Acknowledgements

I am grateful to my supervisors Pål Ulleberg and Reidulf G. Watten for their interest in this research project and readiness to share their knowledge and experience so as to reduce the impact of my shortcomings. Without Pål’s impressive understanding of statistics, and his ability to extract essence from numerical gibberish, I would still, at best, be in the midst of unfavorable review processes. I have had the good fortune to cooperate with Reidulf since I commenced my graduate thesis in psychology 10 years ago. His vast insight into psychology and related fields is conveyed with wisdom and wit. My identity as a professional is considerably coloured by our conversations over these years.

This dissertation would not have existed without the willingness and honesty of near 800 adolescent participants. My appreciation towards them is characterized by a strong belief in this generation, which often is the recipient of unjust critique from us who are older. I also wish to thank all the schools that have welcomed this research and Tone Austrud, Rita Bergestig, Drude Klavenes and Kristin Stokke for implementing, together with their colleges, much of the clinical data collection.

The Department of child and adolescent mental health, Sørlandet hospital, has facilitated this work. In particular, I am grateful to Head of Department, Karl Erik Karlsen. His visionary belief in the importance of making research a natural part of clinical activity has been crucial for the existence of this, and many other research projects. From this initiative a vibrant research community has emerged. I am indebted to Research Leader Dagfinn Ulland and all my colleges for day to day support and encouragement. I also wish to thank the staff at the hospital library for their renowned expedient services and Svein Gunnar Gundersen and Sissel Ledang at the hospital Research unit for aid and advice during these years. The work has been supported by grants from Sørlandet hospital and “Stiftelsen sykehuset i våre hender” for which I am grateful.

My valued friends Bent Ståle, Carl and Jarle, have in words and action helped me devote time to purely non-academic endeavors. I firmly believe this has given me necessary distance to my work, of which it has hopefully benefited in content and perspective.
Finally, I wish to give my companion in life, Iris, my deepest admiration, respect and gratitude. She has endured, with patience and prudence, my full specter of emotions during the creation of this product. Most days have been good, but not all. Furthermore, I have enjoyed Iris’ clear sighted academic overview – ever available and willing to share her opinion. And, when expected correlations vanish and effect sizes turn out negligible, a glance at Norunn, our perfect little daughter, reminds of all that really matters. The deepest meaning, it seems, is seldom far away.
List of papers


### List of abbreviations

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<th>Abbreviation</th>
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<tbody>
<tr>
<td>ABUP</td>
<td>Department of child and adolescent mental health</td>
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<tr>
<td>ALGPS</td>
<td>Adolescent Life Goal Profile Scale</td>
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<tr>
<td>BFI-44</td>
<td>Big Five Inventory</td>
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<tr>
<td>CBCL</td>
<td>Child Behavior Checklist</td>
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<tr>
<td>CFA</td>
<td>Confirmatory Factor Analysis</td>
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<tr>
<td>CFI</td>
<td>Comparative Fit Index</td>
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<td>DSM-IV</td>
<td>The Diagnostic and Statistical Manual of Mental Disorders</td>
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<td>EFA</td>
<td>Exploratory Factor Analysis</td>
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<td>GSE</td>
<td>General Perceived Self-Efficacy Scale</td>
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<tr>
<td>HUNT</td>
<td>The Nord-Trøndelag Health Study</td>
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<tr>
<td>MLQ-10</td>
<td>Meaning in Life Questionnaire</td>
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<tr>
<td>MOI</td>
<td>Model of Interconnectedness</td>
</tr>
<tr>
<td>NEO PI-R</td>
<td>Revised NEO Personality Inventory</td>
</tr>
<tr>
<td>PAF</td>
<td>Principal Axis Factoring</td>
</tr>
<tr>
<td>QoL</td>
<td>Quality of Life</td>
</tr>
<tr>
<td>QoL measures</td>
<td>Quality of life measures; a referral to SHS, SWLS, SOC-13, SOC-13M and GSE which all are included in the test battery</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Root Mean square of approximation</td>
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<tr>
<td>SHS</td>
<td>Subjective Happiness Scale</td>
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<tr>
<td>SOC-13</td>
<td>Sense of Coherence Scale</td>
</tr>
<tr>
<td>SOC-13M</td>
<td>Meaningfulness subscale extracted from SOC-13</td>
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<tr>
<td>SRMS</td>
<td>Standardized Root Mean Squared Residual</td>
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<tr>
<td>SWB</td>
<td>Subjective Well-Being</td>
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<tr>
<td>SWLS</td>
<td>Satisfaction with Life Scale</td>
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<tr>
<td>VIA-IS</td>
<td>Values in Action Inventory of Strengths</td>
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Abstract

The aim of this study was to gain more insight into how meaning, expressed through the choice of personally significant goals, plays a role in the lives of adolescents and relates to their well-being and mental health. The findings of these studies are presented in three papers.

Paper I

Objective: To investigate how states that are saturated with meaning contribute to the understanding of subjective well-being. Research question: What characterizes the relationships between states saturated with meaning and well-being? Method: Theoretical analysis. Results: The Model of interconnectedness (MOI) was introduced to provide a framework revealing the connections between important life events and the individual’s inner needs for meaning. Because meaning making is a poorly operationalized process, the MOI could contribute to both applied and theoretical psychology. Meaningful states lead to various forms of subjective well-being (SWB), the causes of which range from biology to self-recognition. Conclusion: The MOI highlights meaningful connections that increase SWB and improve mental health, a finding with clinical promise.

Paper II

Objective: To develop and validate a new instrument, the Adolescent Life Goal Profile Scale (ALGPS), to assess the perceived importance and perceived attainability of life goals of young people. Research question: Does the ALGPS empirically measure the four life goal factors of Relations, Generativity, Religion and Achievements? Method: The scale development procedures include focus group interviews and the administration of the instrument to development and cross-validations samples. Results: Both the exploratory (EFA) and confirmatory factor (CFA) analyses concluded that the ALGPS empirically
measured the four life goal factors. The scales convergent and divergent validity is established. **Conclusion:** The ALGPS has satisfactory psychometric properties.

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**Paper III**

**Objective:** To determine differences between patient and non-patient samples on the ALGPS and different Quality of life (QoL) measures. **Research question:** What differences and similarities between clinical and non-clinical adolescent samples are identified by the ALGPS and different measures of quality of life? **Method:** A sample of adolescents (54 patients and 244 non-patients) completed a test battery that included the ALGPS, various QoL measures and a personality inventory. **Results:** Compared to non-patients, patients were significantly less happy and satisfied and had lower sense of coherence and lower self-efficacy. Patients were also less emotionally stable, had lower conscientiousness, but higher intellect. There were no differences in the perceived importance of the Generativity, Religion and Achievement life goal factors, but patients perceived relationship-oriented goals as less important compared to non-patients. Differences between patients and non-patients on the Relation life goal factor were found; for items associated with intimacy, patients scored significantly lower than non-patients. The perceived attainability of life goals was lower for patients for all of the life goal factors except Generativity, where there were no differences between the two groups. **Conclusion:** Although patients appeared to be less content with life overall compared with non-patients, they did seem to maintain their concern and care for others, religious outlook, and commitment to achievement-related goals. Clinical attention should focus on the presence of goals as well as the lower perceived importance of relationships exhibited by the patient group.
Introduction

1.1 The human need for meaning

"For the many think it is something obvious and evident – for instance, pleasure, wealth or honor. Some take it to be one thing, others another. Indeed, the same person often changes his mind: for when he has fallen ill, he thinks happiness is health, and when he has fallen into poverty, he thinks it is wealth. And when they are conscious of their own ignorance, they admire anyone who speaks of something grand and above their heads. [Among the wise,] however, some used to think that besides these many goods there is some other good that exists in its own right and that causes all these goods to be goods”.

[Aristotle on happiness (1999 p. 3)]

The human need for happiness and meaning underlies curiosity, contemplation, poetry and art. It has been and continues to be a recurrent philosophical theme, as well as a topic of recent scientific research (Wong & Fry, 1998). The individual’s ability to take a bird’s-eye view and ask, “Why am I here, and what is my life’s purpose?” arguably sets human beings apart from other forms of life. Some (Zapffe, 1996) have regarded the human propensity for metacognition as a curse and others (Kierkegaard, 1983) as a challenge that risks existential despair. The current research, however, adopted the more optimistic and life-affirming perspective that the ability and drive towards meaning making is vital for optimal psychological functioning. Our efforts to understand human happiness and well-being can only be successful if the conceptual issues of engagement, purpose and meaning are addressed.
In the literature concerning happiness and meaning, historical accounts of these topics often begin with Aristotle. This ancient Greek philosopher emphasized the significance of the collective for the individual because good deeds are both autotelic (beneficial for the person performing the deed because they refine his nature), and heterotelic (beneficial for the deed’s recipient). For instance, in Aristotle’s (1999) discourse on friendship, he argued that we provide content and “logos” (reason or meaning) in each other’s lives and are dependent on each another and on our community. Aristotle also noted that happiness required an intentional stance to be lasting. “We said, then, that happiness is not a state. For if it were, someone might have it and yet be asleep for his whole life, living the life of a plant, or suffer the greatest of misfortunes” (Aristotle, 1999 p. 162). Lasting happiness, in this account, was due to the feeling of engagement and meaning occurring within a person as a result of an outward orientation.

Throughout the course of history with occurrences such as the rise and fall of empires, wars, and pandemics, individual happiness has been weighted and defined in numerous ways. In the western world, Christianity has arguably been the single most influential factor. According to the church, free will enabled people to choose between good or evil and to be held accountable for their choices. Guilt became an important tool for the control of behavior, making inquisitions and persecutions logically possible. Life on earth was tied up with restrictions – the boundless good life would have to wait till paradise. As the totalitarian power of the church diminished, the emergence of the Renaissance, Empiricism, Positivism, Rationalism and Existentialism, despite their different ontologies, allowed for the questioning of the establishment without necessarily opposing it. National, cultural and social factors gradually came to be regarded as important, leading to the idea that a good society allowed as many of its citizens as possible to achieve happiness (Hergenhahn, 1997). This social focus highlighted the extent to which politics and ideology affected society and its members. Until 50-60 years ago, “the more the better” attitude was dominant, and the opportunity for individual happiness was directly tied to the size of a country’s gross national product (Rapley, 2003). However, this understanding of the relation between material prosperity and people’s experience of everyday life eventually came into question. For example, Glatzer and Bos (1998) described how the German population, despite improved material wealth, experienced increased anomie and a breakdown of social norms and values in the aftermath of the Second World War, which suggested the previously unrecognized complexity involved in a population’s well-being. The term Quality of Life (QoL) was introduced to quantify the
individual’s life quality and was often associated with the Social Indicators Movement (Power, 2003). This movement was, in part, an unforeseen result of NASA’s (the National Aeronautics and Space Administration) investigation of the social consequences of launching a costly space race in the 1960s (Rapley, 2003). The gradual emergence of a new understanding of human well-being culminated with the influential work, *The Quality of American Life* (Campbell, Converse, & Rodgers, 1976) and the opening statement that “It is no longer enough for a nation to aspire to material wealth; the experience of life must be stimulating, rewarding and secure. . . . In this achievement, it has freed its people to concern themselves with the higher-order needs for social esteem, recognition, and self-actualization” (pp. 1-2).

