Running head: MEANING IN LIFE AND PSYCHOLOGICAL WELL-BEING

Meaning in life and its relationship to psychological well-being in adolescents

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Abstract

800 Dutch adolescents from 11 to 18 years old (average age: 14.8) wrote about the categories that provide meaning to their life and indicated how important each category was to them and how satisfied they were with how this category was developing in their lives. They also answered questions about their spiritual/religious experiences, beliefs and values, their sense of self transcendence and their psychological well-being. The group was split up according to their source of personal meaning: ideology (N=209) or everyday activities (420). The relationship between experienced personal meaning in life and psychological well-being proved to be much larger for the *ideological meaning* group (r=.58) than for the *everyday meaning* group (r=.37). The role of spiritual meaning in life and self transcendence were different in both groups. Although the direction of the relation is unclear, as the data are correlational, encouraging youngsters to develop an ideological framework instead of relying on everyday principles may enhance their well-being.

Meaning in life for adolescents and its relationship to psychological well-being

The human being is, as far as we know, the only creature which contemplates itself. We don't only think, feel, dream and act, but also wonder why and how we do all those things. This possibility to contemplate ourselves presents both opportunities and challenges. Questions about the purpose and meaning of our lives are inherently complex. They have been answered in profoundly different ways throughout history and across cultures.

The construct of meaning is defined by Reker and Wong (1988) as a sense of order, coherence and purpose in life; the attainment of meaningful goals, resulting in a feeling of fulfillment. Debats (1999) brings a relativistic approach to the subject: "when individuals state that their lives are meaningful, this implies that (a) they are positively *committed* to some concept of the meaning of life, (b) this concept provides them with some *framework* or goal from which to view their lives, (c) they perceive their lives as related to or *fulfilling* this concept, and (d) they experience this fulfillment as a feeling of *significance*.

A sense of meaning doesn't have to be the same as a religious or spiritual framework. Yalom (1980) differentiates between two levels of meaning: a cosmic level, regarding questions of significance and coherence, and a terrestrial, personal level, regarding life purpose. While the cosmic question "why do we live?" does not require an immediate answer, its terrestrial, personal counterpart "how should we live?" does. At the same time, the two are not unrelated. Most people who do possess a spiritual framework will also automatically experience a personal meaning in life, since the latter logically flows from the former.

Although the quest for determining one's meaning in life can be traced back to childhood and continues to develop across the entire life span, adolescence is a particularly interesting stage of life. At this age, people reach a new level of cognitive development which enables them to solve problems through abstract reasoning, considering logic and drawing conclusions. The surrounding reality now becomes just one of an infinite number of possibilities (Piaget, 1954). At least some adolescents will subsequently start considering alternative organizations of the world, as well as deep questions regarding meaning, truth, justice and morality (Siegler & Wagner Alibali, 2005). They understand that any rule is a product of social agreement and that rules therefore can be changed.

These new cognitive skills can be used to develop a personal morality (Kohlberg, 1984), identity (Erikson, 1963) and faith (Fowler, 1981) that provide meaning to life. This

framework, however, is not yet "complete" and doesn't contain the nuance and firmness of an adult's framework.

Meaning in life and psychological well-being

A substantial amount of research has shown a strong relationship between the experience of meaning in life and psychological well-being.

Ryff and Keyes (1995) found considerably strong positive correlations between the variables "purpose in life" and several indicators of psychological well-being, as well as negative correlations with indicators of psychological distress, in a sample of 1108 adults (see table 1). Zika and Chamberlain (1992) obtained similar results amongst 194 young women (see table 1).

Table 1: correlations between purpose in life and several indicators of psychological well- and ill-being.

	Ryff & Keyes (1995)	Zika & Chamberlain (1992)
Positive affect	.45	.78
Happiness	.41	-
Satisfaction	.55	.71
Psychological well-being	-	.74
Depression	-.60	-
Negative affect	-.29	-.68
Psychological distress	-	-.65

These data from "normal" samples are supported by findings from at risk groups. "Sense of purpose" is a protective factor for children from families who live below poverty standards. The construct is related to resilience, a characteristic necessary to make a social advancement (Beltman & McCallum, 2006).

Debats (1996) and Shek (1991) assessed that the sheer presence of a framework or purpose in life without a concomitant sense of fulfillment has little, if any, positive impact on participants' general and psychological well-being. Correspondingly, reports from clinicians (e.g. Yalom, 1980) confirm that psychopathology and absence of meaning interact, causing critically low levels of engagement, that is, commitment in life.

Societal changes in freedom and autonomy affecting the construction of meaning in life

Whereas the conditions and possibilities for creating a framework in adolescence have not changed over the time, the challenges that modern youngsters face are radically different from those faced by previous generations. Schweitzer (2006) describes how, over the last century, the individual gained influence on his own life course, which was previously largely determined by the community. Children are now aware, from a very young age, that everything they learn from their parents can be and is viewed differently by others. Religion, once the largest determinant of both morality and meaning in life, is now regarded as a private business that should be left to the individual. Strommen and Hardel (2000) found that many parents share the belief that their child should be free to decide which religious views it wants to keep and which religious practice appeals most to them. Roof (1993) adds that it is not self-evident anymore that even religious parents will familiarize their children with their religious tradition.

This development creates a larger amount of freedom to determine one's own morals, values and meaning in life, which is regarded as a good development in the western world and is defended as such. At the same time, cultural philosophers as well as empirical researchers are worried about the consequences of this new-found freedom.

Decades ago, Fromm (1947) formulated how freedom can lead to the refusal to take a stand He considers the indifference of people towards themselves as "the true moral issue today". According to him, man encounters this indifference in the fact that we have lost a sense of meaning and of the uniqueness of the individual. Berlin (1958) warns against the conception of liberty in a negative sense, or liberty as defined by the fact that others don't interfere in a person's business. The larger the area of non-interference, the larger someone's liberty. This idea is contrasted with the concept of positive liberty: being the instrument of one's own will; being a subject instead of an object. Positive liberty implies being moved by reasons, conscious intentions that belong to the individual, not by causes that are imposed on him by someone else. Buber (1961) adds that man should take himself as a starting point, but not as the end point. Frankl (1959) agrees, discussing the importance that man is occupied by more than merely himself.

The consequences of this reasoning are formulated by Yalom (1980), who emphasizes that responsibility means authorship: being aware that a person creates his own self, destiny, life circumstances, feelings and, if there is any, suffering. This authorship can be embraced or avoided. When there are no absolutes, nothing is more important than anything else and

everything just comes down to indifference. Ideally, according to the author, people find a life direction in altruism, dedication to a cause and creativity, and thereby achieve a sense of self transcendence.

In recent years, Dalrymple (2005) states: "children and adolescents still seem to be occupied with the question of what constitutes a good life and why, but show little inclination to commit. When young people want to compliment themselves, they describe themselves as "non-judgemental". To them, amorality is the highest form of morality". Dohmen (2007) argues how freedom and autonomy have become identical to Berlin's notion of negative freedom, or non-interference. He describes how interference is now immediately experienced as paternalism. His writings paint the picture of society as a mix of individuals who are centered around themselves, and haven't learned how to shape their positive freedom, or the direction of their lives. Seligman (2002) describes how a hedonistic approach results in short-term happiness, whereas pursuing a path in which a cause or an institution supplies a sense of commitment to something greater than oneself provides the most lasting form of well-being. He refers to this highest stage as *a meaningful life*.

