*$
Grade in language	<i>Higher grades &gt; lower grades</i> $F(2, 68) = 5.34^{**}$
Grade in mathematics	<i>Higher grades &gt; lower grades</i> $F(2, 68) = 3.61^*$

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$



than younger ones. Also, males reported that they received more support from their siblings than females.

With respect to socioeconomic status (SES), students from lower SES families reported significantly less hypothetical life events and lower sense of self-efficacy than students from middle and higher SES families. On the other hand, students from higher SES families reported that they received significantly higher levels of support from their mother than students from lower SES families.

Furthermore, students with higher grades in language and mathematics reported less hypothetical negative life events but more actual negative life events; they also reported higher levels of support from the father, as well as from their siblings (only those with higher grades in mathematics). In addition, students with higher school grades reported higher levels of self-efficacy than students with lower grades. Finally, students with higher academic performance in both language and mathematics reported fewer mental health problems.

### ***3.2 Demographic Effects Within Each Country***

In Greece, younger students reported more hypothetical but less actual negative life events than older students; they also showed marginally lower levels of self-efficacy than older students. In Cyprus, younger students reported not only fewer hypothetical events, more support from their siblings, but also higher mental health problems than older students. In terms of gender differences, the only one found concerned the higher level of paternal support that males enjoyed compared to females.

With regard to socioeconomic status differences within each country, Greek students originating from middle SES families reported less hypothetical life events than students in either end of the SES continuum. Perceived maternal support was also found to be lower for the lower SES students, while no significant differences were observed between the higher and middle SES families in this respect. In Cyprus, the academic achievement of higher SES students was significantly better than the performance of students from lower SES families. The same pattern was observed for perceived maternal support.

In Greece, lower grades in language were associated with lower levels of self-esteem, while lower grades in mathematics with more mental health problems. In Cyprus, higher academic achievers in language and mathematics reported significantly more actual negative life events.

### ***3.3 Cross-Country Comparisons***

In order to allow for cross-country comparisons, a one-way ANOVA was carried out. The results indicated that Cypriots reported significantly more hypothetical negative life events than Greeks,  $F(1, 246) = 22.34, p < .001$ ;

nevertheless, the opposite was true for actual life events,  $F(1, 217) = 5.3$ ,  $p < .05$ . Greeks also reported significant higher levels of social support from the father and the siblings than Cypriots,  $F(1, 245) = 51.43$ ,  $p < .001$ ; and  $F(1, 231) = 7.53$ ,  $p < .01$ , respectively. On the other hand, Cypriots seemed to enjoy not only higher levels of self-efficacy but also higher mental health problems than Greeks,  $F(1, 246) = 59.75$ ,  $p < .001$ ; and  $F(1, 245) = 40.57$ ,  $p < .001$ , respectively.

### ***3.4 The Mediation Role of Self-Efficacy and Social Support***

In order to examine whether self-efficacy and social support mediate the relationship between stress (actual and hypothetical life events) and adaptation (mental health problems and self-esteem), the methodology proposed by Baron and Kenny (1986) and Sobel (1982) was followed. Specifically, a series of linear regression analyses were performed to test whether (1) the independent variables (i.e., actual and hypothetical life events) predict the mediators (i.e., self-efficacy, social support); (2) the independent variables (i.e., actual and hypothetical life events), along with the mediators (i.e., self-efficacy, social support) predict the dependent variables (i.e., mental health problems, self-esteem, self-efficacy); and (3) the independent variables (i.e., actual and hypothetical life events) predict the dependent variables (i.e., mental health problems, self-esteem). Sobel tests of mediation were carried out for each set of regressions.

The analyses for the total sample showed evidence that both self-efficacy and social support mediate the relationship between actual (but not hypothetical) negative life events and the two criteria of adaptation (see Table 15.5 for details). Self-efficacy was found to mediate the relationship between actual life events and self-esteem. The mediational effects of social support differed somewhat depending on the family member providing support to the individual: support from the father and from the siblings mediated the relationship between actual negative life events and mental health problems, while maternal support mediated the relationship between actual negative life events and self-esteem.<sup>1</sup>

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<sup>1</sup> Demographic and school attainment effects on the above relationships were negligible. Only academic performance (grade on mathematics) had an effect on the relationship between paternal support, actual negative events, and mental health problems: higher performance was associated with higher levels of support from the father.