Prior to the 1960s, the relatively new science of psychology was only sporadically concerned with what constituted a good life, although renowned researchers such as William James, Alfred Adler, Charlotte Bühler and Kurt Goldstein were all interested in this topic in different ways. The emergence of humanistic psychology spurred a broader and more systematic approach to the potential for human growth, spearheaded by Maslow’s (1968) self-actualization theory and Rogers’ (1961) emphasis on organismic trust as a path towards becoming a fully functioning, congruent person. The individual was now given the power to define what was good for him or her. As Rogers noted, “One of the basic things which I was a long time in realizing, and which I am still learning, is that when an activity feels as though it is valuable or worth doing, it is worth doing. . . . Experience is for me the highest authority. . . . Neither the Bible nor the prophets - neither Freud nor research - neither the revelations of God nor man - can take precedence over my own experience” (1961, pp. 22-24). Researchers now argued that the experience of happiness, purpose, engagement and meaning made people more well-adjusted and resilient to psychological problems (Schneider, Bugental, & Pierson, 2001). Unfortunately, scientists were reluctant to perform the quantitative replicable studies that would empirically support these theories because this type of research was characterized as ontological “unfaithfulness”. As a result, humanistic psychology was accused of a lack of precision, and the impact of this perspective on psychology as a whole gradually diminished (Carver & Scheier, 2000; Franco, Friedman, & Arons, 2008). Nevertheless, these humanistic ideas reappeared in more recent theories of self-determination (Ryan & Deci, 2000) and were supported by rigorous empirical research in positive psychology. It is generally acknowledged that earlier humanistic researchers’ understanding of optimal human functioning was accurate and that the quest to pursue and fulfill human potentials is arguably the most crucial element
of these theories that is relevant today (Sheldon & Kasser, 2001). A considerable body of literature suggests that meaning contributes in various ways to subjective well-being (Diener, Oishi, & Lucas, 2003), psychological well-being (Deci & Ryan, 2008), positive affect (King, Hicks, Krull, & Del Gaiso, 2006) and QoL (Jankey, 1999). Meaning and well-being are intertwined (Pohlmann, Gruss, & Joraschky, 2006), and research has moved beyond simple demonstrations of associations between these two constructs (Wong & Fry, 1998). Vella-Brodrick, Park, and Peterson (2009) investigated the extent to which the pleasure, engagement and meaning orientations to happiness predicted SWB in US and Australian samples. In that study hierarchical regression analyses revealed that engagement and meaning were the strongest predictors and contributed uniquely to the variance in subjective well-being, which other variables such as demographics and personality did not explain. The human ability to conscious goal-directed behaviors in the quest for meaningfulness is therefore, in my view, a considerable resource and should be treated as such. This dissertation approaches the subject of adolescent meaning making, expressed through their choice of life goals, and will hopefully contribute with a small stone on the growing cairn of knowledge within this promising and important subject.

1.2 Life goal choices express meaning

“Goals are the means by which values and dreams are translated into reality” (Locke, 2002 p. 311).

Although the studies included in this dissertation largely focused on adolescents’ choice of life goals, the phenomenon that motivated the investigation was the concept of personal meaning because this human propensity uniquely allows for personal growth and reflective wisdom.

This dissertation focuses on only a few of the many definitions and perspectives of both meaning and meaningfulness. For instance, it does not discuss the common definition of meaning as the sense or significance of a word, sentence, or symbol or as the purport of speech or action. Instead, meaning is defined as an inner, symbolic and interpretive process.
Baumeister defined meaning as “shared mental representations of possible relationships among things, events, and relationships” and stated that “the essence of meaning is connection” (1991 p. 15). In agreement with Sense of Coherence theories, Korotkov (1998 p. 55) referred to meaningfulness as “the degree to which people’s life makes sense and that the demands confronted by them are perceived as being worthy energy investment and commitment”. Finally I add my own working definition which perhaps comes across as more accessible: “Meaningfulness occurs when a given situation is experienced as congruent with the person’s goal and values”.

However, Stewart-Williams (2010), in an excellent discussion of meaningfulness, noted that the topic becomes even more complex if meaning with life is distinguished from meaning in life. The former can be regarded as an existential quest in which the true manifestation of life occurs in a context grander than oneself. With regard to the latter, meaning in life concerns the events within life that render a life meaningful. Referred to as cosmic and terrestrial meaning (Kinnier, Kernes, Tribbensee, & Puymbroeck, 2003) or higher and lower levels of meaning (Baumeister & Vohs, 2002), respectively, these distinctions might be appropriate in a philosophical investigation but were beyond the scope of the present work.

Much of the extant literature employs the terms “meaning” and “goals” interchangeably (McGregor & Little, 1998; Palfai & Weafer, 2006). Maddi (1998) stressed that personal meaning is derived from individual everyday decisions. Emmons (2003, p. 107) expressed the view that the ability to define and pursue one’s life goals was closely associated with meaning by writing that “goals are essential components of a person’s experience of his or her life as meaningful” and “the construct of ‘meaning’ has no meaning outside of a person’s goals and purposes”. The fact that the desire for meaning is expressed through the presence of personally significant life goals is helpful as these goals are psychometrically more accessible than the more abstract notion of meaning. As with meaning, identifying and progressing towards important life goals is closely tied to long-term well-being (Emmons, Colby, & Kaiser, 1998; Proctor, Linley, & Maltby, 2009a).
1.3 Distinguishing among engagement, purpose and meaning

In research on positive psychology, the notion of “happiness” is often analyzed into more manageable components. Seligman (2002) identified the components of positive emotions, engagement and meaning, which in turn lead to the pleasant life, the engaged life and the meaningful life, respectively. In the pleasant life, pleasantness is experienced regularly, and one has the skills to amplify these pleasures. In the engaged life, in which engagement is similar to the concept of flow (Csikszentmihalyi, 1997), the total immersion within an activity is both deeply rewarding and serves as an antidote to boredom, anxiety and depression (Rashid & Anjum, 2008). In the meaningful life, in contrast, the individual pursuing meaning seeks to belong to and serve some purpose perceived to be larger and more permanent than the self, such as nature, a social group, a belief system, a tradition or a vocation. Damon (2003) emphasized that for a purpose to relate to psychological health, it must be noble in character because compared with a neutral purpose, a noble purpose and meaning are moral and positive.

In the current studies, the theoretical distinction between engagement and meaningfulness (and purposefulness) was not found to be useful or appropriate. This view is shared by Rashid and Anjum (2008 p. 269), who emphasized that “most engagement experiences have the potential for meaningfulness” and argued that a pleasant and gratifying activity might gradually become a source of engagement and passion. Passion might, over time, evolve into a meaningful endeavor (Averill, 2002; Seligman, 2011). This is particularly relevant for adolescents, who often appear more interested in less global, present-oriented engagements, than in activities driven by vocations or deities. However, during the course of these studies, teenagers explaining their passion for their favorite pastime (e.g., snowboarding, playing in a band, travelling) often used language that resembled adult descriptions of meaningful experiences. As a result, in the present work, concepts such as purpose, engagement and

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1 More recently, in Flourish: a visionary new understanding of happiness and well-being, Seligman (2011) distinguished more critically between happiness and well-being compared to his previous work and argued that well-being consists of positive emotion, engagement, meaning, accomplishment and positive relationships. In the current account, accomplishment (or achievement), which has been a problematic area for traditional eudaimonic well-being research, is valued for its own sake, and positive relationships are regarded as vital for well-being because “other people are the best antidote to the downs in life and the single most reliable up” (p. 20).
meaning are used interchangeably, although these concepts can be distinguished at a more in-depth and theoretical level.

1.4 The normality of the human need for meaning

This dissertation posits that making life meaningful is a fundamental human characteristic. Locke's (2002) assertion that man's highest moral purpose is to achieve his own happiness is supported by studies that have found an association between meaning and well-being. However, what constitutes meaning for an individual is profoundly personal, is influenced by the context and may be affected by an illness or psychological crisis. Still, the basic need for meaning remains even if obscured by life events, lack of self-knowledge or introspection, life constraints or limited finances. It is important to note that while not everyone is always actively seeking meaning, most individuals have purposes of some sort so that life has meaning in this sense. Baumeister (1991) emphasized that discovering meaning in life is primarily a “challenge” for people who are not desperate, who can count on survival, comfort and some measure of pleasure. Moreover, Klinger (1998) added that a search for meaning in life is usually not a prominent characteristic of people who are already striving for valued goals. Thus there are many circumstances, both good and bad, that obscure the inherent need for meaning. However, this does not mean that purpose, engagement and meaning are only important for some individuals. On the contrary, the following section presents support for the claim that our species thrives on meaning and that human beings have evolved intellectually beyond the point where basic requirements are limited to environmental adaptation, the sustaining of physical needs and reproduction.

1.4.1 An evolutionary and biocultural perspective on the search for meaning

Positive psychological states influence biological processes and are related to improved immune functioning (Low, Bower, Moskowitz, & Epel, 2011), and the experience of meaningfulness is one such positive psychological state. However, how should meaning be understood from an evolutionary perspective?
Human emotions, such as jealousy, fear, rage, envy, disgust and sadness, employ universal mechanisms (Buss, 1999), which can be related both to the distant past and the future. These emotions are caused by events that threaten the individual’s survival, and equilibrium only returns when the threat is reduced. While threat reduction might in turn lead to emotional reactions of joy or satisfaction, it does not produce meaningfulness in its own right. However, elements of meaningfulness might appear in altruistic actions, which are based upon a genetic dispositional empathy (Carver & Scheier, 2000). Such “reciprocal altruism” is held to occur because cooperation with others increases the odds of survival compared to individualism, and the survival of one’s genes becomes less important than the survival of the genes of one’s species. When the individual perspective is abandoned, a sense of belonging is generated through effort or sacrifice, and meaning might arise from the connection between one’s own and others’ well-being. Schmuck and Sheldon (2001) claim that well-being is related to the type of goals that are pursued and the location of these goals in an evolutionarily based goal hierarchy, because we prefer pursuing short-term goals over no goals and long-term goals to short-term goals. As goals expand and become more complex through a “circle of expanding responsibility”, the individual is evolutionarily programmed to abandon a self-serving focus. Fehr and Fischbacher (2003 p. 785) agree that “human altruism is a powerful force and is unique in the animal world”, but it must involve gene-culture coevolution because environmental factors also play a significant role. Massimini and Delle Fave (2000) note that cultural evolution must be understood as part of a general evolutionary scheme that orients living organisms towards ever-increasing complexity. Their studies analyzed memes (a culture-variant of genes) that affected human conscientiousness and thereby the culture they partake in. In this view, psychological selection is based not only upon adaptation and survival but also upon the need to reproduce optimal experiences. When possible, humans choose a behavior that makes them feel alive and creative. This type of well-being, which is similar to Hellevik’s (2003) concept of value orientation, is associated with a eudaimonic approach and provides the basis for meaningfulness (Ryan & Deci, 2001). Values, which are higher-order goals, are culturally influenced but have a strong effect on happiness only when they are intrinsically meaningful (i.e., accord with more organismic basic needs). Identifying political movements, scientific progress and art are examples of effective sources of cultural meaning, Baumeister (2005 p. 157) argued that culture and evolution evolve interdependently and that culture has a monopoly on broad meaningful contexts “because it enables people to think beyond the horizons of their own lives”.
In psychoneuroimmunology, purpose and meaning are regarded as important buffers to stress (Ader & Felten, 2007; McKnight & Kashdan, 2009) because unpredictable and uncontrollable events are more stressful for those without a central motivating life aim. This claim is supported by Klinger’s (1998) review of studies that linked meaninglessness with various forms of stress. Stress is generally understood to inhibit the immune response system (Atanackovic et al., 2006; Graham, Christian, & Kiecolt-Glaser, 2006) so that meaningfulness seems to be beneficial in promoting the body’s resistance to stress. Many studies of biological emotionality (e.g., Eysenck, 1967; Isen, 2002; LeDoux & Armony, 1999; Pickering & Gray, 1999) support the view that behavioral approach towards a stimulus is generally biologically reinforced (Segerstrom, Smith, & Eisenlohr-Moul, 2011). However, it seems premature to conclude whether these experiences mainly are sought after due to conscious intrinsic motivation or if the individual also, as a result of operant conditioning, seeks out the pleasurable experience again and again.

