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What can we learn about the concept of meaning in life from older adults with Alzheimer's disease? A directed content analysis study

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Abstract

Meaning in life has grown into a topic of great interest in psychological research. Conceptually, scholars differentiate between sources and components of meaning. However, the current scholarly views on meaning are highly cognitive and it is unclear to what extent they correspond with the understanding of lay people with cognitive difficulties, like those with Alzheimer's disease. Using directed content analysis, we analyzed short descriptions of meaning in life of 126 older adults with Alzheimer's disease, exploring whether the components (i.e., coherence, purpose, significance) and sources from the current literature could be identified and what additional themes emerged in their accounts. Replicating findings in other populations, family and relationships were the most prominent sources. Coherence and purpose were each described by 15% of participants, significance was almost not mentioned. We discuss the entanglement of components and sources in people's descriptions and the possibility of a connection facet underlying meaning. We provide evidence for a distinction between cognitive and felt coherence and show that many participants talked about fulfilled and purpose instead of future-oriented purpose, emphasizing the need for a developmental understanding of meaning.

Keywords

Qualitative analysis, meaningfulness, dementia, old age, nursing home

Introduction

Existential scholars such as Frankl (1968) and Yalom (1980) proposed that finding meaning in life is one of the most fundamental concerns for humans, as we are the only species acutely aware of our own mortality. In the last decennia, their foundational theories have propelled an impressive number of empirical studies confirming the importance of experiencing one's life as meaningful for both physical health (Czekierda, Banik, Park, & Luszczynska, 2017; Roepke, Jayawickreme, & Riffle, 2014) and mental health (Steger, 2012) across different populations.

Although meaning researchers are in unison about the importance of experiencing meaning, some discord remains about the precise definition of the concept of meaning in life. Researchers have tried to approach the concept by describing on the one hand the components or dimensions that meaning exists of and on the other hand the sources that contribute to meaning. Although recent years have seen a convergence to some consensus, these conceptualizations have been made primarily from a scholarly view, and it is therefore unclear how well they are represented in the views of lay people.

To further clarify the structure of meaning in life, it is important to diversify our designs and methodologies and approach the concept from new angles. In this study we uncover new insights about meaning by studying how people in a unique population (older adults with Alzheimer's disease) naturally think about it, using a method not commonly used in meaning research (directed content analysis). As will be evident, this approach raised several new perspectives around the nature and sources of meaning, such as the distinction between cognitive and felt coherence and the observation that people at this stage of life often think about fulfilled purpose instead of purpose as future-oriented as it has been traditionally conceptualized. We also discuss the entanglement of components and sources of meaning in people's minds, whether there could be an affective or relational component to meaning, and the possibility that an aspect of connection may be an underlying theme behind different

components of meaning. Before further discussing our research, we provide an overview of the current state of affairs in meaning in life research.

Meaning in Life: Components

Because of its abstractness, scholars have attempted to grasp meaning by describing it as consisting of different components. An important groundwork for the current understanding of meaning in life was laid by Reker and Wong (1988), when they suggested meaning could be divided into a cognitive, motivational and emotional component. Since then, several variations and extensions have been suggested (e.g., Baumeister, 1991; Wong, 2013). In 2016, Martela and Steger (2016) extensively reviewed previous works and in line with some earlier suggestions (Heintzelman & King, 2014a; Steger, 2012), they concluded that meaning consists of the three facets of coherence, purpose, and significance. Accordingly, they defined meaning in life "as emerging from the web of connections, interpretations, aspirations, and evaluations that (1) make our experiences comprehensible, (2) direct our efforts toward desired futures, and (3) provide a sense that our lives matter and are worthwhile." (p. 8). Around the same time, a similar tripartite view was forwarded by George and Park (2016), with the components purpose, comprehension, and mattering.

The tripartite view of meaning seems to resonate with many of the experts in the field. Leontiev (2017a) argues that "there is convergence regarding the view that meaning has a tripartite structure" and that "it makes a common point of departure for further collective efforts." (p. 78). These efforts are still needed because convergence does not mean full consensus, and an encompassing theory of meaning has not been reached. Before and after the formalized overview of Martela and Steger (2016), other authors have forwarded multi-component views of meaning, many of which include more than three components. Some scholars for example suggest adding a relational component, such as connectedness (Derkx,

2011) or a sense of belonging (Schnell, 2009), a personal component such as self-worth (e.g., Baumeister, 1991), or a value component (e.g., Baumeister & Landau, 2018; Huta, 2017).

Hill (2018) suggests that meaning in life also includes an affective embodied experience, which Gendlin (1962/1997) called the felt meaning or 'felt sense' of one's existence. The distinction between felt and cognitively reasoned meaning has also been implicitly present in the way the coherence component has been defined in the literature. More cognitively framed coherence can for example be recognized in descriptions such as: 'the perception that stimuli are predictable and conform to recognizable patterns' (Martela & Steger, 2016, p. 4) and 'the degree to which individuals perceive a sense of coherence and understanding regarding their lives' (George & Park, 2016, p. 2). Felt coherence is reflected in descriptions such as 'A sense of comprehensibility and one's life making sense' (p. 1) and 'The feeling that one's experiences or life itself makes sense' (p. 3) (Martela & Steger, 2016). However, this distinction has not been made explicit or tested.

Meaning in Life: Sources

In addition to components of meaning, another line of research has focused on what meaning is derived from, what potential *sources* of meaning are. Sources have been defined as the personally relevant life domains, contexts, or internal states that make life meaningful and guide action, such as family, work, religion, creativity, leisure, etc. (Bar-Tur, Savaya, & Prager, 2001; Delle Fave, Brdar, Wissing, & Vella-Brodrick, 2013; Schnell, 2009). Some sources, like family and interpersonal relationships, are consistently rated as highly meaningful by the majority of people (Glaw, Kable, Hazelton, & Inder, 2017; Lambert et al., 2010). However, there are also important interindividual differences in sources of meaning, depending on personality but also life stage. Aging adults have for example been shown to move from more individualistic sources (e.g., personal growth, standard of living) toward

more communal and transcendental goals (e.g., societal and social commitment, religion and spirituality) (Bar-Tur et al., 2001; Schnell, 2009).

In avoiding over-conflation of the meaning construct, researchers have emphasized the importance of distinguishing between *components* and *sources* of meaning (Leontiev, 2013).According to Martela and Steger (2016), belonging, for example, is actually better understood as a source rather than a component of meaning. However, lay people do not always explicitly make this distinction and will often focus on what is concrete in their lives when it comes to meaning. In an exploratory qualitative study, for example, Wong (1998a) asked a diverse group of 60 lay people to freely describe 'an ideally meaningful life' (p. 112). In their answers, they referred to both sources and components, often intertwined. This accords with Vos (2015), who argues that meaningfulness arises from both very concrete, everyday experiences and activities as well as from an abstract level transcending the sum of all these experiences. As the nature of some constructs (e.g., belonging, fulfillment, self-worth) is still under discussion, letting participants talk freely about meaning can give insight into how sources and components appear in the experience of individuals.