**Table 15.5** Significant regression analyses and Sobel tests for mediation for the total sample

Significant mediations	Regressions <sup>a,b</sup>	<i>B</i>	<i>T</i>	<i>SigT</i>	<i>R</i> <sup>2</sup>	Sobel test statistic	<i>p</i>
1. Self-efficacy	IV predicts MED	-.10	-1.52	.128	.11	-3.56	<.001
Actual neg. events	IV, MED predict DV	-.16	-2.40	.017	.04		
		.12	1.86	.064			
Self-esteem	IV predicts DV	-.19	-3.11	.002	.03	-4.50	<.001
2. Support father	IV predicts MED	.00	-.00	.99	.00		
Actual neg. events	IV, MED predict DV	-.24	-3.75	.00	.06		
		.07	1.19	.23		5.19	<.001
Mental health	IV predicts DV	-.26	-4.25	.00	.06		
3. Support mother	IV predicts MED	-.06	-.98	.32	.00		
Actual neg. events	IV, MED predict DV	-.10	-1.56	.12	.03	.07	1.19
		.13	1.98	.04			
Self-esteem	IV predicts DV	-.05	-.85	.39	.00		
4. Support siblings	IV predicts MED	-.11	-1.70	.09	.01	2.94	<.001
Actual neg. events	IV, MED predict DV	-.01	-.20	.84	.00		
		.05	.80	.42			
Mental health	IV predicts DV	.01	.19	.84	.00		

<sup>a</sup>(1) The independent variable predicts the mediator; (2) The independent variable and the mediator predict the dependent variable; (3) The independent variable predicts the dependent variable

<sup>b</sup>IV denotes an independent variable, that is, actual and hypothetical negative life events. MED denotes a mediator, that is, self-efficacy and social support. DV denotes a dependent variable, that is, mental health problems and self-esteem

In terms of country differences, the regression models revealed that only social support mediated the relationship between actual negative life events and adaptation (see Table 15.6 for details). In so far as the Greek sample is concerned, support from the siblings was a mediator of actual negative life events and mental health problems. In Cyprus, paternal and maternal support mediated the relationship between actual negative life events and both indicators of adaptation. Support from the siblings played a mediational role in the relationship between actual negative life events and mental health problems.

## 4 Discussion

Prior to discussing the study findings pertaining to the research hypotheses outlined in the Introduction, I shall comment on results regarding the methodological focus of the study. Specifically, self-esteem, as well as absence of psychopathology, was found to represent similar, complementary, yet distinct ways to index positive adaptation under stress. Self-esteem was linked to stress only via the mediation of self-efficacy—a personal cognitive asset of individuals. Family support, a social asset by definition, was connected to both self-esteem and psychopathology. The

**Table 15.6** Significant regression analyses and Sobel tests for mediation for Greece and for Cyprus

Significant mediations	Regressions <sup>a,b</sup>	$\beta$	$T$	Sig $T$	$R^2$	Sobel test statistic	$p$
<i>(A) Greece</i>							
1. Support siblings	IV predicts MED	-.16	-1.93	.05	.02	-2.15	.03
Actual neg. events	IV, MED predict DV	.02	.27	.78	.08		
		.29	3.44	.00			
Mental health	IV predicts DV	-.03	-.45	.65	.00		
<i>(B) Cyprus</i>							
1. Support father	IV predicts MED	.02	.20	.83	.00	-5.27	<.001
Actual neg. events	IV, MED predict DV	.00	.05	.95	.01		
		-.12	-1.02	.30			
Mental health	IV predicts DV	-.07	-.66	.50	.00	-28.79	<.001
2. Support father	IV predicts MED	.02	.20	.83	.00		
Actual neg. events	IV, MED predict DV	-.02	-.18	.85	.00		
		.01	.13	.89			
Self-esteem	IV predicts DV	-.11	-1.09	.27	.01		
3. Support mother	IV predicts MED	.02	.17	.86	.00	5.27	<.001
Actual neg. events	IV, MED predict DV	-.05	-.48	.63	.01		
		-.12	-1.02	.31			
Mental health	IV predicts DV	.02	.21	.83	.00		
4. Support mother	IV predicts MED	.02	.17	.86	.00	25.54	<.001
Actual neg. events	IV, MED predict DV	-.07	-.63	.52	.00		
		.01	.14	.88			
Self-esteem	IV predicts DV	.00	.06	.94	.00		
5. Support siblings	IV predicts MED	-.11	-.99	.32	.01	4.36	<.001
Actual neg. events	IV MED predict DV	.11	.91	.36	.02		
		-.11	-.90	.36			
Mental health	IV predicts DV	.20	1.93	.05	.04		

<sup>a</sup>(1) The independent variable predicts the mediator; (2) The independent variable and the mediator predict the dependent variable; (3) The independent variable predicts the dependent variable