1.5 Meaning in relation to mental health

In addition to the associations that research has found between meaning or purpose and various forms of well-being, well-being has also been found to have an overall positive effect on mental health. There are strong, negative correlations between life satisfaction and depression (Headey, Kelley, & Wearing, 1993) and between life satisfaction and suicidal behavior (Valois, Zullig, Huebner, & Drane, 2004). Positive affective experiences, in contrast, are important contributors to mental health (Taylor & Brown, 1988). Not surprisingly, happy people are more likely to be mentally healthy than their less happy peers (Diener & Seligman, 2002), and people who are high in trait positive affect are less likely to suffer from anxiety or social phobia (Kashdan & Roberts, 2004). Meaning is related to mental health because meaning is related to well-being, which is related to mental health. The positive relationship between meaningfulness and mental health is generally accepted (McKnight & Kashdan, 2009; Sveidqvist, Joubert, Greene, & Manion, 2003; Van Dyke & Elias, 2007).

Although demonstrating relationships between constructs is a reasonably straightforward process, identifying causal factors and mechanisms is a considerably more complicated matter. Studies of positive outcomes after traumatic experiences (Bonanno, Papa, Lalande,
Zhang, & Noll, 2005; Wilson & Murrell, 2004) suggest that people’s framework for understanding the world is disrupted after traumatic experiences and that individuals engage in a process of meaning making to rebuild a coherent life framework. Purpose and meaning appears to be factors that explain resilience (McKnight & Kashdan, 2009). In their study of adolescents, Halama and Dedova (2007) found that meaningfulness independently predicted positive mental health in hierarchical regression analyses. Krause (2009), who studied 1361 older adults, found that individuals with a strong sense of life’s meaningfulness were less likely to die during a follow-up period compared to individuals who did not report a strong sense of meaningfulness. Routledge and Juhl (2010) further found that the meaningfulness of life moderated death anxiety after thoughts of death were primed. Antonovsky’s (1987) concept of salutogenetic health is especially relevant for this thesis. A more detailed description of the salutogenetic approach is provided in Antonovsky (1990) and Korotkov (1998). In this view, health is linear, and an individual’s Sense of Coherence (SOC) integrates the comprehensibility, manageability and meaningfulness of a particular situation. Meaningfulness is the concept that life stressors are worth the investment of energy and engagement. Compared with the cognitive components of comprehensibility and manageability, meaningfulness is the emotional and most potent aspect of salutogenetic behavior. Antonovsky claimed that the SOC is an adaptive coping mechanism that promotes health. However, to establish causal relationships between meaning and mental health, more longitudinal studies - particularly of adolescents - are needed.

1.6 The nature of mental health problems facing young people

Child and adolescent mental health disorders are common. Recent figures from the United Kingdom indicate that 10% of children between the ages of 5 and 16 years have a diagnosed mental disorder (UK National Statistics), and statistics from the US reveal that mental illness occurs in 20% of American children during any given year (US Office of the Surgeon General). In Norway, the Norwegian Institute of Public Health estimates that 15-20% of children between the ages of 3 and 18 years suffer impaired functioning due to symptoms of mental disorders and that 8% meet the requirements of a psychiatric diagnosis, probably requiring professional help. Interestingly, two out of three children under the age of 12
receiving mental healthcare are male, while two out of three children receiving mental healthcare after the age of 12 are female (Myklethun, Knudsen, & Mathiesen, 2009).

The Nord-Trøndelag Health Study (HUNT) has performed extensive research on self-rated health (SRH) in Norwegian adolescents. The SRH measure includes only one question, “How is your overall health at the moment?” with four possible responses. In a cross-sectional study, Breidablik, Meland, and Lydersen (2008) found many associations between the SRH and medical, psychological, social and lifestyle factors, but the relationship of SRH with general well-being was the strongest. The authors concluded that “the absolute importance of hampering positive health may be greater because of the higher prevalence of such health ratings” (p. 12). In a four-year follow-up study, Breidablik, Meland, and Lydersen (2009) concluded that the SRH was relatively stable during adolescence but deteriorated with a lack of well-being and increased healthcare attendance.

Many parents are concerned that later generations will adopt attitudes and values differing from their own. Adolescent interactions follow their own rules and their ways of dealing with the demands of society continuously change. This raises the question of how these differences affect the nature of the mental health problems that occur within this age group. It is a question that can be answered in many different ways. Most people will at some point experience loss, trauma, fear or betrayal, and all of these experiences produce predictable psychological reactions. It is unlikely that the repertoires of defense mechanisms adolescents use have changed very much. These typically manifest themselves as conduct problems and disorders, eating disorders, obsessive compulsive disorders etc. (for more see; Adams & Berzonsky, 2003; Lerner & Steinberg, 2004, Rutter et al., 2008,). Furthermore, anxiety disorders, depression and schizoid behavior continue to disable young people, although the diagnosis of “childhood schizophrenia” is no longer applied (Hollis, 2008). However, society is changing, probably at a more rapid pace than before due to information technology, social media, and multiculturalism. These circumstances might influence the nature of young people’s mental health problems due to the disruption of attention, adoption of multiple identities and, for children of first-generation immigrants, the challenge of dealing with sometimes incompatible cultures (Nikapota & Rutter, 2008). Although the causes are complex, The Norwegian Government document, Prop. 130L (2010-2011) notes that there has been a rise in adolescent behavioral and personality disorders, depression, and anxiety as well as increased substance abuse.
Studies of adolescents also find associations between meaning, well-being and mental health (Ho, Cheung, & Cheung, 2010; Proctor, Linley, & Maltby, 2009b). Young people who report a high level of well-being also view their lives as more meaningful and enjoy better mental health than those who do not. Marcia’s (1966) ego identity model was an elaboration of Erikson’s (1956; 1968) lifespan sequence of developmental tasks. In Erikson’s model, adolescents resolved the issue of identity versus role confusion. Marcia investigated how young people choose personal and meaningful life options. Individuals who explore their options prior to making commitments were categorized as identity-achieved. Other categories included a moratorium identity status in which the individual is still searching for meaningful roles, a diffusion identity status in which the individual was uninterested in finding a personally expressive role, or a foreclosure identity status in which commitments were made without prior exploration. Identity-achieved individuals exhibit high levels of motivation and self-esteem, lower use of defense mechanisms, high levels of internal locus of control and function well under stress (Kroger, 2003). Open-achieved individuals (an additional form of identity achievement) are also more self-actualized (Valde, 1996). Hence, identity-achievement seems to enable a purposeful and meaningful life expressed through the pursuit of personally significant goals. A meta-analysis carried out by Arseth, Kroger, Martinussen, and Marcia (2009) found links between identity development and adolescents’ relational experiences as well as identity status and attachment style. Another meta-analysis (Kroger, Martinussen, & Marcia, 2010) found that roughly half of all adolescents experienced identity status changes and that these changes were more likely to be progressive than regressive. This research marks the period of adolescence as particularly important because transitions between identity statuses become less likely in adulthood².

² In a recent study of 136 Swedish young adults, Wangqvist and Frisen (2011 p. 110) found that “participants in the identity diffusion group did not report higher levels of either identity distress or psychological symptoms than the participants in the identity achievement or foreclosure groups”. This finding highlights the complexity of identity status and the need for caution in drawing conclusions.
1.7 A scientific approach to adolescent meaning making

“In spite of many years of psychological research on various aspects of global meaning, there is very little that we can confidently state about human meaning making systems. Much work is needed to better understand global beliefs, goals, and a sense of meaning or purpose and how they influence the lives people live” (Park, 2011 p.330).

This dissertation focuses on adolescents’ potential for development and growth. Many research programs currently support research on positive aspects of youths’ development (Proctor, Linley, & Maltby, 2009a), and this topic undoubtedly falls within the scope of positive psychology.

In their article Positive Psychology: An Introduction, Seligman and Csikszentmihalyi (2000 p. 5) described the positive psychology approach as a “science of positive subjective experience, positive individual traits, and positive institutions [which] promises to improve quality of life and prevent the pathologies that arise when life is barren and meaningless”. A criticism of positive psychology is that other approaches, ranging from humanistic to Buddhist psychology, also study optimal human functioning. While acknowledging some truth in this claim, Seligman and Csikszentmihalyi (2001 p. 90) identified the primary difference between their approach and that of their predecessors. “We are, unblushingly, scientists first. The work we seek to support and encourage must be nothing less than replicable, cumulative, and objective”.

The papers included in this thesis are consistent with the positive psychology approach for a number of reasons. Many scholars of psychology regard the constructs of meaning, purpose, and engagement as fuzzy and difficult to investigate empirically (see section 4.3.1). Although previous research has found associations between meaningful living and healthy psychological functioning, there were few empirical studies of this topic until fairly recently. The renewed attention towards optimal human functioning motivated many studies targeting existentialism to be carried out. Increased knowledge has generated new research questions and a demand for further investigation (Bleidorn et al., 2010; King et al., 2006). Also,
psychology and psychiatry have historically been concerned with the diagnoses, mental disorders and the symptoms of psychopathologies (Seligman, Rashid, & Parks, 2006; Shorter, 2008). As a result, the focus has been on combating illness, reducing symptoms and educating patients on how to live with chronic conditions. Although these clinical approaches continue to be significant, research on other aspects of human functioning, such as the inclination to identify goals that foster meaningful living, might also increase health and well-being because these propensities appear to continue to function in times of illness. The three papers presented here address these issues. Finally, most research on the concerns described above has focused on adults. Adolescents remain an understudied group despite the important differences between age groups. As a result, the present research had two aims. The first aim was to add to the theoretical and empirical knowledge relevant to practical and clinical activities serving young people. The other was to methodologically contribute to the field of adolescent research by developing a measurement scale.