Meaning in Life and Cognition

Most of the current views on meaning in life seem to imply strong cognitive processes, such as reflecting, making abstraction, detecting and repairing incongruences in one's mental models of how the world works, connecting memories, experiences, and aspirations across past, present, and future (Heine, Proulx, & Vohs, 2006; Krause, 2007; Martela & Steger, 2016; Steger, 2012). In line with these theoretical ideas, some researchers have suggested that complex cognitive abilities govern the experience of meaning in life and that cognitive decline might jeopardize it (Krause, 2007; McKnight & Kashdan, 2009; Vess, Hoeldtke, Leal, Sanders, & Hicks, 2017; Wilson et al., 2013).

Some evidence in support of this assumption comes from a study showing that higher functional connectivity in the medial temporal lobe of the brain was related to higher meaning in life scores (Waytz, Hershfield, & Tamir, 2015) and a study showing that working memory, perceptual speed, and semantic memory predicted declines in purpose over time (Wilson et al., 2013).

However, other theoretical views on meaning do not see cognition as a strong pre-requisite. Frankl (1984) believed that not the abstract, general meaning in life matters the most, but the meaning in a specific situation. This is in line with Bellin (2015), who states that "meaning through being is the part of meaning in life that transcends internal cognitive processes to the experience of mattering, not because of something external that a person did but rather because the meaning is tied to the person's very existence" (p. 226). It also echoes Gendlin's (1962/1997, 1973) findings that meaning is essentially bodily sensed, concrete but at the same time implicit and holistic. Indirect empirical support in this direction comes from studies showing that positive emotions (King, Hicks, Krull, & Del Gaiso, 2006) and emotional clarity (Abeyta, Routledge, Juhl, & Robinson, 2015) contribute to the experience of meaning. Recently, meaning in life has also been positively related to an intuitive processing style (Heintzelman & King, 2016). Furthermore, Takkinen and Ruoppila (2001) found no evidence for group differences in meaning for older adults based on their cognitive abilities.

Meaning in Life and Alzheimer's Disease

Although the specifics of the relationship between the experience of meaning in life and cognitive abilities remain obscure, they might have very important implications for a large and growing part of our society: those dealing with cognitive decline due to Alzheimer's disease or other forms of dementia. Not much is known about how people with dementia conceptualize and experience meaning or the degree of agreement with contemporary scientific views on meaning in life. Some studies have indeed identified challenges in finding

or maintaining meaning in life when living with dementia (e.g., Holst & Hallberg, 2003; Svanström & Sundler, 2015). However, several qualitative studies have described instances of retained ability to experience meaning in dementia, even in advanced stages (Kontos, 2004; McFadden, Ingram, & Baldauf, 2001). Most accounts reveal a balance between finding meaning by staying engaged in important and valued activities on the one hand and finding new meaning by adapting to challenges on the other hand (Dewitte, Van Wijngaarden, Schellekens, Vandenbulcke, & Dezutter, 2020; Genoe & Dupuis, 2014; Harmer & Orrell, 2008; Menne, Kinney, & Morhardt, 2002; Phinney, 2011; Westius, Kallenberg, & Norberg, 2010). This aligns with theoretical views that forward meaning as a psychological resource for facing challenges and adversity in life (e.g., Janoff-Bulman, 2004; Nolen-Hoeksema & Davis, 2002; Shmotkin & Shrira, 2013). The relevance of this idea for people with dementia is further corroborated by recent empirical work which found that the experience of meaning in life for older adults with Alzheimer's disease was related to less depressive symptoms and more life satisfaction, and, importantly, that this relation was stronger for those with more severe cognitive challenges (Dewitte, Vandenbulcke, & Dezutter, 2019).

Present Study

The current views of meaning are heavily based on academic philosophical and psychological theories and often presuppose a universality and generalizability across populations. It is therefore vital to supplement research grounded in scholarly definitions of meaning with investigations of lived experiences, of how the components and sources of meaning arise in real lives (Wong, 1998b; 2017) but tests in 'non-average' populations remain the minority. Given the unsettled emphasis on cognitive abilities in finding meaning in life, it is important to turn towards those dealing with cognitive decline, such as people living with Alzheimer's disease. O'Connor and Chamberlain (1996) suggested that for people with more limited cognitive abilities "the same structure and dimensions will underpin their

experiences of personal meaning even if those experiences are less developed or accessible" (p. 475). However this assumption has not been tested and seems in contradiction with the cognitive emphasis of contemporary models of meaning. At the same time, older adults with cognitive difficulties might have a somewhat different way of experiencing the world. In this sense, investigating meaning in these populations might shed light on other aspects of meaning that might be overlooked when looking at the world with a highly cognitive point of view. Therefore, the goal of the present study was to investigate whether existing views of components and sources of meaning in life are represented in the accounts of older adults with Alzheimer's disease (the most common form of dementia), and what fresh perspectives might be provided by them. We use a directed content analysis approach, which is particularly suited to scrutinize expert theoretical conceptualizations by bringing back in the personal views and descriptions of participants.

Methods

Participants and Procedure

Participants were a convenience sample recruited in the context of a larger longitudinal project on meaning in life for older adults with Alzheimer's disease (https://osf.io/549je/). The study received approval from the ethical committee of KU Leuven (SMEC ID G-201608612). Participants were recruited from nine nursing homes in Belgium. Inclusion criteria were: age 65 or more, diagnosis of (probable) Alzheimer's disease, permanent stay in the residential care setting, no severe hearing or speech impairment, and ability to have a conversation. Based on the inclusion criteria, the nursing homes provided a list of eligible residents. Data was collected by the first author and a psychological research trainee, who both had previous experience with interviewing older adults in nursing homes. To respect the autonomy of the residents, we adopted a process consent approach (Dewing, 2007). The nursing homes first received a letter to inform family members about the study,

giving them the opportunity to object against participation of their relative (passive consent). Between November 2016 and March 2017, potential participants were visited in their private rooms and received extensive information on the study, adapted to their cognitive abilities. Capacity to provide informed consent was based on an ongoing functional assessment of the care staff and the interviewers. When initial informed consent was provided (written or audio-recorded), verbal consent to continue was re-established regularly throughout the interview, while the interviewer remained attentive to any signs of distress or refusal. A structured interview was conducted, consisting of a questionnaire with different scales and one open question, which is the focus of the current study. The open question ('Generally, what comes to mind when you think of meaning in life?') was adopted from a qualitative study on meaning in life from Hill et al. (2015) and translated to Dutch. When participants had difficulty understanding the question or when answers were very short, the question was rephrased (often to a more concrete level) or participants were probed to elaborate (e.g., 'Can you tell something more about what is meaningful to you?'). For feasibility, the response time was restricted to approximately 5 minutes, because the goal of the open question was to collect a short description from a large sample (in contrast to the approach taken in in-depth interviews, where collecting more elaborate answers from a smaller sample is the goal). Of the 140 participants who were included in the study, 133 provided an answer to the open question. Responses were audio recorded and lasted from 26 s to 6 min 37 s. These answers were transcribed to written text for coding.