Several authors provide theoretical reasons for the relationship between a meaningful life and well-being. Gestalt theory (Schulte, 1938) argues how man wants to be able to understand the world and to place events into a frame of meaning. Failing to do so results in frustration, dissatisfaction and helplessness. Kluckholm (1951) chooses a moral approach, reasoning that meaning in life provides norms and values which don't only enable people to take decisions of their own, but also navigate successfully in a group. Becker's (1975) existential theory focuses on transcending death by leaving something behind that matters and makes a difference.

From this view point, a more ideological approach might have a stronger effect on psychological well-being than hedonistic goals, and strict relativism may not be sufficient.

Empirical research on meaning in life
Empirical research in this area answers the question what kind of framework adolescents actually mention when discussing meaning in their lives. DeVogler and Ebersole (1983) asked 116 13- to 14-year-olds to write about the three most important categories of meaning in their lives, put them in order of importance and provide an example of each of them. The number of participants that understood the concept of meaning of life and was able to explain theirs was as high as in other, older, age groups. However, while the category that was mentioned

by most of them was "relationships", most of the other important categories were of a more mundane nature: activities, school and appearance. None of the participants expressed experiencing no meaning in life at all.

Baessler and Oerter (2003) replicated this finding by establishing the category of "pleasure" as one of the most important elements of meaning for middle- and upper-class students in Peru, but not for lower-class students, immigrants and native Indians.

Henker, Whalen and O'Neil (1995) asked 194 children and adolescents what they worried about the most (i.e. "things that people think deeply about, or very often"). Elements that were mentioned by most participants were school (60.3%), health and security (41.8%), the environment (28.4%), social relationships (24.7%) and death (22.7%). Only 4.6% indicated worrying about the meaning of life.

At the same time, Twenge found, in a series of meta analyses, that young adults in 2006 were significantly more narcissistic than they were in 1979 (Twenge et al., 2008) and were experiencing levels of fear and anxiety that were, in the 1950s, only found in psychiatric hospitals (Twenge, 2000). High correlations with social indicators such as divorce and criminality suggest that decreasing social connectedness and increased environmental threats play a part in causing youngsters to focus on themselves as a means of survival. Twenge et al. (2004) also found that between 1960 and 2002, youths increasingly feel that their life courses are determined by outside factors (external locus of control) instead of their own acts (internal locus of control). The implications of these results are exclusively negative, since an external locus of control is associated with low school achievement, helplessness, ineffective stress management and depression. These findings gain significance when considered against the background of Maslow's (1970) hierarchy of needs. According to this hierarchy, the most basic needs are purely physical: air, water, food and sleep. They are followed by the need for safety (security, constancy), psychological and social needs (love, acceptance, belonging) and self esteem (achievement, status, responsibility and reputation). At the top of the hierarchy is the need for self actualization: the need to fulfill one's potential, encompassing a sense of connection with the broader universe. Unfulfilled needs at the bottom end will prevent someone from achieving higher-order needs: "Someone who is dying of thirst, forgets his thirst once his oxygen is cut off". Likewise: if people don't feel safe, higher order processes like the search meaning in life will not or hardly be addressed.

Several researchers in the cognitive field support this idea. Landau et al. (2002) noticed that once basic feelings of safety are undermined, people will start using more heuristics and respond more positively to information that is consistent with existing schemes and

stereotypes. Elliot, Sheldon and Church (1997) found that fear leads to defensiveness. People who obtain a higher score on neuroticism pursue avoidance-oriented goals instead of approach-oriented goals. This group was also significantly less happy.

Pysczynski, Greenberg and Goldenberg (2003) confirm that security and safety are necessary for open, integrative information-processing. Deci and Ryan (2000) prove how this kind of information-processing can lead to a more self-determined, coherent perception of the self and the world. Pyszczynski et al. (2003) also pinpoint an important paradox posed by the postmodern society: being confronted with different world views offers an opportunity and challenge that could lead to more integrative processing. At the same time, it presents more difficulties to achieve the sense of security and safety that is necessary for this kind of processing. One way to control fear and anxiety is by clinging to one's own world view.

To sum up, theoretical research addresses the concern that adolescents today will be reluctant to develop a framework of meaning for themselves, other than hedonism and non-interference. These principles may not produce the same long-lasting happiness as a ideological framework would, that is also focused on factors outside the individual. The question is whether a purely relativistic view point, where meaning in life is assumed as long as adolescents experience a sense of fulfillment of their self-formulated goals, is really sufficient.

Empirical research has not yet established this connection. Studies have indicated that youngsters resort to rather mundane categories of meaning, while at the same time they feel more fear and anxiety than their counterparts from earlier age cohorts. Fear, as well as the belief that efforts will not contribute to actual changes in the world around them, may cause them to focus more on themselves than before, resulting in significantly higher scores on narcissism. People need to feel safe before they are able to achieve personal growth.

The present study

This research investigates how adolescents (11- to 18-year-olds) handle questions of meaning. It also analyses whether youths who succeed in creating an ideological framework of meaning for themselves, whether religious or not, are in fact happier than those who rely on a predominantly everyday approach.

The goal of this study is twofold: first, it will complement the existing research on the perceived trend in categories of meaning in life with up to date information about a large, Dutch population of adolescents. Second, it will promote the current understanding of the relationship between different categories of meaning in life and psychological well-being.

Research questions and hypotheses

The research questions are as follows:

1. which categories of meaning in life are considered most important by adolescents?
2. what is the relationship between spiritual and personal meaning in life?
3. what is the relationship between meaning in life and psychological well-being for people with different orientations of meaning?

The hypothesized answers are:

1. Adolescents derive their meaning in life mainly from the following categories:
   a. Hedonism, or a life that is primarily "fun". Because of the post modern societal emphasis on individualism and the absence of external guidelines, more youths are expected to resort to this category;
   b. Relationships; this category is consistently considered an important source of meaning among different age groups;
   c. School; being a central aspect of life for adolescents, this category has been mentioned frequently by this age group in earlier studies.
2. Although finding a cosmic, spiritual meaning in life is not a condition for finding a terrestrial, everyday meaning, the two are expected to show a positive relationship.
3. Meaning in life will show a positive correlation to psychological well-being. However, the relationship will be stronger for people who derive meaning from an ideological framework than for those who rely mainly on a hedonistic orientation. A direct relationship is expected to be complemented by an indirect relationship, through self transcendence.