1.8 The need for a new measure of meaning and life goals for adolescents

A number of scales measure the presence of meaning. Some, like the Meaning in Life Questionnaire (MLQ-10; Steger, Frazier, Oishi, & Kaler, 2006), would be valuable in the assessment of the possible effects of existential therapy aimed at grownups (This scale assesses the presence and search for meaning - not the specific character of this meaning). A few instruments, such as the Personal Meaning Profile (PMP; Wong, 1998) capture the nature of the life goals associated with meaning making but were primarily developed using adult North American populations. Frisen (2007) notes that adapting scales designed for adults to adolescents may lead to validity problems because adult measures are unlikely to “acknowledge important aspects of adolescent development and functioning” (p. 967). Additionally, most life goal questionnaires are of a normative character, thus failing in my opinion, to take into account the idiosyncratic characteristics of the respondents. Because different goals make different people happy, summing scores on the various life goals factors
to produce an overall “meaning score” is conceptually problematic. Moreover, if this is performed on an individual basis, the result is at best useless and at worst misleading.\(^3\)

For clinical purposes, measures of life goals would be more informative if an evaluation of the attainability of these goals was included. The omission of this important feature from previous life goal studies is a major limitation that should be rectified (Conrad, Doering, Rief, & Exner, 2010).

The development of the Adolescent Life Goal Profile Scale (ALGPS; Livsmålsskala in Norwegian) was spurred by the above observations of existing measures, as well as the desire to learn more about young people in Norway. The ALGPS is intended to be a tool that supports therapeutic activities and as an instrument for basic research. The goal of the scale is to provide young patients and their clinicians with a personal life goal profile and highlight the extent of belief in the attainability of these goals. For Emmons (2003 p. 106), “goal attainment is a major benchmark for the experience of well-being”, and many people with mental health issues describe a sense of hopelessness about the future. Reasons for this vary but include the perceived loss of life opportunities, missing out on “exciting” adolescent experiences or assuming fewer personal abilities compared to one’s peers. However, because the presence of psychological challenges is unlikely to eliminate the need for meaning, life goals in some form continue to be present. The ALGPS is intended to reveal the presence and relationships between these life goals and determine which life goal categories are more or less significant. Furthermore, the ALGPS might prove useful in basic research on adolescents to identify goal construction and goal related optimism across different cultural, socioeconomic, or geographic groups and help explain demographic differences in mental health, happiness and well-being.

The following three papers provide information about the concept of meaning, the measurement of meaning and how these issues are related to the mental health of young people.

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\(^3\) For example, questionnaires generally base their sum scores on the assumption that religious people are more satisfied than non-religious people (Koenig, McCullough, & Larson, 2001), thus viewing high scores on religiousness (or spirituality) as favorable. Okulicz-Kozaryn (2010) notes major methodological weaknesses in previous studies of these relationships and presented data that suggest that it is the social setting of religiosity leads to satisfaction rather than the belief in a deity itself. His analysis of data from 79 nations found that believers in God were somewhat less satisfied than non-believers.
2

Research questions, materials and methods

2.1 Research questions

Paper I: What characterizes the relationships between states saturated with meaning and well-being?

Paper II: Does the ALGPS empirically measure the four life goal factors of Relations, Generativity, Religion and Achievements?

Paper III: What differences and similarities between clinical and non-clinical adolescent samples are identified by the ALGPS and different measures of quality of life?

2.2 Design

Paper I is based on a theoretical analysis, paper II employed psychometric scale development procedures and paper III employed a comparative cross-sectional design. Development of the ALGPS in paper II also included data from focus group interviews. In papers II and III, test batteries measuring subjective happiness, life goal profiles, life satisfaction, sense of coherence, self-efficacy and personality were administered.
2.3 Sample

2.3.1 Paper II

A convenience sample of students at four different high schools (two males and two females) with an age range of 15 to 17 years were recruited and participated in the focus groups; the students did not know each other previously. The preliminary version of the ALGPS was administered to a convenience sample of seven classes from four high schools in south Norway (N=140); 40% of the students were male and 60% were female, with a median and mean age of 16 years. The second version of the ALGPS, together with a test battery, was administered to a convenience sample of 12 classes from 6 high schools in south Norway recruited from ten major high schools in the region; this sample had been invited to participate through a written request to the school principals. The second sample (N=244) included 37.3% male and 62.7% female students with a median age of 17 years; 148 were general studies students and 96 were vocational students. Most of the students (93.4%) were 15 to 18 years old; 6.6% were 19 years or older. A third, cross-validation convenience sample consisted of 14 classes from a major high school in the region that had not previously participated in the study. In this sample (N=294), 39.4% of the students were male and 60.4% were female with a median age of 17 years; 202 were general studies students and 92 were vocational students. Most of the students (87%) ranged in age from 15 to 18 years; 13% were 19 years or older.

2.3.2 Paper III

A convenience sample of adolescent psychiatric outpatients (N=54) receiving professional mental health care at a specialist level was recruited from the three main branches of the Department for Child and Adolescent Mental Health at Sørlandet Hospital (ABUP); 27.8% of the patients were male and 72.2% were female with a median age of 16 years. Most of the patients (79.6%) were 15 to 18 years old and 20.4% were 14 years or younger. Although
medical information such as patient diagnosis and medical history was not available, the sample included outpatients with the mental health problems typically associated with this age group, which included affective disorders, conduct disorders, eating disorders and attention deficit hyperactivity disorders; individuals with psychosis and/or severe states of confusion were excluded. Data on sense of coherence and personality traits, which provided indirect measures of mental health, were also collected. Data for the non-patient sample (N=244) had previously been collected from the second sample of high school students who participated in the study reported in paper II.

2.4 Methods

2.4.1 Theoretical analysis

Theoretical analysis, which is not to be confused with theoretical or basic research, is a method that is widely employed but seldom defined. A theoretical approach uses existing research to advance theory, and a theoretical analysis requires the review and organization of a considerable body of literature. The methodology adopted here included a preliminary literature search that particularly focused on the PsycINFO® and PubMed databases to identify review articles and handbooks addressing the research issues. These works suggested directions for further reading that typically included articles and chapters in edited books. The end point of the literature search was identified as the point when the texts referred to one another to a large extent. Because a limitation of this method is the possibility that relevant approaches might be omitted, the literature search incorporated related areas within the social sciences, philosophy and the science of religion.
2.4.2 Scale development procedures

The development of the ALGPS followed conventional procedures (DeVellis, 2003; Kline, 2000; Murphy & Davidshofer, 2001; Shadish, Cook, & Campbell, 2002; Tabachnick & Fidell, 2007; Thompson, 2004), which support the following chronological order for scale development:

1. Perform a thorough theoretical conceptualization
2. Identify the scale’s purpose (what is being measured)
3. Generate an item pool
4. Determine the measurement format
5. Administer the test to development sample(s)
6. Score and evaluate the items
7. Optimize the scale length

For steps 4 through 7, previous researchers have promoted different conventions that differ with respect to the appropriate or ideal sample sizes, factor extraction procedures, confirmatory factor analysis cut-off values, optimal number of scale items, etc. These issues are discussed in detail in sections 4.2.1-4.2.3.

2.4.3 The test battery

In addition to the different versions of the ALGPS and five self-developed questions, the test battery included the following measures:

1. Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999)
2. Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985)
3. Sense of Coherence Scale (SOC-13; Antonovsky, 1993)
4. General Perceived Self-Efficacy Scale (GSE; Schwarzer & Jerusalem, 1995)
5. Big Five Inventory (BFI-44; John & Srivastava, 1999)

Measures 1 through 4 are referred to as the Quality of Life (QoL) measures below.
Happiness, life satisfaction, sense of coherence and self-efficacy were used to establish the ALGPS’ convergent validity in paper II, and served as control measures in paper III. The personality inventory was included to control for discriminant validity and report style in paper II, and served as a control measure and indirect measure of mental health in paper III. Finally, five questions assessing adolescents’ satisfaction with important life domains were developed. The test battery consisted of 123 items with three variables for non-patients (age, sex and school) and two variables for patients (age and sex). All of the scales are translated into Norwegian and validated for use with the Norwegian population. The SWLS, the SOC-13 and the GSE were also adapted for the adolescent age cohort. To adapt the adult versions of SHS and BFI-44 for young people, the scale items were presented to a number of adolescents to identify ambiguities and employ youth-appropriate language. Adolescents were interviewed individually, and alterations to items were made incrementally until the measures appeared to be clear and understandable to this age group.

**Subjective Happiness Scale (SHS)**

The SHS is a global, subjective assessment of whether one is a happy or unhappy person. The four-item, 7-point Likert scale assesses the respondent’s agreement to item statements (e.g., *Compared to most of my peers, I consider myself*), with responses ranging from 1 (less happy) to 7 (more happy). One of the four items is reversed. The SHS score is the average score for the four items, with higher scores indicating more happiness. Cronbach’s alpha coefficients for the development samples ranged from .79 to .94 (Lyubomirsky & Lepper, 1999).

**Satisfaction with Life Scale (SWLS)**

The SWLS measures the overall cognitive evaluation of one’s life. SWB is assumed to have a three component structure: positive affect, negative affect, and life satisfaction. Life satisfaction is related to, but partially independent of, the affective aspects of SWB (Pavot & Diener, 2008), which makes it less vulnerable to proximate contextual effects compared to positive and negative affect. It is a five-item, 7-point Likert style scale, with responses to
items (e.g., *In most ways my life is close to my ideal*) that range from 1 (strongly disagree) to 7 (strongly agree). All items are keyed in a positive direction, and the total score is the sum of the five responses. In a range of studies, Cronbach’s alpha coefficients ranged from .79 to .89.

**Sense of Coherence Scale (SOC-13)**

The SOC-13 is based on Antonovsky’s (1987) theory on life orientation and health, and it measures comprehensibility, manageability and meaningfulness. The SOC is strongly related to health in general and to mental health in particular (Eriksson & Lindstrom, 2006). There are two versions of the SOC, one with 29 items and one with 13 items; the 13-item version was used in the present study. Although the internal consistency is somewhat lower for SOC-13 than for SOC-29, the reported coefficients range from .85 to .91 (Antonovsky, 1993). A 7-point Likert scale is used to score the items (e.g., *Do you have very mixed-up feelings and ideas?*) with responses ranging from 1 (very often) to 7 (rarely or never) for reversed items. Five of the items are reversed. A sum score provides the level of sense of coherence.

The four items in the SOC-13 that measure meaningfulness were extracted and used as a subscale (SOC-13M).