Mean age of the total sample of 140 residents (107 women) was 85.79 (SD = 5.69, range = 70 - 98). Sixteen residents were single or divorced (12%), 25 married or cohabiting (18%), 93 widowed (66%), and for six (4%) civil state was missing. The residents were in different stages of severity of their Alzheimer's disease, with 22% in mild stage (n=27, Mini-Mental State Examination Score 20-27 (MMSE; Folstein, Folstein, & McHugh, 1975)), 65%

in moderate stage (n = 82, MMSE 10-19) and 13% in moderate-severe stage (n=16, MMSE 0-9) (for n=15 no MMSE score was obtained).

Directed Content Analysis

The text was coded using *directed content analysis*. In contrast to most inductive qualitative analysis methods, directed content analysis is a primarily deductive, theory-driven approach. The main goal of the approach is to test, correct, and/or possibly extend and enrich an existing theoretical framework, for example by examining it in a new situation or population (Hsieh & Shannon, 2005). An initial coding scheme is developed before coding starts, guided by the existing theoretical framework (i.e., top-down). The coding scheme can then be further refined ad hoc during the coding process, for example by subdividing an existing code or adding new ones as needed (i.e., bottom-up). The usefulness of directed content analysis for the study of meaning has recently been demonstrated in a study on the lay understanding of meaning/purpose of adolescents and emerging adults (Ratner, Burrow, Burd, & Hill, 2019).

Coding Scheme

With regard to components, the tripartite view of meaning as articulated by Martela and Steger (2016) and George and Park (2016) was used as a starting point for the coding scheme. For clarity, we will use the terms from Martela and Steger (2016) from now on to describe the components from the tripartite view. With regard to sources, our coding scheme was based on the work of Delle Fave and colleagues (2011; 2013). We elaborated an initial coding scheme, as rich and exhaustive as possible, with predetermined codes based on the definitions and descriptions in these works.

Based on information in the literature and a try-out of the coding scheme on a small sample of text, we added certain nuances in this first version with the analysis in mind (see Table 1). 1) A code for the general experience of meaning in life, without reference to a

specific component or source was added. 2) The source 'family' was subdivided in sub-components indicating different types of family members (partners, children, grandchildren, parents, siblings, other). 3) for coherence, a distinction in two sub-codes was made between *cognitive* coherence and *felt* coherence. The former reflects a degree of insight into patterns of one's life and a sense of predictability that make life as a whole understandable, on a more cognitive level. The latter stands for an unreasoned feeling that the personal life picture fits together and makes sense, which is in line with Gendlin's conception of felt, implicit meaning (1962/1997). We wanted to test whether this differentiation which is implicitly present in the literature could be found in the data. .

Coding Process

A coding unit was described as 'every description that can be a possible component or source of meaning.' We adopted a low level of interpretation, staying as close to the text as possible. In other words, we focused on the manifest content, describing "the visible, obvious components", as opposed to the latent content which involves a deeper level of interpretation "of the underlying meaning of the text" (Graneheim & Lundman, 2004, p. 106).

The text was coded in eight coding rounds, and the coding scheme was fine-tuned during the entire process. During every round, a section of the text was coded independently by at least two of the authors. Importantly, units could receive more than one code when appropriate (e.g., some units referred to the component of purpose and a specific source). After each round, all codes and discrepancies were thoroughly discussed and the coding scheme was adjusted accordingly. Major changes to the coding scheme are noted in Table 1. Of note, we added a 'lack of…' sub-code for the general experience of meaning and the three main components, as participants sometimes referred to these in terms of what was missing. We view these 'lack of' sub-codes as related but distinct dimensions, in line with previous work showing that lack of meaning should not be conceived as the opposite pole of the

experience of meaning but as a different (albeit related) dimension (Schnell, 2009). During a final meeting, remaining doubts and discrepancies were discussed with all authors to reach full consensus on the codes. An English translation of the resulting final version of the coding scheme can be found on the Open Science Framework (https://osf.io/83ybh/).

During the entire coding process, units that could not be coded using the existing coding scheme were coded as memos with thoughts of the researchers on possible other codes. Next, we evaluated whether these new codes could be situated under other themes put forth by other authors (Hupkens et al., 2019). In other words, there was a movement from deductive to inductive back to deductive within the coding process. Memos could also include other reflections, comments, doubts, etc. of the researcher. With regard to aspects suggested in other theories but not included in the tripartite view, the question arises whether these should be viewed as components, consequences, or sources of meaning. This points to an important gap in the existing literature on meaning: no clear criteria of how to distinguish between constituents and antecedents/consequents of meaning has been delineated. In order not to conflate the concept of meaning, as warned by Martela and Steger (2016), we tried to make a first initiative on this front by explicating criteria by which possible components were evaluated: an aspect currently not included in the tripartite view may be a candidate component of meaning in life if it is central to meaning, reasonably unique to meaning, and part of what we typically think as the core of what meaning in life is about. A source of meaning, in contrast, is a crystalized example of how meaning finds its form in everyday life, something the presence of which tends to enhance the meaningfulness of one's life.

Rigor and Trustworthiness

There are some challenges involved in using directed content analysis. Most notably, the researcher is more likely to confirm then disconfirm the theory (van Staa & de Vries, 2014), as he/she approaches the text 'with an informed but, nonetheless, strong bias' (Hsieh &

Shannon, 2005, p. 1283). Second, a focus on theory can make the researcher less attentive to contextual aspects of the text (Hsieh & Shannon, 2005).

To counteract these challenges and increase trustworthiness, we took several measures. First, a detailed logbook with notes from every team meeting was kept to keep track of the rationale behind decisions made in the process. Second, the analysis was done by different coders separately and all discrepancies were resolved during team meetings. The coding scheme was updated accordingly after each meeting. Third, initial codes were done in Word but then transferred to NVivo for further analysis, which for example facilitates the interpretation of codes within their broader text context. Finally, the whole text (with meaning units indicated but un-coded) was coded again fully by a Master's thesis student as an additional check, which resulted in an inter-rater reliability of 82 % agreement with the researchers' coding (Miles & Huberman, 1994). The researchers' coding was retained.

Results

Of the 133 participants for whom an answer to the open question was recorded, seven participants answered that they were unable to answer the question, even after encouragement and rephrasing of the question (e.g., 'I don't know how to answer that.', 'There's not much I can say to that.'). So although the open question can be considered a difficult, abstract question to answer—for people with and without Alzheimer's disease—most of the participants with Alzheimer's disease in our sample (94.74%) were able to provide a substantive answer. In what follows, percentages will be calculated in proportion to the number of participants who were able to provide an answer to the question (n=126).