<sup>b</sup>IV denotes “independent variable” (i.e., actual and hypothetical negative life events). MED denotes “mediator” (i.e., self-efficacy, social support). DV denotes “dependent variable” (i.e., mental health problems, self-esteem)

key, then, to understand resilience may lie with mapping how the different types of assets are associated with positive adaptation under different types of stressors, within a certain cultural context. From the standpoint of positive psychology, the fact that both self-efficacy and family support are associated with a heightened sense of self-esteem may mean that positive qualities of individuals undergoing adversity are necessary factors for positive adaptation; it may also indicate that absence of psychopathology may be a useful alternative way of indexing adaptation, especially when individuals live in stressful sociopolitical contexts, as the one presumably experienced by Cypriots. The above findings also suggest that the phenomena of positive adaptation under adversity cannot be reduced to a single

dimension. Pluralism in the conceptualization and indexing of adaptation is desirable and can generate valuable knowledge regarding the different interconnections and pathways that facilitate the manifestation of resilience in childhood and adolescence.

A wealth of findings emerged from this study, both in terms of the process of resilience across countries and in Greece and Cyprus separately. In the following sections, we shall discuss these findings in light of the hypotheses that guided this study.

#### ***4.1 The Influence of Demographic Factors on Resilience***

The first hypothesis regarded the effects of demographic factors on the process of resilience. With respect to *age*, in the total sample and also in Greece, older students (6th grade) reported more actual negative life events than students even a year younger than themselves. It is plausible that during this age period, perception of life events changes. The relevant literature suggests that younger students report more family-related stressors, while older students report more school- and peer-related problems (Compas et al. 1995). Also, children and adolescents seem to react differently to problems pertaining to school, to family, and to interpersonal stressors (Seiffge-Krenke 2000). It is likely that sources of social support change with age as well, as the evidence from Cyprus suggests. Younger children and males tended to elicit more support from their siblings than females and also to receive more paternal support in Cyprus. This finding is in agreement with other results in the literature of mental health, which has long been reported to relate to various aspects of social support (Kessler and McLeod 1985). These results suggest that there is evidence that gender differences come to play in early adolescence and increase considerably from middle to late adolescence (Nolen-Hoeksema and Girgus 1994).

There were significant *SES* effects on stress, resources, and adaptation. In the total sample, higher *SES* was associated with (a) fewer hypothetical but more actual negative life events, (b) higher levels of self-efficacy and paternal support (as well as maternal and sibling support in some cases, as detailed above), and (c) lower mental health problems, but not with a higher sense of self-esteem. In addition, lower *SES* in Cyprus was associated with lower academic achievement. These findings coincide with other findings from health-related literature which indicate that social class affects some, but not all aspects of adolescent physical and mental health (Starfield et al. 2002).

A similar picture emerged with respect to the effects of *academic achievement* on resilience. In particular, higher academic achievement impacted participants' experience of negative life events, so that higher performing students reported less hypothetical but more actual life events in the verge of adolescence, especially in Cyprus. It is possible that in Cyprus, a country troubled by problems outlined

previously, students who experience more actual negative life events are more readily motivated to overcome them by focusing on educational attainment. Those same students received more support from their father and siblings. It is worth pointing out that maternal support did not differ based on the academic performance of children. It is also interesting in the context of the present study that both high and low academic achievers reported similar levels of self-efficacy, possibly suggesting that other factors mediate the experience of self-efficacy in childhood, such as coping strategies (Bandura et al. 1999). However, in Greece, low academic achievement was detrimental to students' adaptation, both in terms of self-esteem and mental health problems. Finally, in the total sample, higher academic achievers exhibited lower levels of psychopathology.

In summary, the study findings suggest that actual negative life events are critical for resilience. Factors affecting perception of actual negative life events are age and academic achievement. Perhaps older students and high achievers tend to be more realistic regarding what constitutes an actual problem and what not. Conversely, the experience of actual negative life events might lead to higher motivation for academic achievement. Factors pertaining to differential perception of negative life events in Greece and Cyprus are presented below.

#### ***4.2 The Role of Negative Life Events in the Process of Resilience***

Regarding our second hypothesis, results pointed to a differentiated experience of various types of negative life events in Greece and in Cyprus. In particular, Cypriots reported more hypothetical negative life events than Greeks. This finding suggests that recent historical events pertaining to the dichotomizing of Cyprus may have taken their toll on local children's perception of the stressfulness of events that may or may not happen to them in some point in the future. Dealing with these events may prove easier for Greek students, since they reported significantly higher levels of paternal and sibling support than their Cypriot counterparts. To balance the picture, Cypriot students may be more likely to resort to their higher levels of self-efficacy in order to cope with adversity, although the adaptation outcome may not be optimal, since they appear to report more mental health problems than Greeks.