The hypothesized model that will answer research question 1 and 2 is displayed in figure 1.
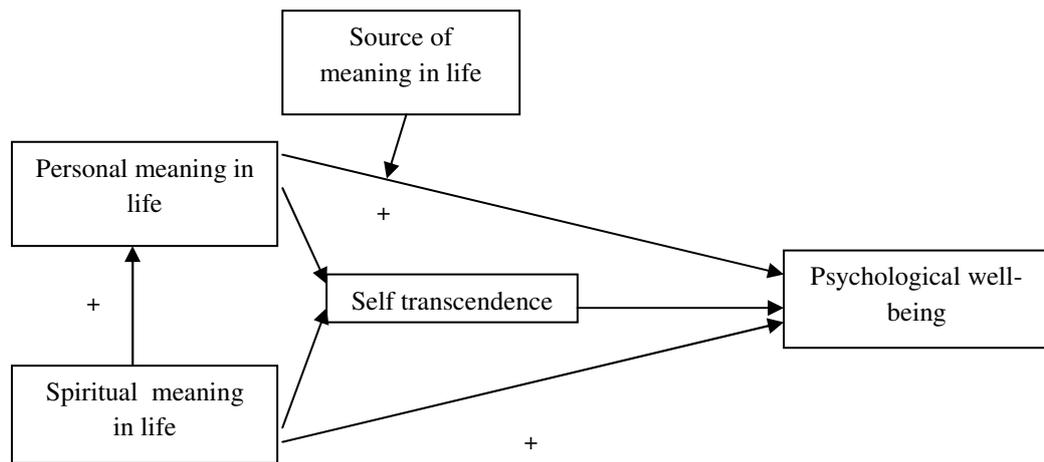
Figure 1: the hypothesized model on the relationships between meaning in life and psychological well-being.

Method

Participants

The participants were 800 Dutch secondary school students from 7 different schools across the Netherlands. Initially, all 40 schools in one region of the Netherlands (Noord-Brabant) were approached by a letter outlining the research project and asking for their participation. Four schools agreed to participate in the study; one of them was enthusiastic about the project and asked a partner school to participate as well, which they did. Two more schools from a different region in the Netherlands (Zuid-Holland) joined in based on acquaintance with the researcher and affiliation with the subject.

The students had an average age of 14.8 years. The characteristics of the group are outlined in table 2. The distribution between sexes was equal (50 % boys and 50% girls). The Dutch secondary education system consists of three levels (from highest to lowest): VWO (preparatory scientific education), HAVO (higher general secondary education) and VMBO (preparatory secondary vocational education). The participant group consisted of 42% VWO-students, 25% HAVO-students and 33% VMBO-students. Almost half of the group (46%) indicated they did not have a religious orientation. The other students mainly referred to themselves as Christian (45%). On a 5 point Likert scale, the religious students answered two items about how important their religion was to them and how much it played a part in their daily lives (0=not at all, 4=extremely). Their average score was 1.01 (*sd* = .94), which translates on the scale as "a little".

For the SEM part of the analysis, a distinction was made between adolescents with a predominantly everyday approach to meaning in life and those with a more ideological approach. For this purpose, the group was split up according to their use of the ideological and everyday categories on the SMiLE (see results section).

One group consisted of 420 adolescents used more everyday elements (sports, school, materialism and job) when describing their personal meaning in life than they used the category of ideology. These students had an average age of 14.78 years.

The other group consisted of 209 adolescents who described ideological considerations as a source of meaning in life. They used the ideological category (personal growth, service (helping others), beliefs, existentialism, future and happiness) more than they used the everyday category. Their average age was 14.82.

The characteristics of all groups are summarized in table 2. The two groups resemble the overall group as well as each other: they show no differences in average age, educational level, religious orientation, role/importance of religion or place of residence. The *ideological meaning* group, however, contained a significantly higher percentage of boys than the *everyday meaning* group.

Table 2: participant characteristics

	Overall Group (N=800)	%	Everyday meaning group (N=420)	%	Ideological meaning group (N=209)	%	Test for differences
Age	14.8	-	14.78	-	14.82	-	$t(386)=.373; p=.710$
Sex							
Boys	397	50	187	45	115	55	$X^2(1, N=626)=6.193; p<.05$
Girls	400	50	231	55	93	45	
Unknown	3	0	2	0	1	0	
Education							
VWO	335	42	172	41	105	50	$X^2(2, N=628)=5.33; p=.07$
HAVO	201	25	103	25	48	23	
VMBO	264	33	144	34	56	27	
Religion							$X^2(7, N=626)=10.22; p=.18$
Christian	358	45	185	44	107	51	
Jewish	3	0	1	0	1	1	
Muslim	38	5	19	5	12	6	
Hindu	6	0	1	0	3	1	
Buddhist	3	0	1	0	1	1	
Other	17	2	9	2	7	3	
None	370	46	200	48	78	37	
Unknown	5	0	3	1	0	0	
Role/importance of religion	1.01	-	1.03	-			$t(270)=.569; p=.57$

Adolescents who mentioned neither the ideological, nor the everyday category, were excluded from this part of the analysis, as were the adolescents who used both categories equally often (N=171 participants in total).

Procedure

A written questionnaire was administered at the schools, during a class. The students were asked for their cooperation and then received the questionnaire with brief instructions. Students were informed about the anonymous nature of the study and were encouraged to ask questions if they were unsure about the meaning of a question or word, which they did. It took the students approximately 20 minutes to complete the questionnaire. After completion, the students handed in the questionnaires with the researcher and were thanked for their participation.

Measures

A copy of the questionnaire is provided in appendix 1.

1. Spiritual meaning

The relevant subscales of the Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research (MMRS; Fetzer Institute, 2003) were used to assess experienced spiritual meaning in life. The subscales that were used in the questionnaire were: daily spiritual experiences, meaning, beliefs/values, forgiveness, and religious/spiritual coping (i.e. using religious/spiritual beliefs and experiences to deal with problems). For all dimensions, several statements were provided (see table 3) of which the participants could indicate on a 4 or 6 point Likert scale to what extent the statement matched their experiences. The brief version of these subscales provided by the Fetzer Institute was used.

To enhance the accessibility of the instrument to participants from different religious backgrounds, the word "God" was replaced by "a higher power". Johnstone, Franklin et al. (2008) succeeded in doing this without significant changes in the reliability coefficients. Since there was no Dutch version available for this instrument, a translation was made by the researcher.

The MMRS was expected to produce 5 independent subscales:

1. daily spiritual experiences. Typical item: *I feel the presence of a higher power*. Answer categories: 6 point Likert scale ranging from "many times a day" to "never or almost never".

2. meaning. Typical item: *The events in my life unfold according to a divine or greater plan.* Answer categories: 4 point Likert scale ranging from "strongly agree" to "strongly disagree".

3. beliefs/values. Typical item: *I feel a deep sense of responsibility for reducing pain and suffering in the world*. Answer categories: 4 point Likert scale ranging from "strongly agree" to "strongly disagree".

4. forgiveness. Typical item: *I know that a higher power forgives me*. Answer categories: 4 point Likert scale ranging from "always or almost always" to "never".

5. religious/spiritual coping. Typical item: *I look to a higher power for strength, support, and guidance*. Answer categories: 4 point Likert scale ranging from "a great deal" to "not at all".

Two separate factor analyses were performed because the first category had a Likert scale with more answer categories than the others (6 versus 4 categories). The daily experiences subscales proved to have a one factor structure, as expected (α=.85). However, on the other four subscales, factor analysis failed to produce the expected division, suggesting a one factor solution instead (α=.80) with five items that either formed a factor of their own or had high factor loadings on different factors. They were excluded from further analysis.