Components of Meaning: Coherence, Purpose, Significance

A total of 38 participants (30.16%) referred directly to one or more of the tripartite components. Six of these 38 referred to more than one component (five referred to both

coherence and purpose and one to both coherence and significance). Table 2 shows the occurrence across subcomponents.

Cognitive Coherence

Participants seemed to speak of cognitive coherence when describing how they have tried and try to make sense of life. These references often seemed to involve some guiding life principles that help to cope with life's unpredictability: *'I can still see my father say (...) "Man does what he can, and God what he will. Don't forget that." (...) That way we were always prepared.'*; *'What is really important, in my life ... I have been able to do the things I found important and not do or fight against things that were not okay, according to the law ... or against people's interests.'*

Just as often, however, participants described difficulty or inability to make coherence of things in life. This often involved a loss that was experienced, for example: *'My husband died of cancer, yes. I thought that that would not happen to me, in my home. That I would become happy, be happy until the last minute. And that was a heavy blow. (...)Yes, you have to be able to, well, get over that in a way.'* Some participants reported lack of coherence in specific domains, for example religion: *'I struggle with that, to really know or be sure that what they told us (...) whether it is true. I have my doubts about it.'* Living in residential care was another aspect that could shake up coherence: *'That they brought me in here and that I didn't know anything about that. Yes, I don't know how to explain it any better. But I think I'm in the wrong place here. That I shouldn't be here yet. I still have a wife and four children.'*

Sometimes, participants expressed a sense making process from lack of coherence to coherence: *'I am content. It does happen sometimes that you think "what is going on now? Where do I go?" You do have that sometimes, but then we have to find a way to get over*

that.'; 'At times, when you have a setback you say to yourself "come on, it shouldn't be like this", and then other times you say: "you know, it's normal."'

Felt Coherence

Two participants spoke of a felt coherence, a feeling that things in life were just right, the way they should be: *'I think I did my life the way it was supposed to be done.'* However, felt coherence was mostly expressed in terms of lack, as a feeling that life is illogical or unfair: *'life is a battle. That's true, right? You're in love with your husband, and you think that things will just continue…' ; ' Where it will end, we don't know. I don't mind but it does make things hard for me because we live separated. I would have hoped it differently.' ; 'What should come to mind, my child? I didn't know anything else but misery. I have had to raise my daughter by myself, my husband died young. I loved him (…) It still goes round my head, you know. It shouldn't be like that.'*

Purpose

Compared to the other components, purpose was spontaneously referred to most by participants. Participants spoke of purpose mostly in the sense of it being present. Only two participants mentioned lack of purpose by stating they had '*nothing to live for anymore*' and *'what can we still expect, us old people?'*

The purpose component was most evidently linked to concrete sources. Relationships with family and children in specific often came up as an important purpose in life. Participants mentioned that an important goal in their life was to give their children a good live and, for example, being able to let them study. Other sources linked to purpose were, for example, religion *('I want to live as a good Christian.'*) and work *('I actually would like to have a fixed job. Nothing to demanding of course (…) that I'm not always there without anything to do. I like to always have something to do.'*).

Significance

Compared to purpose and coherence, significance was spontaneously referred to very little. Only two participants referred to the presence of significance. One participant spoke of his past medical work as significant because it had an important impact on the lives of others in need: *'That meant a lot, because it was for other people (…) In the bush, against severe illnesses, and later in the city against tuberculosis. I thought that was really meaningful.'* Another participant spoke more in general about how personal decisions can impact the significance of your life and that of others: *'The decisions that you make play a decisive role for everything of value. A lot of things can happen because of your own way of living. (…) At that moment I can say, this aspect, this action, this way of thinking, it influences in one way or the other my life and everyone else. All the other people who live around me and with me.'* One participant very strikingly described a lack of significance in life: *'I've written myself off. They can take me to the dump.'*

Aspects of Meaning from Different Conceptualizations

Meaning units that could not be categorized under one of the existing codes where marked with a memo and labeled with possible new codes. Certain recurring themes that were identified could be linked to components put forth in other works. In this section, we will simply give an overview of these facets with examples from the text. In the discussion, we will reflect on their potential as components of meaning.

Affective Component: Satisfaction, Contentment, Happiness, Fulfillment

Many residents made reference to some feeling of contentment, satisfaction, fulfillment related to the affective component as proposed by Reker and Wong (1988): '*In general, the way I've lived my live and spent my time, it has given me satisfaction' ; 'my sense of fulfillment in everything I do. I'm content, I can't say otherwise.'*

Other more hedonic themes in the same line where happiness and enjoyment: *'Yes, life has meaning, because I am happy here.'; 'Happiness, that is the most important thing.'; 'We have always been satisfied with our little life. So we continued and enjoyed it.'* .

Fulfillment seemed to have a special meaning for some older residents. They spoke about different aspects of meaning in their life that seemed to be fulfilled, accomplished, completed. These fulfilled meanings from a life lived still seemed to give meaning to the present, without there being the need for new aims in the future: *'I taught, I married, I got children, I travelled. So that is complete. I don't desire anything more in that regard.' ; 'I think I succeeded in what I expected from the time I'm experiencing now.'* It was striking that the majority of these units referred to a certain fulfilled *purpose*. However, the current literature and thus the coding scheme describes purpose as future-oriented and directional. Therefore, these units were not coded as purpose.

Relational component: Connectedness, Belonging

Some participants referred to family and other relationships in a sense that referred to a deeper connectedness and belonging: *'My husband, he comes to visit me, yes, and we don't have any children, so we are connected to each other.' ; 'The togetherness with my husband'* ; *'Meaning in life is being open to friend and family (…) who you're in contact with, and being open.' ; 'Making people happy and letting them make me happy, the friendship in life. That is life for me. And trying to understand each other as well as possible.' ; 'I love the people and, yes, mostly I love everybody.'*

The opposite of belonging and connecting could also be observed, when residents communicated that they felt as though they did not belong in the residential care setting: *'I think I'm in the wrong place here.' ; 'I don't have anything. I am here in a nursing home, alone (…) I have nothing to live for or to do anymore.'* Related to this, some residents spoke of home and mentioned that they preferred to be there in a sense that that is where they

belong: *'I would like to go back home. Really. But you shouldn't go and tell that to anyone.' ; 'At home, I drink [brand of beer], but here I'm not allowed to drink my beer.'* Old age and the residential setting could however also be accompanied by a new sense of connectedness by being cared for by others: *'I have sweet children. I can't complain. And such [good] care.' ; 'My children, they take good care of me. I'm really happy with that.' ; 'I'm being cared for by the girls here.'*

Values

In line with the guiding life principles that supported coherence, some participants also talked about values like adages to meaning: *'Respect for others, and not hurting anyone' ; 'Honesty, yes, that's important.' ; 'Straightforward, straight from the shoulder (…) Outright, not lying.' ; 'Continuing to help each other.'*

Other Related Concepts

Some other themes and concepts recurred on a more than idiosyncratic basis, but have not been usually regarded as a possible component of meaning in the literature.