**General Perceived Self-Efficacy Scale (GSE)**

The GSE measures self-efficacy, the belief that one can perform the behaviors required to produce a desired outcome. Self-efficacy seems to be positively related to desirable characteristics such as optimism, self-esteem, satisfaction and internal locus of control (Leganger, Kraft, & Roysamb, 2000). The GSE is a ten-item, four-point Likert scale with responses to items (e.g., *I can always manage to solve difficult problems if I try hard enough*) that range from 1 (not at all true) to 4 (exactly true). Perceived self-efficacy is the sum score of all items. Cronbach’s alpha coefficients ranging from .76 to .90 were reported in 23 international studies (http://userpage.fu-berlin.de/~health/engscal.htm, retrieved 07.09.2011).
Big Five Inventory (BFI-44)

The BFI-44 (John & Srivastava, 1999) inventory measures personality traits using the five-factor model, and provides scores for Extraversion, Agreeableness, Conscientiousness, Emotional stability and Intellect (for more on the five trait taxonomy see; John, Naumann, & Soto, 2008). BFI-44 is normed for Norwegian conditions and in contrast to the larger Revised NEO personality inventory, measures the five factors without facets (Engvik & Føllesdal, 2005). The BFI-44 contains 44 items that are short statements describing a personality characteristic (e.g., Can be careless and Has a tendency to be lazy) that are scored on a 7-point Likert scale with responses ranging from 1 (does not fit) to 7 (fits completely). The personality profile is a summary score of the items associated with each of the five factors. Cronbach’s alpha coefficients for these factors ranged from .75 to .84 in Norwegian samples (Engvik & Føllesdal, 2005).

Questions regarding satisfaction with specific life domains

Five 4-point Likert-type questions were developed by the researchers to measure perceived satisfaction within the life domains of family, school, appearance, friends and leisure time. The four response categories were bad, fairly bad, fairly good and good. Data from these questions were not reported in the papers.

2.5 Analysis

Data analysis was performed using SPSS 16.0 (SPSS Inc., Chicago, Illinois) and Mplus 6.1 (Muthén & Muthén 2010) as well as online effect size calculators (Ellis, 2009). Harald

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4 Recently, a Norwegian short version of the BFI-44, the BFI-20, has been introduced (Engvik & Clausen, 2011).
Engvik at the University of Oslo calculated the BFI-44 scores; for the other measures, the scores were calculated according to the specific procedures for each instrument.

2.5.1 Paper II

The data from pilot study 2 were analyzed using principal axis factoring (PAF) with direct oblimin rotation. The data from the ALGPS in the main study were analyzed with exploratory factor analysis (EFA) using maximum likelihood estimation methods with geomin (oblique) rotation. Data from the cross validation sample was subjected to both EFA and confirmatory factor analysis (CFA). A repeated-measures analysis of variance directly compared the four life goal factors, and independent samples t-tests were used to estimate group differences. To examine the relationships between the difference scores (mean attainability of a life goal factor minus mean perceived importance of this factor) and QoL measures, after controlling for the level of perceived importance of each life goal, both perceived importance and difference scores for all life goals were entered as predictors in multiple regression analyses.

2.5.2 Paper III

The data was analyzed using independent samples t-tests for group differences and two-way analysis of covariance. Independent samples t-tests were used to compare average scores for the patient and non-patient groups on perceived importance and perceived attainability of the life goal factors, as well as on items making up the Relation life goal factor. To control for systematic group differences in gender and age, two-way analysis of covariance was performed with the life goal factors as dependent variables, groups and sex (and group * sex) as fixed factors, and age as covariate. We also used this approach with the four life goal factors as dependent variables, groups and sex (and group * sex) as fixed factors, and the five personality traits as covariates.
2.6 Ethical considerations

For paper II, written consent from the participant and his or her guardian was obtained for the focus group interviews, and after analysis, the recorded data were destroyed. For paper III, the procedures for patient data collection were approved by the Regional Committees for Medical and Health Research Ethics.

For the non-clinical samples - the development samples in paper II and the non-patient sample in paper III - the students’ guardians received a letter describing the research a few days before administration of the preliminary version of the ALGPS or the test battery including the ALGPS. The letter described the purpose of the research project, emphasized that the guardians were free to withdraw the student from the study, and indicated that because participation was voluntary, students could anonymously return an empty form during the class session. The final version of the ALGPS was administered to the cross-validation sample in paper II. For this sample, no information was provided to student guardians beforehand. Instead, the administration of the ALGPS was preceded by a brief description of the study, and students were informed that handing in a completed test constituted consent to participate in the study. Students who participated in the cross-validation sample were eligible for a drawing for an iPad 2. The list of student names (required for this drawing) could not in any way be linked to the test sheets.

For the clinical sample, a letter describing the study was handed out to the adolescent patients and their guardians. Returning the completed test battery by mail was considered as consent to participate in the study. Patient participation was anonymous and there were no coded records of names or affiliations. The information hand-out included contact information to the hospital and to the researcher should the need for extra follow-up occur.
3

Results

3.1 Paper I

The Model of Interconnectedness (MOI) was introduced as a schematic representation of 16 conditions that allowed the emergence of states saturated with meaning (see Fig. 1). Theoretically, the four main categories of meaning (Emmons, 2003) can logically be linked to the four inner needs for meaning (Baumeister, 1991; Baumeister & Vohs, 2002).

Figure 1 Model of Interconnectedness (MOI)
An important prerequisite for the model is that a preoccupation within one of the four life meaning categories is unlikely to create a meaningful experience in itself before this action is interconnected with one or more of the inner needs of meaning. The experience of meaningfulness is associated with self-actualization, peak experiences, and flow as well as general happiness and well-being. Due to the interplay of nature with nurture, individuals inherently differ in what is perceived to be meaningful and how they pursue meaning. The processes human beings use to pursue and construct meaning make this topic relevant for many areas of psychology. Furthermore, these basic needs remain active during mental health problems, although priorities might change, and meaningful goals might be expressed in new ways. However, many clinicians do not fully appreciate the idiosyncratic nature of meaningfulness that requires an active focus on the individuality of meaning making. Therefore, enabling a person who is experiencing mental health problems to define and pursue personally congruent life goals should be regarded as good practice and more often be prioritized in the patient-therapist relationship.

3.2 Paper II

3.2.1 Pilot study 1

Focus group interviews revealed that the four categories described real and recognizable life goals such as “I don’t care what they say but family and friends, you know, they are the most important”, or “I am not like you guys, it feels good not to have to relate to God”. When discussing life goals, the participants used simpler and less nuanced language compared with what might be expected from adults. The adjectives used to describe life goals were often simple (e.g., fun or boring). The adolescents found it hard to distinguish between constructs such as religion and spirituality or sexuality and intimacy. They also appeared to be more likely to engage in unselfish activities with imminent rewards (e.g., “In a way it isn’t that fun to collect bicycles for Cuba because then you can’t see their happy faces”, “in some way it’s fun to help painting the house because it looks nice and they [parents] like it). Long-term investments in the areas of health or finances were not featured except for academic efforts to
secure opportunities for future education (e.g., “I must get my act together at school; I want to get a good job so I can travel and stuff like that”).

3.2.2 Pilot study 2

After data were subjected to a PAF, three factors were retained, two of which were clearly recognizable as Relations and Religion, whilst the third factor seemed to combine the Achievement and Generativity dimensions. Unfortunately, the high endorsement of several items was probably due to the formulation of the question accompanying the item statements. Respondents were asked the extent to which they agreed with the statements, which led to high levels of agreement with many items.

3.2.3 Main study

The data from the development sample (N=244) were subjected to an EFA. The rotated solution revealed the presence of a simple structure in which there were several strong loadings on all of the factors and all of the variables loaded primarily on a single factor. Based upon the content of the items clustering on each factor, the four life goal categories were clearly recognizable as Relations, Generativity, Religion and Achievement. Female adolescents had significantly higher mean scores than male adolescents for the Relations, Generativity and Religion factors, although there was no gender difference for the Achievement factor.

To cross-validate these results, a CFA was performed on the data from a new sample (N=294). After making two modifications to the model, the root mean square error of approximation (RMSEA) and standardized root mean squared residual (SRMR) were acceptable (Hu & Bentler 1999; Loehlin, 1998), although the comparative fit index (CFI) was a bit low. However, because the EFA for the cross-validation sample produced the same model as the EFA for the development sample, and the RMSEA and SRMR in the CFA
indicated an acceptable fit of the four-factor model to the data, the results indicated that the four-factor structure of the ALGPS was replicated across the two samples.

The convergent validity of the life goal factors was assessed by comparing the ALGPS scores to scores on validated measures of happiness, life satisfaction, sense of coherence (including the meaning subscale), and general perceived self-efficacy. For the perceived importance of life goals and the perceived attainability of life goals, all the significant correlations were positive.

The measure’s discriminant validity was assessed by analyzing the extent to which the perceived importance of life goals was an indirect measure of personality. The correlations were either absent or small, and the only medium-sized correlation was between Relations and Extraversion.

3.3 Paper III

The means and standard deviations of the scores for the four ALGPS life goal factors and the QoL measures were calculated for the entire sample (both patients and non-patients). A correlational analysis of the study variables was also performed. Among the life goal factors, the perceived importance of the Relations life goal exhibited the highest mean score. The Relation and Generativity life goals displayed the strongest correlations with the QoL measures. Of the QoL measures, the SOC-13M exhibited the highest average correlation with the life goal factors. Correlations among the QoL measures were all large [according to guidelines suggested by Cohen (1998)].

The mean scores for the non-clinical and clinical groups were calculated. Independent samples t-tests indicated that patients’ scores were significantly lower than those of non-patients for all of the QoL measures. For the life goal factors, the perceived importance of Relations was significantly lower for patients compared to non-patients; however, there were no differences between the two groups in the perceived importance of the Generativity, Religion and Achievement factors.
Two-way analyses of covariance found that the significant difference between patients and non-patients was still present after controlling for sex and age; no interaction effects between group and age was found.

To better understand the differences between groups for the Relations life goal factor, independent samples t-tests were performed to assess group differences on the items that made up this factor. There were significant differences between patients and non-patients for the scale items associated with intimacy, but there were no significant group differences for the items related to sociability or friendship.

The analyses that were performed for the perceived importance of life goal factors were also performed for the perceived attainability of life goal factors. Significant differences between patients and non-patients were found for all life goal categories except for Generativity. These results suggest that non-patients had stronger beliefs in the attainability of their relationship-, religion- and achievement-related life goals compared with patients.

To determine whether personality predicted ALGPS scores, two-way analyses of covariance were performed with the perceived importance of the four life goal factors as dependent variables, group and sex as fixed factors, and the five personality factors as covariates. The largest effects found were Extraversion on Relations and Intellect on Generativity. Apart from a modest effect on Relations, Emotional stability did not have any effect on the life goal factors.
Discussion

The studies in this thesis investigated the process of adolescent meaning making expressed through the choice of life goals and how these life goal choices were related to adolescents’ quality of life and mental health. Though the findings in papers II and III might apply to adults, the data were obtained from adolescents so that results are primarily relevant for this age group. A major strength of the study was the decision to base the development of the ALGPS on data from adolescents. Unlike other measures that were developed for adults, it does not require adaption to younger cohorts. Furthermore, the focus of the study was the potential for growth and the pursuit of optimal life choices, regardless of the presence of mental health problems, which sidestepped the issue of identifying mental disorders using The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Still, this work does not partake in the discussion of to what extent psychiatric diagnosis should be regarded as essential tools in mental health care - only that they are not emphasized in this study.