Observation during the administration of the test proved that the participants considered the MMRS as the most difficult part of the questionnaire. Some students didn't read the instructions well and asked, for instance, whether their own father also counted as a higher power; others mentioned that the questions were "vague" and may have lost their interest in this part of the questionnaire. For this reason, the responses were screened to exclude participants who obviously didn't answer the MMRS seriously, ticking all boxes on the right or left hand side of the form or creating diagonal patterns. For students who only showed such a pattern for one part of the MMRS, their responses to the other subscales were considered valid. 49 students (6%) were excluded from the analysis, based on this criterion.

2. Personal meaning

Fegg, Kramer, L'hoste and Borasio (2008) developed a respondent generated, idiographic approach which they named the Schedule for Meaning in Life Evaluation (SMiLE). They asked participants to identify 3 to 7 domains that provided meaning in their lives at this moment. No answer categories were given. Subsequently, the participants were asked to indicate the importance of the different domains on a 5 point Likert scale ranging from "a little important" to "extremely important", as well as their satisfaction with themselves on the

domains on a 7 point Likert scale ranging from "very unsatisfied" to "very satisfied". One can be satisfied with a domain while not considering it particularly important, or be unsatisfied with a domain that is extremely important to them. Both cases have different implications for the relative amount of experienced meaning. A person is assumed to experience more meaning in life when he is satisfied with himself in domains that are most important to him. A weighted score can be computed based on a combination of the two scales to calculate the amount of experienced meaning in life (ranging from 0 to 100, with higher scores reflecting higher experienced meaning).

The instrument was selected for this study because of its theoretical construct, which matches the relativistic notion of meaning mentioned in the introduction and combines the amount and content of the experienced meaning in life. The original formula for the index of weighted satisfaction was adjusted because of theoretical problems (see appendix 2 for an explanation of the adaptation).

The importance scale (how important a certain category is to an adolescent) has a reliability coefficient (Crohnbach's alpha) of .75 in this study. The coefficient for the satisfaction scale (how satisfied an adolescent is with a given category) is .74.

3.   Psychological well-being

Psychological well-being is generally assessed according to subjective measures of affect (presence of positive affect and absence of negative affect) and cognition (satisfaction with life).

The most commonly used scale in psychological research on affect is the PANAS (Positive and Negative Affect Schedule; Watson, Clark & Tellegen, 1988). Respondents are asked to indicate the extent to which they generally experience several emotions which are presented in the form of adjectives, such as *upset*, on a 5 point Likert scale.

The scale has an extraordinary validity and has been used in over 2000 studies. It originally consisted of 20 items but has been shortened by Thompson (2007) to a valid and reliable 10 item scale. Reliability coefficients are .76 for positive affect and .78 for negative affect. Hill et al. (2005) translated the scale to Dutch.

Factor analysis on the positive and negative affect subscales (PANAS) in this study provided three factors: positive affect (alert, determined, attentive, inspired, active), negative affect (distressed, ashamed, nervous and afraid) and hostile. When a two factor solution is forced, the "hostile" item shows a low loading on both factors. Since this corresponds to observations during the administration of the questionnaire, when children frequently asked

questions about this particular adjective and indicated that they considered it more dependent on a given situation than the other adjectives, the item was left out of the analysis. The positive affect factor (5 items) had a reliability coefficient of .62, whereas the negative affect factor's (4 items) coefficient was .66.

The SWLS (Satisfaction with Life Scale; Diener et al., 1985), has been the dominant instrument in research on satisfaction with life for the last twenty years. In order to obtain an indication of satisfaction that is as pure as possible, unrelated to external norms and values about the areas in which this satisfaction should be expressed, only general satisfaction is measured. A participant can use his or her own criteria. The scale consists of five statements (items), of which the participants indicate on a 7 point Likert scale to what extent the statement match their experiences. A typical item is: *if I could live my life over, I would change almost nothing*.

Previous research shows that the statements load on the same factor (factor loadings range from .61 to .84), which explains 66% of variance. Internal reliability ranges from .79 to .89 between studies, test-retest reliability from .62 to .83, depending on the interval, and a high criterion validity as indicated by the correlations with variables referring to life quality (Wu & Wu, 2008). Arrindell, Heesink and Feij (1999) found similar results for a Dutch population. Arrindell and his collegues also composed a valid and reliable Dutch version of the instrument (Arrindell, Meeuwesen and Huyse, 1991).

Factor analysis on the Satisfaction with Life Scale (SWLS) in this study provided a one factor solution with a reliability coefficient of .61 (5 items).

4. Self transcendence

There is no valid and reliable measure for sense and self transcendence yet. A 3 item measure was constructed by the researcher for the purpose of this study. Cronbach's Alpha was .67.

Results

Source of personal meaning in life

The answers to the open question to list 3 to 7 elements that provide meaning in life were divided into the categories found in previous research (Baessler & Oerter, 2003; Debats, 1999; DeVogler & Ebersole, 1983; Ebersole & DePaola, 1987): family relationships, friendship, romantic relationships, personal growth, beliefs, service (helping others)

existentialism, school, health, work, fun, hobby's and sports. The following new categories were added based on the data: pets, the future, happiness, materialism, appearance and "myself".

Because the participants were asked to name 3 to 7 elements, it was possible for an adolescent to provide more than one answer in the same category (e.g. "my mother" and "my father" are both family relationships). Both answers were used in the analysis.

Table 3 provides an overview of the different categories, in order of importance. *Family* is mentioned by 73% of the adolescents and ranks as the most important category. *Friends* follows closely in its wake, being mentioned by 70% of the adolescents. *Pleasure* is indicated by 42% of the adolescents as providing meaning to their lives, followed by *sports* (38%), *love* (23%) and *school* (23%). All other categories are mentioned by less than 20% of the adolescents.

Table 3: categories of meaning for adolescents

Category	Example	N of times this category was mentioned	N of adolescents that mention this category	Percentage of adolescents that mention this category
Family	"my mother", "my dad", "the family"	716	586	73
Friendship	"my best friend", "being surrounded by friends"	584	560	70
Pleasure	"doing fun stuff", "enjoying myself", and activities that have no purpose or outcome but are just exercised for the sake of it (e.g. shopping, video gaming, going out)	489	332	42
Sports	"being good at sports", "volleyball"	338	305	38
Love	"my girlfriend", "love"	192	181	23
School	"going to school", "a good education"	189	186	23
Hobby	Hobby's that are specific and do have a purpose or outcome: "painting", "writing a novel", "playing guitar"	158	129	16
Beliefs	"freedom", "my religion"	148	118	15
Future	"the future" of specific ideas about it that are not personal growth, such as "being a mother" or "becoming a lawyer"	106	93	12
Personal growth	"learning new skills", "becoming more…"	92	76	10
Materialism	"making a lot of money", "my scooter"	82	61	9
Pets	"my horse", "the dogs"	76	73	9
Happiness	"being/staying/becoming happy"	75	74	9
Service	"being there for others", "making others happy"	68	55	7
Health	"being/staying/becoming healthy"	58	58	7
Work	"job", "having a nice job"	56	55	7
Existentialism	"for living my life", "because I'm there"	32	30	4
Myself	"for myself"	13	12	1
Appearance	"looking good", "clothes"	7	6	1

Factor analysis (rotated; Varimax) on the number of times an adolescent named the different categories, with a forced two-factor solution, yielded two dominant factors (see table 4).