Coping: Accepting and Adjusting

One of the most common codes in the memos was acceptance. Many participants spoke of their ability to surrender to the waves of life, to let things happen and take them as they come. Acceptance seemed to be key in many sense making processes described by the residents. Being able to accept was often spontaneously linked to different positive outcomes (e.g. coherence, fulfilment, happiness). Statements like the following were very common: *'I am happy because I don't ask for much. I say, take it as it is, because if you don't, you will be unhappy.'*

Related to the previous, many residents also spoke of the ability to adjust to and overcome difficulties in life: *'What comes to mind? That it is beautiful. I think it is still good, even if you have problems.'; 'I've never been unhappy. Not that nothing happened to me (…)*

But I always adapted myself.'; 'I like being here. You do have to adjust a little, but your life is one adjustment, right, your whole life is an adjustment. When you're young, but also when you get older.'

Continuing the Everyday, the Normal

Some participants expressed the wish to just continue life as is, without any strong wishes or desires: *'I think my life is good. If it can continue like this I can thank our dear Lord.'; 'Just living on the way I am, I'm satisfied. Yes. I don't need anything more.'; 'The way that I have it now, if I can keep it like that, I would be very happy.'*

They expressed having found comfort and happiness in their current situation, and they would be happy to live on a little longer as they are now. Relatedly, some participants talked about finding meaning in the everyday, the normal: *'Meaningful to me is day-to-day, having a daily decent life. Not in enormous wealth, but just normal.' ; 'Yes, the little things make my life, I shouldn't be waiting for big things anymore.'*

Existential Themes: Death and Freedom

Yalom (1980) proposed that people struggle with four fundamental existential concerns in life: meaninglessness, death, freedom and isolation. Participants spontaneously linked meaning to the other three aspects. The theme of isolation, or its counterpart, is represented in the aspect of belonging/connectedness. The other two components, death and freedom, were also mentioned from time to time when participants were asked about meaning in life. Some participants spoke of death, sometimes in the context of losing a loved one but sometimes also in the context of their own approaching death: *'I know my life won't last long anymore. I accept that. I'm not religious, unfortunately.' ; ' 'I think there will be something there after we die, but we don't know, right. But, if we can die happy, or you know, I mean, if we can accept it, that's already a lot.'* Freedom was mentioned less often and was mostly reflected in statements mentioning being able to do what one wants and the wish to be

independent and autonomous: *'That I can do everything myself, that I don't need somebody else. Because if you need to depend on someone, I don't like that.'; 'I do what I like to do, I eat what I like to eat, and I don't care about the rest.'*

Sources of Meaning

Table 3 shows an overview of the sources of meaning in order of occurrence, with total number and percentage of participants that mentioned each source and quote examples. As can be seen, *family* is mentioned by far the most often, by more than half of participants. Many older adults expressed that their family and partner were of the most central importance in their lives. Within the source family, participants spoke most often of their children, followed by their partner, parents, and grandchildren. The second most occurring source were other *interpersonal relationships*. Participants often talked about the importance of friends, not rarely specifically about friends living with them in the residential care setting.

In line with the finding that fulfilled purposes can still provide meaning, the third most mentioned source was *work*. Many participants spoke about the job or the household work they had done throughout their lives as something that was very important and still carried a lot of value for them. In comparison, less participants—only about 8% —spoke about *personal growth* and *spirituality/religion* as sources of meaning.

Most sources could be categorized under the existing coding scheme. Some additional themes, which already have been mentioned when discussing the components of meaning, did occasionally come up, which seemed specific to the living condition and circumstances of our sample. For example, *home* and *being cared for* seemed to be sources contributing mostly to a feeling of belonging for this sample.

Discussion

In the present paper, we explored whether the dominant psychological views on the components and sources of meaning in life were present in the accounts of older adults with

Alzheimer's disease. Using a directed content analysis approach, we analyzed the short descriptions of 126 older adults with Alzheimer's disease about what came to their mind when thinking about meaning in life. As theoretical background, we started from the tripartite conceptualization of meaning in life, which characterizes meaning as existing of the components coherence, purpose, and significance (George & Park, 2016; Martela & Steger, 2016), and the sources of meaning as specified in the large international study by Delle Fave and colleagues (Delle Fave et al., 2011; Delle Fave et al., 2013).

Tripartite View: Coherence, Purpose, and Significance

Overall, a third of the participants made explicit and spontaneous reference to at least one of the tripartite components. So although not all participants mentioned the tripartite view, taken together, it came up in the data more often than other possible new components of meaning. Especially given the set-up of this study—five minute answers from a large sample—it was a priori unlikely that any theme would be mentioned by every single participant.

When zooming in on the specific components, about 15% of participants made spontaneous reference to the first component of coherence. Importantly, the division between cognitive coherence and felt coherence as forwarded for the first time in our coding scheme found support in the data. Participants made reference to an active cognitive activity of making sense of life as well as to a general feeling that things were (or often weren't) as they were supposed to be. The term *cognitive* component might be somewhat misleading to use in this regard. Making coherence in life does entail cognitive work, but the resulting feeling of coherence is not necessarily dependent on intact cognitive skills. This resonates with Gendlin's (Gendlin, 1962/1997, 1973) concept of meaning as an implicit bodily felt process that encompasses affective as well as cognitive features. Accordingly, Hill (2018) has recently included Gendlin's felt sense of meaning as a fourth component to the tripartite view, defined

as an intuitive experience of meaning which incorporates the affective global implicit assessment of one's meaning in life. This also aligns with the view of Heintzelman and King (2013) that a sense of meaning can arise intuitively, without effortful reflective processes or active construction.

Just as we would and should expect a young child to be able to make its own coherence, based on its available set of cognitive-affective skills (Reker & Wong, 1988), so we can expect the same in people with Alzheimer's disease. It seems therefore that we should be careful to not define coherence to narrowly. Another aspect that came forward in our data, which has been emphasized recently by Wong (2016), was the centrality of a sense-making aspect of coherence. In this regard, coherence does not only involve a stable state of complete understanding, but also very much an ongoing process throughout life. This dynamic aspect is often missed in quantitative research, especially when it is cross-sectional.