Even though the research exhibited some important limitations that are discussed in sections 4.1-4.3, these studies increased our understanding of meaningful living as a possible pathway for improving adolescent mental health.

4.1 Discussion of primary findings

The aim of paper I was to investigate the relationship of the psychological state of meaningfulness to various aspects of well-being. Much of the existing literature supports the claim that individuals who view their lives as purposeful and meaningful are more satisfied and content than those who do not. Maslow (1968) argued that self-actualization was a growth-oriented need and that basic need for safety, love, and recognition would have to be at
least partially fulfilled before the individual could focus on the enrichment of life and increase the odds of reaching plateau experiences and peak experiences. Maslow’s theory intuitively makes sense when it is related to our own lives. He was also insightful in his understanding of the human as a meaning-seeking species. However, Maslow did not provide strong empirical support for his ideas, and it now seems that our propensity towards existential growth might parallel other aspects of life.

During the Crimean war, Florence Nightingale recognized the importance of caring for the patient in a holistic manner and encouraged interventions that enhanced individuals’ abilities to draw upon their own healing powers. She considered touch, light, nature, music, quiet reflection and other similar measures as essential to healing. She found that patients who managed to focus on positive emotions despite enduring pain and insecurity fared better than those who did not (Nightingale, 1860). Viktor Frankl (2006) vividly portrayed the urge to maintain an existential focus even when basic needs were at risk. He summarized his experience of surviving World War II concentration camps by stating that “we cannot avoid suffering but [that] we can choose how to cope with it, find meaning in it, and move forward” (back cover). In contrast, the story of the German soldier Clemens Forell’s escape from a Russian labor camp and his epic three year struggle through Siberia to freedom, revealed few, if any, thoughts of meaning along the way (Bauer, 2003). Instead, Forell became increasingly bitter, disillusioned, and cynical, misusing and mistrusting even his helpers. It seems that Forell maintained only the goals of never being captured and returned to the crippling lead mines of Cape Deschnev. Even the thought of his wife and two children in Munich apparently ceased to evoke emotions in him.

It seems unethical and misleading to claim that everyone has the potential to derive meaning from any situation. Baumeister (1991) claimed that imminent threats to health and safety may reduce or eliminate meaning making. Still, the results of the three papers reported here supported the view that some form of meaning making is available to most people even in dire situations. Paper I approached this topic from a psychobiological, growth-oriented and philosophical perspective that enabled the MOI to be developed. This schematic model elucidated the available theories and provided a visual, schematic presentation of the premises underlying states of meaningfulness. The model is transparent because its rationale is uncomplicated and straightforward, although it is not comprehensive. In particular, it fails to account for the human attraction towards nature, beauty, art, poetry, music, etc. This omission is similar to the weakness found in much of the literature concerning engagement, purpose
and meaning. Johnson (2007) asserted that the arts are the culmination of human attempts to find meaning. Often, we want more than entertainment when we attend theatres, galleries or concerts - we also desire comfort, enlightenment and wisdom. Similarly, experiences in nature and the wilderness may contribute more profoundly to the psyche and may provide more than the fresh air, activity and the environmental mastery of esthetic surroundings. Kaplan and Kaplan (1989) argued that humanity’s affinity with nature leads us to relate to it in an existential manner, a thought shared by Hessen (2008), who stated that “This [the intense feeling of nature] might not provide meaning from an eternal perspective, but it gives a deep feeling of well-being, that something is meaningful and that life, despite its ordeals, is something we would not want to be without” (p. 259, author’s translation).

Paper II introduced the Adolescent Life Goal Profile Scale. The life meaning categories from the MOI were adapted to adolescent psychosocial functioning through the Relations, Generativity, Religion and Achievement life goals factors. Analyses of data from the development samples produced a four-factor structure with overall acceptable psychometric properties. The strengths of the ALGPS include ecological validity, simplicity, themes that appeal to respondents and adherence to the zeitgeist of current mental health ideology. Moreover, it measures both the perceived importance and the perceived attainability of life goals, which allows for cross-referencing of these two assessments. The additional information regarding the particular life goal could provide clinical benefits. The following examples illustrate the information provided by the importance and attainability ratings.

- High importance/high attainability represents a generally desired circumstance that potentially contributes to meaning and happiness.
- High importance/low attainability represents an undesirable scenario that may cause dissonance, which suggests that adjustments to either perceived importance or perceived attainability might be warranted.
- Low importance/high attainability might represent the choice of a reflected person with high self-efficacy, although low importance scores on goals like Relations may be a sign of withdrawal or attachment difficulties.
- Low importance/low attainability might indicate depression or apathy, the attitude of an atheist toward Religion or a person with few achievement goals and thereby low expectancies.
- Medium values might represent contentment or indifference.
However, the ALGPS has some limitations in its present form. First, although its psychometric properties are acceptable, they are not excellent (see section 4.2.1). Second, the ALGPS is not (and is not meant to be) a diagnostic tool with normed cut-off criteria. The constructs that were measured are difficult to operationalize, especially for adolescents. As a result, individual ALGPS scores remain open to interpretation, particularly with regard to the relationship between the perceived importance and attainability of life goals. Nevertheless, the findings indicated that challenging the adolescent to elaborate on the scale results could lead to dialogue on existential issues. Examples of this process are presented below.

The findings reported in paper III indicate that patient and non-patient groups did not differ in the importance they attached to the generative, religious and achievement life goals. These significant findings support the view that existential needs continue to be important for individuals facing mental health challenges. Although the patient group scores for all the QoL measures were lower than the non-patient scores, the two groups differed significantly only for the perceived importance of goals pertaining to relations. Patients scored lower on this variable compared with non-patients. Paper II documented how perceived importance of relations had the largest explaining power on the QoL domains - domains that all, on average, were scored lower by the clinical sample than the non-clinical sample. This finding is consistent with studies that have demonstrated links between relationships, health and well-being (Gable & Gosnell, 2011). Seligman (2011 p.21) quotes John Cacioppo, arguing that “loneliness is such a disabling condition that it compels the belief that the pursuit of relationships is a rock-bottom fundamental to human well-being”. Frisen (2007 p. 965) points out that “adolescence can be one of the loneliest times of life”. Moreover, relationship experiences are linked to identity development (Arseth et al., 2009). One can therefore cautiously assume that if professionals can contribute to the patient increasing his or her perception of relations as an important aspect of life, this would cause a gain in well-being and contentedness and perhaps move the individual towards the more beneficial identity achieved or moratorium identity statuses. Respondents who perceived relationships as unimportant generally had low scores on the QoL measures. Here, the ALGPS provides possibilities for the clinician. However, rather than providing a diagnosis, the ALGPS could be used individually to initiate dialogue. Individual results are suggestive more than conclusive, and a professional can only use this information as an entry point (e.g., It appears that you do not perceive having relationships with others as important. For many young people such relationships are a source of purpose and happiness. Can you tell me more about
your preference?). The ALGPS scores should emphasize functioning life goals as well as identifying areas of concern. A few examples that illustrate these points follow.

- It appears that you very much would like to achieve things in life, yet you also seem to think that this is not attainable for you?
- You seem to be a giving (generative) person. Can you tell me more about this?
- You have so many worthwhile goals in life, yet you don’t seem to believe that most of these are attainable. Can you help me understand this?
- What can attaining your achievement goals teach you regarding other goals that you see as important but not attainable?
- You say you are very religious. Is this a resource for you? Why?

When discussing someone’s meaningful life goals, it might also be worthwhile to identify the inner needs of meaning these goals relate to, such as purpose, values, efficacy or self-worth. With the MOI as a guideline, it is possible to identify not only the importance of the life goal but also why this goal is important. This provides insight into the individual’s unique set of life goals, how these connect with the inner needs for meaning and the extent to which these goals are perceived as attainable.

With the exception of Generativity, patients perceived their life goals as less attainable compared with non-patients. The greatest difference was for Achievement goals, which arguably is the life goal that has the strongest flavor of “implementation capacity”, as it for many includes very specific goals. This finding may be in part due to the fundamental attribution error associated with deceptive mental states (Andrews, 2001) and mood effects (Forgas, 1998) rather than the objective attainability of these life goals. This interpretation is strengthened because the clinical sample scored higher than the non-clinical sample on the personality trait of Intellect, suggesting that cognitive ability did not play a role. The patients also scored lower on self-efficacy. The findings reported in paper II show that the perceived attainability of life goals, correlated with all of the QoL measures, particularly for the relations and achievement life goals. Thus, aiding patients in such ways that they come to assess their goals as more attainable would probably increase aspects of their mental health. Perceived attainability could be affected by targeting attribution habits or by the practical assistance towards the pursuit of goals, which would improve self-efficacy in these areas.
Of course, the significant differences between groups found for the traits of Conscientiousness and Emotional stability, which disfavored the patients, suggest that these traits may hinder successful interventions. McCrae (2011) specifically addressed this issue, arguing that although traits remain stable in adulthood, as much as one third of trait variance is influenced by environmental factors. He also notes that although psychologists might find some traits undesirable, they might be valued by those who have them (with the exception perhaps of Neuroticism). Most personality changes from adolescence to adulthood are positive in nature, with increases in Agreeableness and Conscientiousness and declines in Neuroticism (Donnellan, Conger, & Burzette, 2007). As the correlations between the ALGPS life goal factors were modest, these variables may be what McCrae and Costa (2008) refer to as characteristic adaptations, and therapy should “explore options for the development of new characteristic adaptations that are consonant with the patient’s personality” (Harkness & McNulty, 2002 p. 399).

### 4.2 General methodological considerations

#### 4.2.1 Validity and reliability

**Paper II**

For good or bad, tests affect people’s lives and may be, in some circumstances, the only feasible method of making categorical decisions or assessments. A psychological test requires the respondent to do something. In the case of the test battery used in paper II and III, the behavior consisted of checking boxes or drawing circles around numbers to respond to the questions presented in the self-report measures. Still, this “simple” behavior may reflect a variety of physical, psychological and social forces and all such measures have one feature in common - limited precision (Murphy & Davidshofer, 2001). Scale development, therefore, focuses on validity and reliability. Does the scale measure what it purports to measure? Are the inferences made from the test scores justified and meaningful? Is the scale accurate,
trustworthy and dependable? The following section discusses selected validity and reliability issues associated with the development of the ALGPS.