Table 4: factors of personal meaning in life for adolescents

Factor	Positive	Factor loading	Negative	Factor loading
1. Ideological/ everyday	Personal growth	.427	School	-.475
			Job	-.198
	Beliefs	.327	Materialism	-.207
	Service	.483	Sports	-.530
	Existentialism	.326		
	Future	.312		
	Happiness	.394		
2. Solitary/social	Job	.383	Family	-.485
	Materialism	.442	Friends	-.545
	Health	.292	Pets	-.415
	Pleasure	.226	Hobbies	-.352
	Happiness	.268		
	Future	.228		

The first factor, explaining 9% of the overall variance, indicates that adolescents can be discriminated based on the categories that provide personal meaning to their lives. Ideological, contemplative categories tend to cluster together, as opposed to everyday, mundane categories. The second factor explains 7% of the variance.

The participants were split up into two groups according to their sum scores on the categories in the two clusters at the upper and lower end of the first dimension (factor): one group (the *ideological meaning* group) obtained a higher average score on the ideological categories than on the everyday categories. For the other group (the *everyday meaning* group), the scores were distributed the other way around. The characteristics of the two groups were described in the method section.

The statistical model

The relationships among the three variables were analysed using Structural Equation Modeling (SEM), a powerful statistical technique that combines measurement model or confirmatory factor analysis (CFA) and structural model into a simultaneous statistical test. (Hoe, 2008). It has the flexibility to model relationships among multiple predictor and criterion variables, and statistically tests a priori theoretical assumptions against empirical data through CFA (Chin, 1998). In most cases, the method is applied to test "causal" relationships among variables. The term *causal model* must be understood to mean: "a model

that conveys causal assumptions," not necessarily a model that produces validated causal conclusions (Pearl, 2000).

  The conceptual model described in the introduction was extended into the statistical model displayed in the path diagram in figure 2, taking into account the different indicators of the latent variables as well as the error residuals (for fixed variables) and deviances (for latent variables). Path diagrams are the heuristic tools that graphically display the causal and correlational relations between variables

For estimation of the parameters, the Maximum Likelihood (ML) method was used. This method produces parameter estimates as well as standard errors (e) and deviances (d), performs a statistical test for global fit and provides additional informal goodness-of-fit indices.
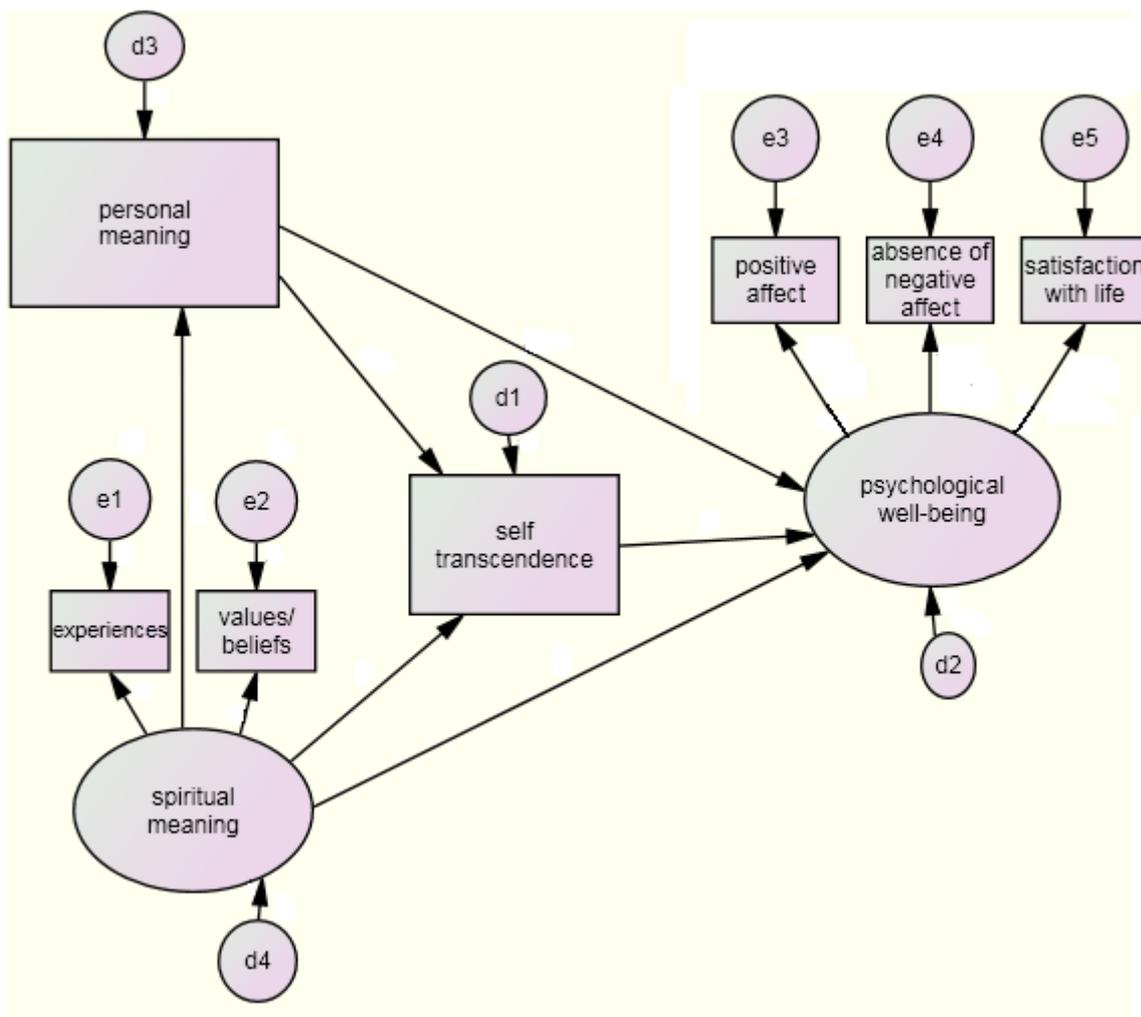

Figure 2: the hypothesized statistical model

Model fit

Factor loadings were tested for statistical significance and measures were obtained to assess overall model fit. These measures test the hypothesis that the relationships proposed in the model provide a plausible explanation of those that exist in the data.

The final model, which is a trimmed version of the hypothesized model in which all insignificant relationships were eliminated (see "parameter estimates" below), reached a chi-square of 72.38, with 22 degrees of freedom and a p-value of <.001. The chi-square/df ratio is 3.29. This indicates a low absolute fit, or a low degree to which the covariances implied by the fixed and free parameters specified in the model match the observed covariances from which free parameters in the model were estimated. However, since most models are either slightly misspecified or do not account for all measurement error, when sample sizes are large (as in the present study), a nonsignificant chi-square is rarely obtained (Bentler & Bonnet, 1980; Joreskog, 1981). The incremental fit measures are necessary to decide whether the model is still acceptable.