The second component, purpose, was referenced again by about 15% of participants. Previous research has suggested that, while the overall experience of meaning tends to be stable or even increase in old age (Steger, Oishi, & Kashdan, 2009), sense of purpose tends to decline (Pinquart, 2002). In the current data we found a possible explanation for this finding. While purpose is mostly conceptualized as the future-oriented component, participants in our sample sometimes spoke of purpose in the sense of *fulfilled* purpose in the past. Participants indicated that these fulfilled purposes still contributed to their sense of meaning, but they often no longer had active, future-oriented goals. This might be true for many older samples, pointing to a possible oversight in current meaning theory, which conceptualizes purpose as beginning in the present moment and projecting into the future. However, from a lifespan perspective, it is normal and adaptive to no longer focus on long-term future-oriented goals when the future time is limited (Carstensen, Isaacowitz, & Charles, 1999). Battista and Almond (1973), who provided one of the first empirical scales for psychological meaning in

life, would probably agree that a one-sided focus on future-oriented purpose is too limited. Their Life Regard Index included a Fulfillment Scale which measured "the degree to which an individual sees himself as having fulfilled or as being in the process of fulfilling his framework or life-goals" (p. 411). While much contemporary meaning work finds its roots in their conceptualization, the aspect of fulfilled life goals seems to have been lost somewhere along the way. In the current study, we therefore did not code such references to fulfilled purposes as purpose, but it might be advisable for future studies to consider including this additional dimension. Especially when researching purpose in older adults, it might be necessary to tailor our measures and questionnaires to their developmentally adapted, less future-oriented understanding of the concept.

Explicit references to the third component of significance were very rare in our sample. This is interesting especially given that a recent study suggests that significance might be the component contributing most to the overall experience of meaning in life (Costin & Vignoles, 2019). We suspect that participants spoke mostly in terms of sources of meaning that contribute to a sense of significance in life, without expanding on this underlying function. When not probed about this explicitly, it might have been difficult for participants to verbalize. As noted by Martela and Steger (2016): "one can argue that spending time with one's family in the present moment might make our lives feel filled with value and significance whether or not it is a conscious goal or not" (p. 7). Not incidentally, family was the single most often occurring theme in our study. Children specifically seemed to have a very special meaning to the majority of participants. Underlying this might be children's power to ensure a certain legacy, a symbolic immortality (Lifton, 1979), a way to extend the present, "to seek assurance that one's existence is (and always will be) more significant than just the day-to-day routine of being alive" (Aarssen, 2010, p. 298).

With regard to the overall tripartite view of meaning in life, we can conclude that 30% percent of our sample referred to the components of coherence and purpose when asked about their general view on meaning in life. Significance was almost never mentioned. This does not disprove the existence of a significance component, but emphasizes the need to clarify this component and its features further, especially as it has received significantly less attention than the other two components in psychological research up to now.

Possible Additional Components and Related Topics

Some concepts, which were at the center of previous conceptual discussions as to whether or not they should be seen as components of meaning, did regularly come up in the descriptions of our participants. We evaluated them based on the proposed criteria that a possible component of meaning should be central to meaning and reasonably unique to meaning.

Affective Component

A very common theme forwarded by our participants was an affective aspect, consisting of feelings of happiness, joy, satisfaction, and fulfilment. This affective component cannot be equated with the component of significance, which is more evaluative and about the perceived importance and relevance of one's life.

As noted, Martela and Steger (2016) took the view that feelings like satisfaction are consequences of meaning that should not be conflated with components. In the earlier conceptualization of meaning by Reker and Wong (1988), on the other hand, such an affective aspect was included as a core component. More recently, Wong (2013) has reaffirmed that "happiness is an inherent component of meaning because satisfaction flows naturally from what is meaningful and virtuous" (p. 11). However, it can be argued that feelings like happiness and satisfaction have been well-defined outside of the conceptualization of meaning in life and are not relatively unique to meaning, and therefore should probably not be included

within the meaning concept. However, our findings highlight an important point: while happiness-related and meaning-related constructs have now been quite clearly distinguished conceptually by scholars, they do seem to naturally grade into one another in the experience of our participants. Some scholars have indeed suggested that, in old age, hedonic aspects of well-being like happiness might become more entangled with eudaimonic aspects of well-being like meaning (Hicks, Trent, Davis, & King, 2012). This also aligns especially well with the tenet of Shmotkin's hostile world scenario theory that subjective well-being (which includes happiness and life satisfaction) and meaning in life are two distinct but complementary and related forces in dealing with threats and challenges in life, and that their interrelation becomes more pronounced when perceived threats are higher (Shmotkin & Shrira, 2013; Shrira, Palgi, Ben-Ezra, & Shmotkin, 2011). As living with Alzheimer's disease is a circumstance that can pose great challenges and threats, this can explain the entwinement of meaning with aspects of subjective well-being in the current sample.

Furthermore, when reflection capacities become more limited, as in our specific sample, it is possible that hedonic feelings are not only important consequences of meaning but also become increasingly important *sources* of meaning. Relatedly, when cognitive capacities decline, such feelings may serve as important information when making judgements about one's meaning in life.

This again hints at the idea that meaning in life should be understood contingently on different developmental stages, an idea that was already proposed by Yalom (1980): "life meaning must be viewed in a developmental perspective" (p. 460). A developmental understanding of meaning in life was very present in the work of Reker and Wong (1988) but has since then gradually faded to the background, though occasionally resurfacing (e.g., Steger, Beeby, Garrett, & Kashdan, 2013). The current findings therefore remind us that a more elaborated lifespan approach to meaning might need to be reconsidered; one that takes

into account how meaning changes in old age, and, given the growing number of older adults living with dementia, how it can be understood in the context of neurocognitive decline.

Relational component

The question of how to differentiate between constituents and sources/consequences of meaning is equally pertinent with regard to a possible relational aspect of meaning. Connectedness and belonging have been included in some views of meaning, for example by Wong (1998a), Schnell (2009), and Derkx (2011, 2015). According to Schnell, Höge, and Pollet (2013), belonging refers to "a sense of being part of something larger than the self . . . [which] counteracts isolation and alienations and imbues life with meaning" (p. 546). This theme was present in the accounts of our participants, but they spoke of belonging and connectedness mostly within the context of concrete relationships with others. It therefore seems to be better classified as a source than a component of meaning. This would be in line with findings showing that belongingness, together with the other psychological needs of autonomy and competence, are predictors of meaning in life (Martela, Ryan, & Steger, 2018).

However, the prominence of references to a certain connectedness in the narratives of participants does warrant attention. A connectedness to people (e.g., in loving family relationships and care) and places (e.g., home) seemed to be running deep through the stories, alluding to a connectedness aspect that is part of the undercurrent of meaning. This accords with theoretical views that see connectedness and relationality as inherent to meaning. Leontiev (2017b), for example, proposed that "[t]he essence of meaning is its relational nature. Meaning is the relationship between the mind and the world, between objective and subjective, between global and situational." (p. 51). Delle Fave and Soosai-Nathan (2014) took a middle ground position and proposed that connectedness is at the same time one of the most important sources of meaning and part of the essence of meaning: "The representation of the individual as connected at the intra and interpersonal level is . . . the central dimension of

meaning in life. . . . this dimension is not only a critical source of meaning but also an indispensable component of meaning itself" (p. 39). This aptly illustrates how sometimes, the border between sources and components of meaning can become blurred. Following these views, a facet of connection—one that transcends everyday relationships—might be central and relatively unique to meaning and might thus be considered as a possible additional component or central aspect underlying all components. However, the current data in itself does not provide sufficient evidence for this claim and more in depth investigation of this aspect is necessary.