The ALGPS measures four variables. The Relations, Generativity, Religion and Achievements constructs are latent, not manifest (i.e., directly observable), and these constructs are variables rather than constants. Latent variables can be defined and measured through the use of factor analysis (Kim & Mueller, 1978; Thompson, 2004). In the study reported in paper II, EFA was used to reduce a set of items to four underlying factors. Despite the clear theoretical conceptualization of the four life goal factors, the minimum number of hypothetical factors needed to be identified with a high degree of certainty as well as the items that were actually associated with (loaded on) these factors. The three main factor extraction procedures, Kaiser’s eigenvalue rule (Kaiser, 1960), Catell’s scree test (Catell, 1966) and Parallel analysis (Horn, 1965), all supported the four-factor solution. Kaiser claimed that factors with eigenvalues less than 1.0 should not be retained. However, Nunnally and Bernstein (1994) argued that an eigenvalue of 1.0 means different things in different analyses. For 100 variables, it means that a factor explains 1% of the variance; for 10 variables, the factor explains 10% of the variance. As a result, Kaiser’s approach tends to overestimate the number of factors to retain. Kline (2000) echoed this concern, asking whether factors that are only marginal greater 1.0 actually contained more critical information than those marginally less than 1.0. In the main study analysis, factor four had an eigenvalue of 1.45, whereas factor five had an eigenvalue of 0.87. The spread between factors four and five was considerable. With 16 variables in all, factor four explained 9% of the variance. The visual presentation of the drop of each factor’s information value displayed by the scree plot is also based on eigenvalues but uses relative instead of absolute values as a criterion. Catell’s suggestion was to retain those factors that lie above the “elbow”, which can be seen on many plots, and dropping those in the “scree-section” below the elbow. Obviously, results of this approach must be interpreted and may be ambiguous. Figure 2 presents the Scree plot from the main study. Following Catell’s criterion, four factors should be retained because there is a clear break after the fourth factor.
Finally, Field (2009) suggests that Parallel analysis is the best way to determine how many factors to retain. This method compares the actual dataset eigenvalues with randomly generated datasets with same characteristics but with no underlying factors. Factors larger than their “random” counterparts are retained. This approach also supported a four-factor solution.

An EFA with a geomin (oblique) rotation was performed on the 16 items. This rotation method was chosen rather than an orthogonal rotation because the factors were assumed to be correlated with each other to some extent. Many argue that orthogonal rotations are nonsensical for naturalistic data because it is difficult to imagine that one psychological construct is truly independent of another psychological construct (Field, 2009).

The reliability of each factor, estimated by Cronbach’s alpha coefficient (1951), was generally satisfactory. Given the conventional criteria of .70 (DeVellis, 2003), the coefficient for the Achievement factor was somewhat low ($\alpha = .65$). However, the cutoff thresholds have been debated due to the mathematical nature of alpha and the nature of the constructs measured. Alpha is calculated as the average that results from splitting the data into two parts in all possible ways and then computing the correlation coefficient between the data in each half. A major problem is that alpha increases with the number of items in the scale. Cortina (1993) illustrated the problem by describing an example of two scales with an alpha of .80. The first scale was composed of three items with an average correlation of .57 whereas the other scale...
was composed of 10 items with a modest average correlation of .28. This demonstrates the difficulty of developing a brief scale with high internal consistency. Additionally, alpha may be increased by “bloated specific” measures that draw items from a narrower pool than the name of the factor (Kline, 2000). For example, the factor “love of sports” might be based on items that referred exclusively to team sports. Bloated specific measures do not appear to be included in the ALGPS. However, the brevity of the scale suggests that it might be appropriate to reevaluate the items making up the Achievement category and perhaps include several novel items. As DeVellis (2003 p. 97) notes, ”the issue of trading of reliability for brevity should be confined to situations when the researcher has ‘reliability to spare’”. The other concern that must be addressed when discussing alpha values is the construct measured by the instrument. Kline (1993) states that an alpha value of .80 is appropriate for cognitive test and a value of .70 is a suitable cut-off point for ability tests. For psychological constructs, he believes that it is realistic to expect values below .70 due to the heterogeneity of the constructs measured. With the possible exception of Religion, the constructs measured by the ALGPS are psychologically complex, and three of the four factors have satisfactory reliability coefficients greater than .70. Nevertheless, the criteria for cut-off values are not empirically established (Helms, Henze, Sass, & Mifsud, 2006; Iacobucci & Duhachek, 2003), and Charter (2003 p. 300) claims that recommendations for acceptable alpha levels “are little more than personal opinion”.

The decision to measure adolescent personality traits might be questioned because it is generally claimed that personality characteristics are not stable prior to the age of thirty (Matthews, Deary, & Whiteman, 2003). However, although reliability is required for stability, stability is not the same as reliability. Adolescent personality trait development is well established (McCrae et al., 2002). McCrae (2011 p. 201) has concluded that “given the centrality of traits to many of the constructs of positive psychology, the inclusion of trait measures ought to be routine”. The five personality traits are recognizable in toddlers (Zupanic, Gril, & Kavcic, 2006), and Baker, Victor, Chambers, and Halverson (2004) have documented the convergent and discriminant validity of the five-factor model structure of adolescent personality. A cross-cultural analysis of personality trait development from the ages of 12 to 18 found that Extraversion, Agreeableness and Conscientiousness were stable, Neuroticism appeared to increase in females, and Openness to Experience increased in both males and females (McCrae et al., 2002). Although the BFI-44 was developed for adults, De Fruyt, Mervielde, Hoekstra, and Rolland (2000) and Parker and Stumpf (1998) have
demonstrated that adult personality measures are appropriate for adolescent samples. In agreement with the findings of McCrae and colleges (2002), the BFI-44 results in this study revealed that female adolescents scored lower than males on Emotional Stability and that Intellect or Openness to experience increased with age for both sexes. In addition, the internal consistency of the five factors was similar to other adolescent samples (Srivastava, John, Gosling, & Potter, 2003), although Conscientiousness scores were somewhat lower than expected.

**Paper III**

Paper III discussed the rationale for excluding diagnostic or symptom-pressure measures. Although this decision was sound, the study might have benefited from additional data. For instance, The Child Behavior Checklist (CBCL; Achenbach, 1991), which is a self-report measure for children over the age of 11, would have provided a measure of the adolescent’s problems and competencies, such as aggressive behavior, anxiousness, depression, attention problems, social problems, somatic complaints, thought problems and withdrawal problems. Being able to relate these problem areas to the life goal categories might generate additional conclusions and new hypotheses. Moreover, data on ego identity status (e.g., EOM-EIS-II; Adams, Bennion, & Huh, 1989) would have facilitated further inferences between aspects of relations, attachment, intimacy and identity status. Finally, a measure of coping (e.g., A-cope-N; Skre, Arnesen, Breivik, Johnsen, Verplanken, & Wang, 2007) would provide a picture of how young adolescents master their problems. It would be valuable to reveal possible associations between coping orientation and perceived importance and attainability of life goals.

The single criterion for inclusion in the patient group was age and a treatment status at ABUP. Although this simple and transparent design strengthened the validity of the study reported in paper III, study conclusions were general rather than specific. We document some potentially important tendencies of similarities and differences, and offer possible explanations of these. Still, future studies that include diagnostic and/or symptom information would be worthwhile.
4.2.2 Generalizability across cultures

The results reported in papers II and III are not generalizable. Because the ALGPS has not been used in other studies, it is not clear that the results are replicable. In addition, the similarities and differences between the clinical and non-clinical samples in the study reported in paper III might be specific to the south Norwegian culture. However, in line with the findings, a study by Jozefiak and colleges (2010) showed that psychiatric outpatients from Mid Norway (8-15 years old) scored lower on QoL levels than public school students. Furthermore, Nikapota & Rutter (2008 p. 208) note that diversity within adolescent groups is as great as that between groups so that “it is not...likely that there are major differences among sociocultural or ethnic groups in the nature of risk and protective processes”. In a multicultural study of European youth, Gelhaar and colleges (2007 p. 153) found that “coping behavior in adolescence reflects the influence of a more basic or underlying feature that is not necessarily tied to cultural heritage”. Still, general cultural differences between Europeans and Americans should be noted in interpreting the data from these papers. Broadly speaking, Americans view sexuality as inappropriate and troublesome rather than normal and healthy compared with Europeans (Crockett, Raffaelli, & Moilanen, 2003), are more involved in religious life (Lüchau, 2004) and appear more oriented towards career success (Okulicz-Kozaryn, 2011).

4.2.3 Sample size for statistical analyses

For the number of variables measured, a sample size of 244 and 294 is satisfactory for EFA and CFA, respectively (Kline, 2000), although Tabachnick and Fidell (2007, p. 613) describe a sample size of greater than 200 as “fair” and a sample greater than 300 as “good”. Palant (2007) claims that the acceptable sample size has decreased over time and that the ratio of subjects to items might be more relevant. She presents recommendations ranging from five to ten cases for each item included in the factor analysis. In paper II, this ratio was 11.6 to 1 for the EFA and 18.4 to 1 for the CFA.
In paper III, group differences were found with a sample size of 244 non-patients and 54 patients, often at the .001 level of significance. A post-hoc power analysis to identify the probability of avoiding a type II error in a test of the difference between patients and non-patients for the Relations life goal was 0.99 (one-tailed $\alpha = 0.05$; Faul, Erdfelder, Lang, & Buchner, 2007). However, the differences between the groups for the item to have a boyfriend/girlfriend, which was the item with the lowest statistically significant difference of the Relation factor items, statistical power was 0.73 - lower than the 0.80 threshold of adequacy (ibid.). Because the patient group was relatively small, the use of subsamples was avoided. For instance, because the patient group included only 15 boys, the results of the analyses including sex as a fixed factor should be interpreted with caution.

Missing data did not appear to present a serious problem because few data were missing and the missing data did not exhibit any patterns. In a few cases, the entire attainability section of ALGPS was incomplete, and measures were left uncompleted for some test batteries. This was most likely due to carelessness, such as overlooking a page in the 11-page test.

4.3 Some final considerations

4.3.1 Some concerns about, and critique of, the concept of meaning

“People want to think that there is some ultimate purpose or meaning behind their lives. Most probably there is not. Like the search for God, the search for meaning is a wild goose chase” (Stewart-Williams, 2010 p. 197).

In 1927, the American Journal of Psychology published an article titled The ambiguous concept: meaning. The abstract concluded that “There is no reason why psychology should insistently claim the concept of meaning” (Calkins, 1927). Critics have since argued that the constructs of meaning, meaning making and meaningfulness are inherently vague, lead to faulty reasoning and delay needed diagnosis and treatment (Lyketsos & Chisolm, 2009). Johnson (2007 preface ix) argues that “meaning is a big, messy, multidimensional concept”
and Netland (2009 p. 605, author’s translation) refers to meaning as a “potato with an indeterminable flavor” due to the large variety of applications assigned to this term. These objections are to some extent valid and should not be taken lightly. Fortunately, Netland welcomes research that may aid in lifting the “fog”, because, she concludes that the research on meaning “is not astray...and means very much positive for the field of psychology” (p. 605). Finally, Netland proposes constructs such as goals (somewhat in line with this thesis) that might more accurately replace the use of the term meaning.

Wong (2007) warns that much of the research in positive psychology fails to include the full range of human experiences and that the focus on meaning has often been in the context of happiness. Meaning is also examined in terms of pursuit and possession (Steger et al., 2006). There is some merit to these arguments and I agree with Wong (2007 p. 237) when he notes that “the acid test for any model of positive psychology is how it fares in the boundary situations of suffering”. Nevertheless, stress-related growth is the most studied outcome of meaning making (Park, 2011), and there are many examples of how meaningfulness and meaning making are fundamental to psychological functioning in times of distress (e.g., Gillies & Neimeyer, 2006; Riolli, Savicki, & Cepani, 2002).