Incremental fit concerns the degree to which the model in question is superior to an alternative model (i.e., the "null" or independence model) in reproducing the observed covariances. In the present study the Comparative Fit Index (CFI), the Incremental Fit Index (IFI) and the root mean squared error of approximation (RMSEA) were used. The CFI indexes the relative reduction in lack of fit as estimated by the noncentral $\chi 2$ of a target model versus a baseline model; values of >.90 indicate acceptable fit (Bentler, 1990). The IFI compares the lack of fit of target model to the lack of fit of a baseline model, usually the independence model. The outcome value, which should exceed .90, estimates the relative improvement per degree of freedom of the target model over a baseline model (Bollen, 1989). The RMSEA is a "badness-of-fit" index that estimates the amount of error of approximation per model degree of freedom and takes sample size into account; <.08 indicates acceptable fit (Kline, 2005).

In the final model, estimates were .92 for the CFI value, .92 for the IFI value and .06 for the RMSEA. These findings indicate a model fit that is acceptable overall. The relationships proposed in the model provide a plausible explanation of those that exist in the data.

Parameter estimates

The initial model was trimmed in order to eliminate all insignificant pathways. This was established by means of stepwise deletion (i.e. the path with the highest *p* value was deleted first, then the one with the remaining highest value, and so on). The procedure resulted in the

model displayed in figure 3. The figure provides the standardized estimates as well as the variances of the errors and deviances. The results for the *everyday meaning* group are displayed in green and those for *the ideological meaning* group in red. All estimates have p values of <.05, except for those marked with an *. They have p values of <.1.
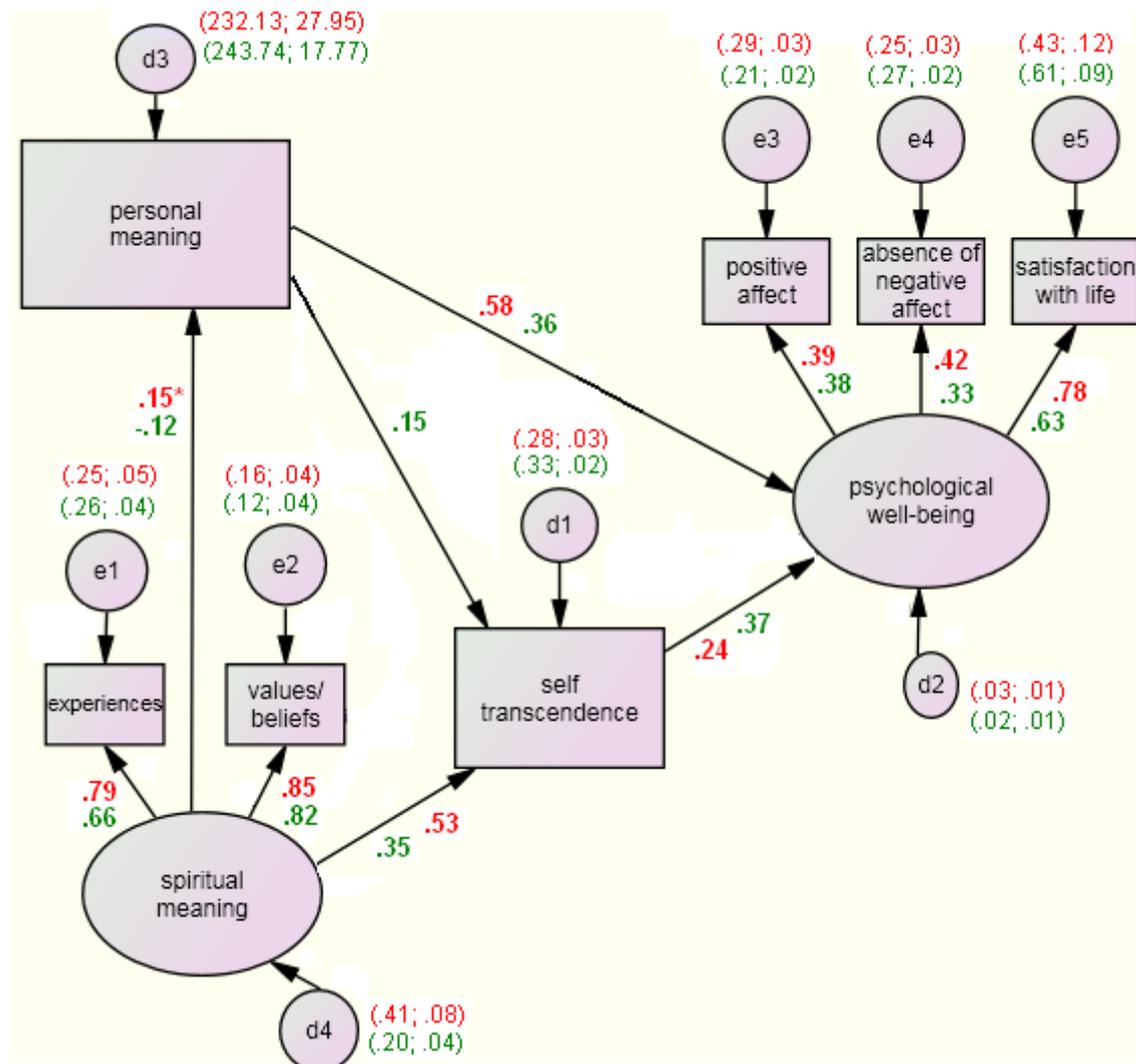
Figure 3: parameter estimates and error and deviance variance

Personal meaning in life as measured by the Index of Weighted satisfaction shows a considerably stronger relationship with psychological well-being in the *ideological meaning* group (r=.58) than in the *everyday meaning* group (r=.36). This indicates that the relationship between the extent to which people experience an everyday meaning in their life with psychological well-being is much stronger for those who derive meaning from personal growth, beliefs, service, existentialism, future and happiness than for those who extract

meaning from sports, job, materialism and school. The variables of spiritual meaning and self transcendence function differently between the two groups altogether. In order to comprehend their relationship to psychological well-being, their direct and indirect effects are analysed.

Indirect, direct and total effects

SEM allows for a calculation of the indirect, direct and total effects of several variables on the outcome variable (i.e. psychological well-being). These effects are summarized in table 5.

For the *ideological meaning* group, there is only a direct and strong effect of personal meaning on psychological well-being. That is: for the group who derives meaning in life mainly from ideological categories (personal growth, service (helping others), beliefs, existentialism, future and happiness), 58% of the variance in psychological well-being is directly explained by their experienced meaning in life. Another 21% is explained by spiritual meaning in life, through self transcendence. Self transcendence itself explains 24% of the variance.

For the *everyday meaning* group, the direct effect of personal meaning as derived from everyday categories (school, job, sports, materialism), is much smaller, explaining only 36% of the variance in psychological well-being. Another 6% is explained indirectly, through self transcendence. The effect of self transcendence itself is larger than in the other group, explaining 37% of the variance in psychological well-being. There is a small but significant indirect effect of spiritual meaning in life (8% explained variance).

Table 5: Indirect, direct and total standardised effects on psychological well-being

	Direct	Indirect	Total
Ideological meaning group			
Personal meaning	.58	-	.58
Spiritual meaning	-	.21	.21
Self transcendence	.24	-	.24
Everyday meaning group			
Personal meaning	.36	.06	.41
Spiritual meaning	-	.08	.08
Self transcendence	.37	-	.37

4.Discussion

The introduction enunciated how adolescents face the developmental task of having to form both an identity and a framework of meaning. At this age of life, they possess the maturity, cognitive capacities and motivation to do so, as they understand that the "rules" they created in previous developmental stages are no longer sufficient. Research has shown that succeeding in finding meaning in life promotes psychological well-being.