Either way, connectedness seems of special importance for people with dementia. Previous qualitative research described how living alone with dementia can render life "fragmented", and that many important things that were once central to life can appear to lose meaning (Svanström & Sundler, 2015). Preserving a connectedness to the world can then be argued to be a central task when dealing with dementia. This also speaks to a social responsibility we have as a society to assist people with dementia in doing so.

Values

In line with scholars who include a value-related component in their view of meaning (Baumeister & Landau, 2018; Huta, 2017), some participants also made reference to values. When values were mentioned, they were often framed as guiding life principles, as adages, part of an overarching meaning model. In this sense, values seem closely connected to the coherence component, as they articulate important aspects of how we understand ourselves, how we want to be seen, and how we want to act in the world. These mental models may in their turn guide the formation of valued life goals and therefore inform purpose. At the same time, being able to behave in according to one's guiding life principles may make one feel more worthwhile, thus increasing significance. It could therefore be argued that values should

not necessarily be conceptualized as a separate component, but as closely connected to and running through the existing tripartite view.

Leontiev (2017b) also commented on the complex relationship between meaning and values and noted that "all human values are ideals elaborated as generalized products of the experience of varied social groups, from a nuclear family to the entirety of humankind; individuals internalize these values through socialization. Personal (internalized) values relate to the nature of meaning and are part of an individual meaning network" (p. 53). From this perspective, a link can again be made with the importance of children, as they function as the optimal "vehicle" for transmitting one's own values and beliefs into the future, even after one's own life has ended (Aarssen, 2010, p. 299).

Related Topics

An important theme forwarded by participants was the importance of continuing the everyday, the normal; a quiet continuation of the simple life. This finding is in line with the proposition made in the literature that meaning in life is in fact a commonplace experience (Heintzelman & King, 2014b) and it finds some empirical support in a study that has associated meaning in life with higher preference for routines (Heintzelman & King, 2019). Baumeister and Landau (2018) view continuity as a part of the coherence component, involving the connection and integration of one's past, present, and future. For participants with Alzheimer's disease, the desire to continue the normal everyday life may obtain a special meaning because of the threat that the disease poses on being able to do so (Dewitte et al., 2020).

When the normal is then disrupted, participants described surrendering to the waves of life, calmly dealing with what comes their way and accepting it. This accepting and adjusting was another recurring theme, fitting our participants' developmental stage and maybe especially their situation of living with a chronic neurodegenerative disorder. This is

somewhat in line with the view of Wong (1998a), who included a 'personal component' of personal qualities and attributes, including things like being able to accept one's limitations (p. 114). This idea can be linked back to the foundational work of Frankl, who emphasized that meaning is strongly contingent on the attitude that one takes toward one's existence and the circumstances that one encounters (Dezelic, 2017; Frankl, 1984). In this regard, the accepting attitude that some participants took towards the existential theme of death, which often becomes more central in their daily context, was striking. In the descriptions given by our participants, accepting/adjusting were clear elements of their sense making process. In this sense, these themes could also be connected to the assimilation/accommodation processes described in previous meaning making models (Park, 2010; Proulx & Inzlicht, 2012).

Sources of Meaning

Most sources discussed by the older adults with Alzheimer's disease who participated in the current investigation fit with the list of important sources forwarded by Delle Fave and colleagues (Delle Fave et al., 2011; Delle Fave et al., 2013). In line with findings in the general population (Grouden & Jose, 2014; Lambert et al., 2010) and previous quantitative research into sources of meaning for older adults with Alzheimer's disease (Dewitte, Vandenbulcke, Schellekens, & Dezutter, 2019), family was by far the most prominent theme, present in the description of more than half (56%) of the older adults. Within the category of family, children were most central and seemed to have a very special place in the lives of participants. Somewhat in line, other interpersonal relationships beside family members were also commonly discussed.

Also in line with our previous quantitative results, health was a common theme, often expressed as very important. Maybe somewhat surprising, a substantial part of participants spoke of their jobs when asked about meaning in life. Although many of them have been out of the work force more than a decennium, the memories of the work accomplished was still

very meaningful. This can be linked back to the finding that purpose was often discussed in terms of *fulfilled* purpose. Similarly, many sources that had taken a central position in participant's life and goals earlier in life, were still discussed as rendering life meaningful up to the present day.

A Note on Illusions

It should be noted that the truth value of what was believed and discussed by our participants was deemed irrelevant to the evaluation of meaning. In other words, in line with a humanistic science as promoted by Reker and Wong (1988) in their foundational work on meaning, the experience of participants were regarded as empirical facts, regardless of whether these accorded with objective reality. For example, some participants made to their parents, as if they were still alive: '*Of course they are a lot older than me, but I love them. I hope I can still have them with me for a long time, that they can take care of me. I mean, I'm being taken care of by the girls. But I still like to have my parents with me.'* It might be suggested that these participants are living in an illusion. However, it has become an accepted tenet that sustaining a certain level of positive illusions is a normal aspect of psychological functioning in general—so not limited to those with Alzheimer's disease—which can even be beneficial for well-being and meaning (Schütz & Baumeister, 2017; Taylor & Brown, 1988; Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). It may be argued that to some extent, we are all living our own personal illusions.

Limitations

Some important limitations should be taken into account when evaluating the present study. First, while we believe the theory-driven approach of directed content analysis was best suited for the goals of the present study (scrutinize and possibly extend an existing theoretical framework), it has the downside of curbing creativity and possibly obscuring new insights emerging from the data. Relatedly, to maximize objectivity, we performed a manifest content

analysis, as opposed to a latent analysis. This means that as a general rule, underlying meanings of the text were not interpreted, and only manifest, explicit content was coded. This has the benefit of restraining researcher bias, but the downside of not illuminating the undercurrent of the data. It also means that we interpreted our data within a predetermined theoretical framework, possibly passing over other theories that could be relevant in interpreting the findings. For example, the data could also be framed well within Ryff's (1989, 2013) model of psychological well-being (which includes for example the aspects positive relations, purpose in life, and autonomy). However, as we set out to focus specifically on meaning in life theory, we did not discuss this model. Second, we verified to what extent the components and sources of meaning we chose as a starting point were spontaneously present in our participant's descriptions, but these components and sources were not brought up and explicitly questioned by the researcher. It is likely that many participants would have elaborated more on, for example, the component of significance, if asked about it specifically. It might be a good idea for future research to complement broad open questions with specific follow-up questions explicitly checking whether or not participants view certain themes as part of meaning in life. Relatedly, participants provided short answers of maximum 5 minutes, in which probing and in-depth questioning was limited. This is a limited time frame for acquiring a description of a complex concept such as meaning. However, this did allow us to collect descriptions from a large sample, as opposed to the in-depth view of a small sample.