With respect to the second part of this hypothesis, evidence from the mediation analyses discussed in more detail below confirmed the expectation that actual negative life events affect aspects of the resilience process more profoundly than hypothetical events. Furthermore, all incidences of mediation found in this study pertained to the effects of actual and not hypothetical negative life events on resources and adaptation, both in the total sample, as well as in the two subsamples of this study. Even in the case of Cyprus, where students reported more hypothetical than actual events, it was only under actual negative life events that self-efficacy affected adaptation.

### 4.3 *The Manifestation of Resilience*

The third hypothesis regarded the main attributes of resilience, that is, adversity, resources, and adaptation in the total sample, as well as cross-culturally. Overall, the relevant findings supported the existence of both culture-free and culture-specific components in the process of resilience. In particular, a sense of self-efficacy but mainly the availability of social support from family members proved mediators of the relationship between actual negative life events and mental health problems and self-esteem in the total sample. Country differences were also uncovered, such that only social support from the family predicted positive adaptation in Cyprus; in Greece, only support from the siblings was associated with fewer mental health problems in the presence of actual negative life events.

As mentioned above, self-efficacy proved to be a mediator of resilience in the total sample, but not when resilience was examined in each country separately. This finding offers some support to Bandura and his colleagues' (1999) claims that perceived self-efficacy affects people's ability to adapt and respond well under adversity, as well as their aspirations, analytical thinking, and perseverance in the face of failure. This is particularly relevant to adolescent development: since young people need to face risks and challenges associated with this transitional period, their success in school is partly dependent on the strength of their perceived self-efficacy. In a study of adolescents, Hamill (2003) found evidence that self-efficacy and response to stress, alongside perceptions of control, persistence, and coping efforts, characterized resilient, but not maladaptive youth. In another study of adolescents who attended a diabetes camp, moderate levels of self-efficacy were associated with resilience (Winsett et al. 2010).

Family support proved to be a more robust mediator in the process of resilience, since it was found to mediate the relationship between actual negative life events and adaptation both in the total sample<sup>2</sup> and also in each of the two countries studied here. This result is in accordance with similar findings from the risk and resilience tradition, which show family support to be a key protective factor against deleterious effects in children and adolescents (Luthar 2006; Masten 2001). Supportive early family environment has beneficial effects on youth adaptation (Yates et al. 2003). In addition, in a study of Spanish adolescents, Oliva et al. (2009) found that high-quality parent-adolescent relationships mediated the relation between stressful life events and psychopathology.

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<sup>2</sup>It is worth pointing out a discrepancy between perceived maternal and paternal social support regarding hypothetical negative life events for the total sample. Specifically, maternal support was highly and positively correlated with reported hypothetical, but not actual, negative life events, while paternal support was highly and negatively correlated with hypothetical events. This may be attributed to the more supportive and caring societal expectations and roles traditionally reserved for women (Barbee et al. 1993). This may mean that mothers are expected to and perceived as actually offering support to their offspring, not only when the latter experience actual negative life events, but also hypothetical ones.

#### ***4.4 Limitations of the Study, Contribution and Directions for the Future***

The present study represents an effort to map the intricate and diverse ways in which personal and social resources of preadolescent children can lead to positive adaptation under adversity in two Mediterranean countries. The undertaking was an extended and complex one; hence, it has certain theoretical and methodological limitations, which pertain to the following points.

A number of resources can be hypothesized to mediate the effects of stress on children's psychosocial adaptation. This study opted to focus on a cognitive one, namely, self-efficacy and on an environmental one, that is, social support from family members. Other kinds of resources (e.g., emotional, behavioral, and biological/genetic in nature resources) are also important. Resources involving relations with significant others, school factors, such as classroom climate and curriculum, the neighborhood, or other institutions need also to be examined in future studies of resilience.

The main limitation of the study, however, is the focusing on only two countries, namely, Greece and Cyprus. The findings cannot be generalized to other cultural contexts in terms of religion, values, or historical background.

Despite the aforementioned limitation, theoretical knowledge was gained, and a number of issues were clarified regarding the process of resilience in general and, additionally, in two Mediterranean countries. Cross-cultural influences on resilience were unearthed, even for two countries that have much in common, such as Greece and Cyprus. Methodological advances were made, which furthered our understanding of the pattern of effects pertaining to resilience within a positive psychology perspective. The study enriched our comprehension of a phenomenon which falls directly within the premises of this emerging field of enquiry. Hence, the implications of the study findings for parents, educators, mental health professionals, and public policy agents are multiple and need to be taken into consideration by all involved.

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