   Although this task has been the same for many generations, post modernist youths meet a new challenge altogether: they receive less outspoken external guidelines based on religion and family values. They grow up in a society with diverse orientations and are provided with more freedom and autonomy than generations before them. This poses the risk of young people refusing to adopt an ideological framework altogether, thus resorting to more mundane, hedonistic ideas about meaning in life. Theoretical as well as empirical researchers are worried about the effect this may have on their well-being. Over the last decades, youths have become increasingly anxious and centered around themselves (narcissistic). Also, they develop an external locus of control, indicating they don't feel their acts actually influence their life course. Their sense of insecurity of lack of safety may prevent them from developing an ideological framework.

The first hypothesis stated that hedonism, social relationships and school were expected to be the most important source of meaning in life for adolescents. This hypothesis was confirmed. Both friends and family were indicated by almost three quarters of the adolescents as providing meaning to their lives. Almost half of the adolescents mentioned pleasure. Other important categories were sports, love and school. All other categories were mentioned by less than one fifth of the adolescents.

   The second hypothesis predicted a positive relationship between spiritual and personal meaning and was partly rejected. The relationship was small in both groups, but is interesting nonetheless since it was positive for the *ideological meaning* group, but negative for the *everyday meaning* group.

   The third hypothesis predicted a positive effect of both spiritual and personal meaning on psychological well-being, and a larger effect for the *ideological meaning* group. The effects were expected to be both direct and indirect (through self transcendence). This hypothesis was confirmed in part. The mediating effect of self transcendence between personal meaning and psychological well-being was only apparent in the *everyday meaning* group, and the direct

relationship between spiritual meaning and psychological well-being was non-significant in both groups.

Interpretation

The previously researched inclination of post modernist adolescents to mention more superficial categories as a source of meaning in life was supported by this study. Although social relationships still played the largest part, pleasure and mundane activities such as school and sports followed closely in its wake. Only a small portion of the adolescents mentioned ideological considerations as a source of meaning in life. For those who did, however, the relationship between meaning in life and psychological well-being was much stronger than for those who did not. The relationship is positive and correlational: it indicates that as experienced meaning in life increases, psychological well-being increases as well and vice versa. Statements about the directionality of the effect should be taken with care. However, it is clear that experienced personal meaning in life explains a much larger proportion of the variance in psychological well-being for the *ideological meaning* group than for the *everyday meaning* group. That is: in line with previous empirical and theoretical research, deriving meaning in life from possessing, living up to and experiencing satisfaction from notions such as personal growth, service (helping others), beliefs, existentialism, future and happiness may promote well-being in a much more profound way than relying on everyday priorities such as school, job, materialism and sports. The implication of this finding could be that when youths are encouraged to develop an ideological framework, or an orientation in life that demonstrates a concern for the world beyond the self, they will be more satisfied with their lives and experience more positive and fewer negative emotions. Increasing social connectedness and decreasing environmental threats may, from a theoretical point of view, be a necessary prerequisite.

Self transcendence plays a different role in both groups. There was a small but significant effect of personal meaning on self transcendence for the *everyday meaning* group, indicating that youths in this group who were satisfied with achievement at school, sports, job and materialism did experience a larger sense of contributing to the world and of leaving something behind. This wasn't the case for the *ideological meaning* group, for whom their spiritual meaning in life showed a stronger relationship to self transcendence. So for adolescents with an ideological orientation in life, self transcendence is related largely to their spiritual experiences, beliefs and values (medium/large effect). For adolescents whose

meaning in life relies mainly on everyday achievements, self transcendence is achieved both through personal meaning (small effect) and spiritual meaning (medium effect).

Alternative explanations

First, the two groups are similar in terms of educational level, place of residence, age and religious orientation. However, the *ideological meaning* group contained a higher percentage of boys than the other group. There may be a gender effect at play in the results.

Second, the MMRS may not be a suitable instrument for measuring religiosity/spirituality in adolescents, thus creating ambiguity in the interpretation of the results. Observation during the administration of the test proved that the MMRS was considered by participants as the most difficult part of the questionnaire. Some students did not read the instructions well and asked whether their own father also counted as a higher power; others mentioned that the questions were "vague" and may have lost their interest in this part of the questionnaire.

Third, 58% of the variance in psychological well-being was accounted for by experienced personal meaning in the *ideological meaning* group, and 21% was explained by spiritual meaning. In the *everyday meaning* group, only 41% and 8% of the variance were explained by these variables, respectively. The current study does not provide an answer to the question which other variables are important in determining their sense of well-being. Since their mean psychological well-being is the same as for those in the *ideological meaning* group, there must be other factors that lead them to experience more positive affect, less negative affect and more satisfaction with life.

Recommendations for further research

Structural equation modeling is inferential in nature. Studies like this one are necessary, but not sufficient, to determine causality or directionality; a longitudinal or experimental approach would be indispensible. Future research could evaluate the effect on psychological well-being in adolescents who are encouraged and succeed to develop a more ideological framework of meaning.

A better, more age appropriate questionnaire for religiosity or spirituality is necessary to answer questions about the exact role and nature of these factors in the lives of adolescents.

Lastly, the high percentage of adolescents who mention social relationships as a factor of meaning in their lives indicate that the people around them may play a large part in the elements they consider important. A system-oriented approach would shed light on this issue.

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Appendix 1: questionnaire

Thank you for participating in this study on meaning in life! The purpose of this study is to find out what you and other people your age consider important in life. This questionnaire is about your thoughts and feelings about life.

You have plenty of time to fill out the questionnaire. I would like to ask you to take this time to read the instructions and questions well and to think about your answer. It is also important that you don't skip any questions. If you don't know your answer to a question immediately, leave the question open for a while and get back to it later. If you don't understand a word or question, please do not hesitate to ask for help.

There are no wrong or right answers. This questionnaire is about your opinion. Please be as honest and open as possible.

Your participation in this study is anonymous. That means you don't have to write your name anywhere on the questionnaire and your answers to questions will not be accessible to others. You also don't have to share them with your class mates or teacher.

A part of this questionnaire has multiple choice questions. Please answer these questions in the following way:

Answering:

O   O   ◉   O   O

Correcting:

O   O   ✖   ◉   O

Date of birth: _____

I am a:

- o   Boy
- o   Girl

Level of education

- o   VWO
- o   HAVO
- o   VMBO

Religion:

- o   Christianity (describe:)

  _____

- o   Judaism
- o   Islam
- o   Hinduism

- o   Buddhism
- o   Other (describe):

_____

- o   No religion

At different times in your life, your faith can mean different things to you. How religious would you call yourself at this moment? You can skip this question if you answered the last question with "no religion"

	Not at all	A little	Reasonably	A lot	Extremely
My faith is important to me.	O	O	O	O	O
My faith plays a large part in my everyday life.	O	O	O	O	O

Your feelings

Thinking about yourself and how you normally feel, to what extent do you generally feel:

	Never	Rarely	Sometimes	Often	Always
Upset	O	O	O	O	O
Hostile	O	O	O	O	O
Alert	O	O	O	O	O
Ashamed	O	O	O	O	O
Inspired	O	O	O	O	O
Nervous	O	O	O	O	O
Determined	O	O	O	O	O
Attentive	O	O	O	O	O
Afraid	O	O	O	O	O
Active	O	O	O	O	O

Your life

Below are five statements with which you may agree or disagree. Please indicate your agreement with each statement.