Third, the phrasing of some of the probes that were used to elicit further responses from participants who provided very short answers will probably have provoked more sources of meaning than components. For example, when participants had a hard time answering the question, the researcher would sometimes ask questions like 'what is meaningful in your life?' However, the effect appears to be quite limited, as still about half of the references to purpose and about a third of those to coherence were made after these more concrete probes.

Fourth, because of the cognitive deficits of our population, some participants may have engaged in more associative replies, providing off-topic answers in the process. We tried to identify such off-topic passages, relying on the clinical judgement of the interviewers and the broader context of the answer, but these may not have been eliminated completely.

Finally, given the convenience sample and the qualitative approach used, our findings are not broadly generalizable and will need formal replication, preferably also in more diverse samples, for example, including older adults with different neurocognitive disorders or with a different cultural background.

Conclusion

Our findings corroborate the position of purpose and coherence as central components in the conceptualization of meaning in life, as they found validation in the specific population of older adults with Alzheimer's disease. The position of significance requires more attention and clarification in future studies, as does the possibility of a connection aspect of meaning. Our approach demonstrates the value of examining existing theories in new populations in order to gain new insights. More specifically, the study contributed to the meaning literature by delivering first evidence for a distinction between cognitive and felt coherence. Furthermore, our findings demonstrate the need to reinvigorate lifespan perspectives on meaning in life. With aging and cognitive decline, feelings like contentment and happiness may be both important outcomes and sources of meaning in life. For a population with cognitive challenges, these feelings may also become more strongly entangled with the personal experience of meaning, making it hard for participants to distinguish them. Finally, an important take away of the current study is that purpose in life may need to be understood more broadly in old age, including fulfilled, non-future oriented purpose.

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Table 1

Overview of changes made to coding scheme during the coding process

Time	Changes	Rationale
Before coding	1) Addition of code ‘4 - general meaning in life’	Need for code reflecting the general experience of meaning in life without reference to a specific component or source
	2) Subdivision of code ‘6 - family’ into different subtypes of family members (6a to 6f for partner, parents/grandparents, children, grandchildren, siblings, and other)	Need to make differentiation between family relationships, as participants made reference to many different relationships
	3) Subdivision of code ‘1 – coherence’ into ‘ 1a - cognitive coherence’ and ‘ 1b - felt coherence’	Implicit distinction present in the literature (George & Park, 2016; Martela & Steger, 2016)
After coding round 1	4) Addition of ‘lack of …’ subcode for each component and the general experience of meaning (codes 1 to 4)	Participants often described meaning in terms of things that were missing as well
After coding round 2	5) Decision to only code every specific code once per participant. Different sub-codes under the same main code (e.g., family partner, family child; purpose, lack of purpose) could still be coded within the same participant	Participants had the tendency to repeat themes, which could give a distorted image as we were predominantly interested tendencies across the whole sample, and not in the number of times the components or sources were mentioned within one person (Mattis, 2002)
	6) Subdivision of code ‘9 - health’ into ‘9a – physical health’ and ‘9b - mental health’	

Table 2

Frequency of tripartite components and subcomponents

Components	Subcomponents	Number of participants	% of participants
Coherence		***20*** [a]	***15.9***
	Cognitive coherence	8	6.3
	Lack of cognitive coherence	7	5.6
	Felt coherence	2	1.6
	Lack of felt coherence	7	5.6
Purpose		***21***	***16.7***
	Purpose	19	15.1
	Lack of purpose	2	1.6
Significance		***3***	***2.4***
	Significance	2	1.6
	Lack of significance	1	0.8

Note. Percentages calculated based on the number of participants that provided an answer to the open question (n = 126)

[a] The sum of the coherence subcomponents equals 24 and not 20 because four participants mentioned more than one subcomponent. For the total coherence score, these participants were counted only once.

Table 3

Frequency of sources of meaning and example quotes

Source	Number of partcipants	% of participants	Example quotes
Family (total)	71	56.35	*'Yes, life has meaning, because I am happy here, because I still have my family who support me.'*
children	43		*'A good relationship with the children. And now they also care for me a little. And that means a lot, that means a lot in life. Especially your children.'*
			'The children, that is everything to me. The children and housekeeping, that was everything for me. And my husband finally also, but he chose someone else.'
partner	32		*'The togetherness with my husband.'*
			'My husband, he visits, yes. And we have no children. So we are connected to each other.'
			'That I could have my husband for a long time, yes, that is meaningful.'
parents	11		*'My parents, they are meaningful to me.'*
			'That I can have my parents with me as long as possible.'
grandchildren	8		*'About my children, and grandchildren, and greatgrandchildren. That is the thing that still gives me meaning.'*
			'What is important to me, that is having a good talk with my son, with my two granddaughters, a little.'
siblings	7		*'I have a sister, we got along well, yes. And my parents were good parents. Yes yes yes. I've had a good life at home.'*

other	6		*'That you may be good and happy, and I am. I have a good son and a good daughter in law. That is everything.'*
Interpersonal relationships	38	30.16	*'For me, meaning in life is being open to friend or family*.'
			'Friendship, and being content with everyone. I have no enemies or nothing. Good girlfriends, from here as well.'
Work	26	20.63	*'The most important thing in my life? My job.'*
			'Fulfilling the task you get as work.'
			'The children and housekeeping was everything to me.'
Health (total)	22	17.46	*'Health is the most important for me and then you need to be a happy and content person.'*
			'I hope I can stay healthy here for a long time still. That I can still enjoy my old day a little.'
physical	7		*'I can still eat and sleep a little. And I'm still clean in my bed. What more can you ask for?'*
			'That I can, yes, that I can still be healthy.'
mental	3		*'I had hoped that it would be different, but because of health reasons we live separately now, until I'm a lot calmer again.'*
			'Because otherwise, you're sitting there all stupid and you start forgetting everything.'
Leisure	21	16.67	*Every Sunday celebration (laughs). We get together and play together.'*
			'I have music, music, and soccer.'
Life in general	21	16.67	*'That you're alive. That you're alive and able to live.'*
			'That it is beautiful. I still think it is good, even if you have problems'
			'My life as it is.'

Society and community	18	14.29	*'I also occupy myself with the residents who can't do anything anymore. When we're sitting at the table, I play a game with them.'* *'When I see people who are struggling, who can't get into the chair, than I always go and help.'*
Standard of living	17	13.49	*'A little wealth'* *'The good thing is getting money'*
Personal growth	10	7.94	*'The meaning of your life that is, yes, getting ahead, improving yourself!'* *'And you have to work at that, you have to work at it yourself.'*
Spirituality/religion	10	7.94	*'I have to say, I appreciate religious teaching, because it fights a lot of evil. Or makes up for it. . . . Religion is for me a very valuable given in the life of people.'* *'I often say: 'I can thank our dear lord, I've had a good life.'*