The above arguments question whether the term meaning should be included in a psychological vocabulary, or whether other terms and concepts are more appropriate and informative. Because of the increased attention the concept of meaning has received from psychologists, it seems unnecessary to invent new terms to replace established terminology. The strength of meaning and meaningfulness is that this concept is expressed in everyday language. However, just as with other terms that describe human strengths and virtues, the study of meaning must be scientifically rigorous, precise and transparent.

4.3.2 The relation of life goals to character strengths

Character strengths have been developed as positive psychology’s counterpart to the DSM-IV and are measured by the Values in Action Inventory of Strengths (VIA-IS; Park & Peterson, 2006; but see Noftle, Schnitker, & Robins, 2011, for criticism of the instrument’s psychometric properties). Although measurement of character strengths (Peterson & Seligman, 2004) was contemplated during the design of the study reported in paper III, there
was no Norwegian adolescent version of the instrument, and it was not feasible to include the 240-item VIA-IS in the test battery. Instead, to measure adolescent traits, a more traditional personality inventory served as a proxy for mental health and as a methodological control for response set and attribution characteristics.

### 4.4 Implications

Although the three papers included in this dissertation are related to each other in a logical order and manner, their implications differ. Paper I is intended to be a theoretical clarification and simplification of a “hard to grasp” psychological phenomenon. Its contents reach beyond the scholarly realm, and it was welcomed in internet-based discussion forums and blogs, particularly those focusing on mental health. Despite its technical language, the appeal of the paper is found in its message that human beings thrive when experiencing life as meaningful and that we alone decide what this meaning should be. This perspective towards the potential for optimal living is parallel to but largely independent of other approaches to mental health. Paper I also demystifies the connections between states imbued with meaning and the various forms of well-being. It includes little spiritualism, new age rhetoric and humanistic ambiguities, thus appealing to the broader field of psychology. The editorial preceding the article states that “There is a need for a psychological science that to a larger extent takes a contextual perspective in which health and well-being are understood as intimately related to the physical, social and cultural surroundings” (Strumse, 2009 p. 730, author’s translation). The editor’s view coincides with that of paper I and the growing tendency in many hospitals to adopt a biopsychosocial approach to mental health challenges.

Paper II introduces the ALGPS, which might contribute to basic research as well as clinical practice. Few studies have specifically investigated adolescents’ meaning making, and clinically existential foci are not frequently defined as independent goals in their own right. Furthermore, the ALGPS differs from most other scales because it does not include a single “super factor of meaning” and because it measures attainability at both the item and factor levels. For many young people, completing the ALGPS initiated introspection. Feedback from teachers and clinicians has been overwhelmingly positive. Most respondents enjoyed filling out the forms and many were willing to share their experiences and thoughts afterwards.
Discussing one’s goals and dreams for the future appears to engage most individuals and is rarely met with indifference. The conceptualization and rationale for developing the ALGPS has been well received by many professionals, patients and mental health interest and support groups, some of which, paradoxically, have an inherent skepticism towards psychometrics in general.

The ALGPS can also contribute to basic adolescent research and social demographic studies. As more data are obtained, the ALGPS may provide new perspectives on adolescent psychosocial development in areas such as moral and identity development, autonomy, existential processes, and efficacy. It might explain differences in attitudes or behaviors between groups of adolescents. Because it is a new scale, its use might generate new research hypotheses.

Paper III uses the findings reported in papers I and II to provide a clinical perspective. Although individuals share many psychological processes, these processes are also highly idiosyncratic. Because of the boundaries that are often drawn between patients and non-patients, an important finding of the study was that the need for self-concordant meaning, expressed through the choice of life goals, continued to function during a period of mental health problems although the patient group scored considerably lower on overall life satisfaction compared with the non-patient group. However, there were also major differences between patients and non-patients that might help explain the poorer mental health of the former group. The key issue was the difference between the groups’ averages on perceived importance of relational life goals. As this life goal also was an influential predictor of the QoL variables, working with patients on this particular life goal appears prudent.

The findings of these studies might also be relevant for preventive mental health work at the municipal level. Although the clinical sample reported a lower perceived attainability of most goals, indicating reduced self-efficacy and lack of support, the presence of life goals remained largely unaffected by mental health problems. As a result, everyday environments may also provide natural arenas for addressing young people’s health issues, and in the Agder region of south Norway, ambulant teams from Sørlandet Hospital increasingly perform mental health work in the patient’s daily environments rather than in hospital settings. Because people are best understood through the interplay between person, situation and behavior (Dreier, 2011), hospitalization may make it difficult to identify the optimal approach to a patient’s problems. Ultimately, the perceived attainability of goals may, to some extent, be linked to the standard
of living, parental education, family income, health, social interaction, access to public health services, and environmental safety. Ravens-Sieberer, Erhart, Gosch, and Wille (2008) found that poor social support was associated with a higher prevalence of adolescent’s mental health problems and that well-functioning promoted resilience. Thus, the family and society might facilitate the individual’s perceived attainability of goals. A current tragic example of the role of society is provided by the financial crisis in Greece, Portugal, Italy, Ireland and Spain, which has led vast numbers of young people to experience a collective collapse of opportunity and hope for the future.

4.5 Future perspectives

“Yet many questions remain: How aware are individuals of their goals and purposes? How well do individuals’ expressed goals match with enacted goal-directed behaviors? Are those with more consistency across beliefs and goals better off than those who beliefs and goals conflict with one another?” (Park, 2011 p. 331).

In Norway, psychiatric illnesses, mental health problems and psychological crises are increasingly understood and treated as the outcome of biological, psychological and sociological factors. This multidimensional approach has led many health institutions to reevaluate their services. If the uniqueness of the individual is acknowledged, and the problems of the individual are colored by this uniqueness, the therapy offered must be flexibly tailored to the individual as well. Being expert in their own lives, patients should be able to choose the path to recovery among the available approaches. This would require that mental health services be provided by professionals whose techniques reflected a range of traditions and ideologies. The professional and ethical consequence of implementing this approach is that the patient owns the treatment and becomes a member of the clinical team. Because a belief in the appropriateness and effectiveness of a treatment predicts a positive outcome (Camacho, Landsman, & Stremersch, 2010; Nix, Bierman, & McMahon, 2009), patient participation and active involvement in treatment will likely benefit the recovery process. When there are several goals to work towards, and a variety of approaches that are available, the ethical consequence is that the patient must play an active role in defining the treatment.
Because there is no single pathway to improved mental health, a range of evidence-based practices are available in many healthcare facilities. The current broadening of paradigms thus calls for the development of new interventions that adopt this wider focus (Luchins, 2010). This study introduced the MOI and the ALGPS, which both contributed to a deeper understanding of how young people construed their life goals and how this was related to quality of life and mental health. The study also found both similarities and differences between patients and non-patients in defining life goals. The study findings suggest the following research topics.

- Are ALGPS results replicable across large samples in other regions and nations?
- Are the four life goal factors composed of empirically measurable facets, and will future distinctions between these facets be useful?
- Are the similarities and differences between patients and non-patients in defining life goals related to specific symptoms or diagnoses?
- Can the ALGPS be validated against other therapeutic outcomes?
- What characterizes people with different life goal profiles? Do profiles predict aspects of mental health?
- What role should nature, beauty, art, poetry and music play in future research on the relationships between adolescent meaning making and mental health?
- Will increasing the perceived importance of Relations in young people improve their mental health?
- Will increasing the perceived attainability of important life goals in young people improve their mental health?
- Will increasing the number of important life goals benefit mental health?
- Do life goal profiles change as mental health improves?

Study findings also indicate that future research on the ALGPS requires studies incorporating longitudinal designs

- To determine the stability of the ALGPS; and
- To identify causal relationships between mental health and the perceived importance of relationships.

In addition, further refinement of the ALGPS seems warranted to
• Develop a manual for the clinical use of ALGPS;
• Develop a revised version of the ALGPS;
• Develop an Adult Life Goal Profile Scale; and
• Develop a version of the ALGPS that measures the relationship of each life goal with the inner needs for meaning (i.e., the 16 connections of the MOI).

Future studies in the field of adolescent psychology that provide the knowledge outlined above would promote the development of clinical approaches that incorporate existential growth as a means to improve mental health. The ALGPS could be included in randomized clinical trials to develop new evidence-based existential therapy for young people. Because a major limitation of experimental research is the lack of assessment of long-term effects (McCrae, 2011), quasi-experimental longitudinal designs are needed. The ALGPS could be included in this type of study, which would monitor participants from early adolescence through mid- and late adolescence and perhaps onwards into adulthood.

The constructs of goals, purpose and meaning are complex, and caution should be exercised in inferring causal relationships with other aspects psychosocial functioning. Critics argue that academic precision is hampered by unclear definitions of meaning and that the pursuit of meaning may lead to counterproductive introspection and rumination. Striving towards a continuous presence of meaning is an ideal most people never attain and believing otherwise might lead to the feelings of inadequacy. Human nature is inherently changeable, and periods of indifference, boredom and apathy are inevitable for most of us. Ongoing research must reflect the multifaceted nature of these topics and remain cautious about providing blueprints for healthy living. Still, acknowledging that complex phenomena are difficult to investigate does not mean that they should not be studied. The abundance of “how to become a fulfilled person” coaching literature that has used and misused respected theories should not deter further serious research on these topics. On the contrary, this should motivate an increased academic effort to learn how we can better harness the potential of human meaning making.
Conclusions

Together, the three papers included in this dissertation span a broad range of topics which all relate to the goals and meaning in the lives of adolescents. The following are the main conclusions of this work:

Humans have the inherent desire to live lives that are meaningful, and the experience of meaningfulness is associated with improved psychological functioning. Although meaning is influenced by culture and life situations, it is ultimately personal. Nevertheless, some universal conclusions can be drawn. The MOI was introduced as a schematic representation of 16 conditions that allow the emergence of states saturated with meaning. These meaningful connections can lead the individual towards increased SWB and improved mental health. Moreover, the general principles of adult meaning making appear to apply to adolescents as well.

The ALGPS was developed to aid the identification of which life meaning categories, as suggested by the MOI, the individual youth is most likely to find meaningful. We present empirical support for the scales ability to measure perceived importance and perceived attainability of the Relations, Generativity, Religion and Achievements life goal categories.

ALGPS data from clinical and non-clinical samples indicated that although patients reported considerably lower QoL than non-patients, only the relational life goals were perceived to be less important. Patients also perceived their relational, religious and achievement life goals to be less attainable compared with non-patients. The similarities between the samples are as important as the differences. Three of the four life goals remained “intact” despite adverse life conditions, suggesting that the drive towards personal growth is resilient in the face of challenges to mental health. The Relations life goal appeared to be the single most influential life goal for many aspects of psychological functioning, and the comparatively lower perceived importance of this goal for patients demands clinical attention.