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
In most ways my life is close to my ideal.	O	O	O	O	O	O	O
The conditions of my life are excellent.	O	O	O	O	O	O	O
I am satisfied with my life.	O	O	O	O	O	O	O
So far I've gotten the important things I want in life.	O	O	O	O	O	O	O
If I could live my life over, I would change almost nothing.	O	O	O	O	O	O	O

	Not at all	A little	Reasonably	A lot
My life makes a difference in the world.	O	O	O	O
If I were to die, I'd leave something worthwhile behind.	O	O	O	O
When someone dies, he continues to exist in what he did during his life.	O	O	O	O

Meaning in your life

This part is about what you consider meaningful in your life.

Please indicate a minimum of three and maximum of seven areas that provide meaning to your life in your current situation.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Please indicate the importance of the seven areas you mentioned above.

	Somewhat important	Moderately important.	Important	Very important	Extremely important
1	O	O	O	O	O
2	O	O	O	O	O
3	O	O	O	O	O
4	O	O	O	O	O
5	O	O	O	O	O
6	O	O	O	O	O
7	O	O	O	O	O

Finally, please indicate your current level of satisfaction with each area.

	Very unsatisfied	Unsatisfied	Slightly unsatisfied	Neither satisfied nor unsatisfied	Slightly satisfied	Satisfied	Very satisfied
1	O	O	O	O	O	O	O
2	O	O	O	O	O	O	O
3	O	O	O	O	O	O	O
4	O	O	O	O	O	O	O
5	O	O	O	O	O	O	O
6	O	O	O	O	O	O	O
7	O	O	O	O	O	O	O

Your beliefs and experiences

The following statements concern beliefs experiences you might have. Some statements are about a "higher power". This could be (a) God, but may mean something else for you altogether.

How often do you experience the following?	Many times a day	Every day	Most days	Some days	Once in a while	Never or almost never
I feel the presence of a higher power.	O	O	O	O	O	O
I find strength and comfort in my religion.	O	O	O	O	O	O
I feel deep inner peace of harmony.	O	O	O	O	O	O
I desire to be closer to or in union with a higher power.	O	O	O	O	O	O
I feel the love of a higher power for me, directly or through others.	O	O	O	O	O	O
I am spiritually touched by the beauty of creation.	O	O	O	O	O	O

	Strongly agree	Agree	Disagree	Strongly disagree
The events in my life unfold according to a divine or greater plan.	O	O	O	O
I have a sense of mission or calling in my own life.	O	O	O	O
I believe in a higher power who watches over me.	O	O	O	O
I feel a deep sense of responsibility for reducing pain and suffering in the world.	O	O	O	O
Because of my religious or spiritual beliefs:	**Always or almost always**	**Often**	**Seldom**	**Never**
I have forgiven myself for things that I have done wrong.	O	O	O	O
I have forgiven those who hurt me.	O	O	O	O
I know that a higher power forgives me.	O	O	O	O
When I try to understand and deal with major problems in my life:	**A great deal**	**Quite a bit**	**Somewhat**	**Not at all**
I think about how my life is part of a larger spiritual force	O	O	O	O
I work together with a higher power as partners.	O	O	O	O
I look to a higher power for strength, support, and guidance.	O	O	O	O
My religion is involved in understanding or dealing with stressful situations.	O	O	O	O
I feel a higher power is punishing me for my sins or lack of spirituality	O	O	O	O
I wonder whether a higher power has abandoned me.	O	O	O	O
I try to make sense of the situation and decide what to do without relying on a higher power	O	O	O	O

Appendix 2: adaptation of the index of weighted satisfaction

The first two steps of the calculation of the index of weighted satisfaction are identical to those proposed by Fegg et al. (2008).

1. The respondents first indicated a minimum of three and a maximum of seven areas (n=number of areas) that provide meaning to their lives in their current situation. Next, the importance of each area (w_i … w_n) was rated with a five-point adjectival scale, ranging from 1 "somewhat important" to 5 "extremely important". Finally, the respondents rated their current level of satisfaction with each area (s_i … s_n) on a seven-point Likert scale, ranging from -3 "very unsatisfied" to +3 "very satisfied". The Index of Weighting (IoW) indicates the mean weighting of the different areas (range: 20-100, with higher scores reflecting higher weights). Because the scale starts with "somewhat important", the floor is set to 20 instead of 0.

$$\mathrm{IoW} = 20 \circ \frac{w_{ges}}{n};$$

$$w_{ges} = \sum_{i=1}^{n} w_i$$

2. Participants indicated their level of satisfaction in these areas. The Index of Satisfaction (IoS) indicates the mean satisfaction or dissatisfaction with the individual areas of meaning (range 0-100, with higher scores reflecting higher satisfaction). To obtain a clear index, varying from 0 to 100, the satisfaction ratings s_i are recalculated (s'_i). "Very unsatisfied" (s_i=-3) is set so s'_i=0 and "very satisfied" (s_i=3) is set to s'_i=100, with the levels of 16.7, 33.3, 50, 66.7, and 83.3 in between.

$$\mathrm{IoS} = \frac{\sum_{i=1}^{n} s'_i}{n}$$

3. The total index (Index of Weighted Satisfaction; IoWS) is calculated by combining the ratings for importance and satisfaction (range: 1-100, with higher scores reflecting higher experienced meaning in life).

The authors suggest the following formula to achieve this:

$$\text{IoWS} = \sum_{i=1}^{n} \left(\frac{w_i}{w_{\text{ges}}} \circ s_i' \right)$$

In the total index (IoWS), levels and weights assigned to particular areas are theoretically independent and can change independently. A person may be satisfied in a particular are but assign little importance to it, whereas another area may be described at a high level of both importance and satisfaction. An area that is going badly for an individual but is of little importance will have less implication for the individual experienced meaning in life than an area that is going badly but at the same time is perceived as very important.
However, the given formula implicates that high scores in relatively unimportant areas contributed similarly to the overall experienced meaning in life as high scores in important areas. A person who tends to be indifferent to the areas that contribute to his or her sense of meaning (low importance) but is satisfied with how he or she is doing in that area (high satisfaction), may therefore obtain the same overall score as a person who attaches great importance to the areas that provide meaning (high importance) and manages to achieve satisfaction in those areas (high satisfaction). This is contrary to the notion of meaning in life as given by Debats (1999) in the introduction: "[it] implies that (a) they are positively *committed* to some concept of the meaning of life, (b) this concept provides them with some *framework* or goal from which to view their lives, (c) they perceive their lives as related to of *fulfilling* this concept, and (d) they experience this fulfillment as a feeling of *significance*".
Little importance indicates low commitment. Therefore, a modification of the last formula is used in the analysis:

$$\text{IoWS} = (1/5n) \circ \sum_{i=1}^{n} \left(w_i \circ s_i' \right)$$