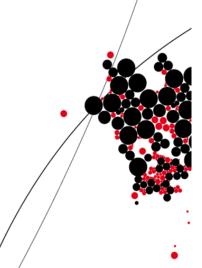# UNIVERSITY OF TWENTE.

What aspects of hedonia and eudaimonia do people describe in narratives about flourishing?

Charlotte Drenski, s1844857

Bachelor Thesis Psychology
June 27, 2019

Supervisors:
Anne Slok-Vopicka, M.Sc.
Dr. Marijke Schotanus-Dijkstra
Faculty of Behavioral, Management and Social Sciences (BMS)
Psychology, Health & Technology (PGT)

Abstract

Background. Positive psychology established the goal to increase flourishing in the general population. Research on this topic has shown that there exist different points of view on how flourishing is constituted. The main debate involves whether hedonic elements, as positive affect and absence of pain or eudaimonic concepts as self-realization, virtuous behavior and meaningful relationships are more important when flourishing. In addition, a clear definition of eudaimonia is missing. However, previous research was mainly quantitative.

Objective. The current study aims to examine the concepts of hedonia and eudaimonia and their contribution to flourishing in narratives. Moreover, this thesis intends to obtain a contemporary and unambiguous definition of eudaimonia by analyzing the narratives.

Method. A qualitative research design, where 35 texts of participants categorized as flourishing were analyzed, was employed. Participants were asked to firstly describe their own flourishing and secondly to describe a flourishing person they know or how they imagine a flourishing person to be. Answers were coded deductively and inductively.

Results. The analysis showed that the majority of participants named both aspects of hedonia and eudaimonia in their texts. Individuals mostly experienced hedonic emotions like happiness, joy and a sense of well-being when engaging in eudaimonic activities as spending time with people close to them. Additionally, the main codes for eudaimonia were meaningful relationships, improving the well-being of others, self-realization and self-development, implying that ancient terms as proposed by Aristotle, such as wisdom, generosity and courage are of less importance nowadays.

Conclusion. The results confirm that the joint presence of hedonic and eudaimonic elements leads to flourishing. Moreover, new insights were not only gained regarding the definition of eudaimonia but also regarding differences in how people describe themselves and how they expect a flourishing person to be. Future research is needed to investigate the relationship between hedonia and eudaimonia in more detail and to show how flourishing develops with time.

Table of Contents

Introduction

What is it that makes a life a good one? Since 1988, when Seligman introduced the field of positive psychology, social scientists are occupied with answering this question. Recently, one central topic of positive psychology has become the concept of flourishing, which is the presence of mental health or well-being (Keyes, 2002; Seligman, 2011). Yet, there is no universal and unambiguous definition of flourishing and it is still unclear which aspects of well-being are important for flourishing people. However, since the goal of positive psychology is to increase flourishing in society, a clear definition is needed.

Keyes (2002) describes flourishing as the presence of high levels of emotional, psychological and social well-being. Seligman (2011) equates flourishing with pleasure, engagement and meaning, relationships, and accomplishment and Diener et al. (2010) defines a flourishing person as having a purpose in life, positive relationships, competence, self-esteem, optimism, showing engagement and supporting the well-being of others. Further, Huppert and So (2011) defined and operationalized flourishing by taking opposite poles of the diagnostic criteria for depression and general anxiety disorder and tested it in the general population. Their results showed that flourishing people display competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, and vitality. These definitions demonstrate that flourishing is versatile but overlapping in the emphasis on positive emotions, a meaningful life, positive relationships with others and contributing to the well-being of others (Hone, Jarden, Schofield, & Duncan, 2014).

Importantly, research on flourishing has established that having good mental health is not merely the absence of mental illness, as "measures of mental illness correlate negatively with measures of subjective well-being" (Keyes, 2002, p. 209), but also the presence of mental health symptoms. Accordingly, to not only focus on decreasing symptoms of mental illness but also to point out the strengths and competencies of people with a mental disease would help to enhance their well-being (Huppert & So, 2011). Indeed, Schotanus-Dijkstra, Keyes, Graaf, & ten Have (2019) proved that individuals diagnosed with mood and anxiety disorders were able to flourish. Thus, mental health can be seen as consisting of two continua, mental health and mental illness, which exist independently of one another.

Examining the concept of flourishing in more detail, it can be stated that many studies have been conducted regarding what distinguishes "flourishers" from "non-flourishers" (Schotanus-Dijkstra et al. 2015; Huppert, 2009). However, there is a lack of literature

investigating if there are different types of flourishers. Still, analyzing these differences is of importance in order to know where to focus on to increase flourishing. To begin with, it needs to be determined what constitutes mental well-being, i.e. flourishing. There are two pathways to describing well-being, both of them having their roots in the philosophical study of happiness (Keyes, 2012). First of all, there is hedonia which equates subjective happiness and can be classified as representing the emotional well-being category of Keyes. The concept of hedonia targets a specific outcome, which is increasing positive affect and decreasing pain in the present moment (Huta, 2013; Huta & Ryan, 2009; Ryan, Huta, & Deci, 2006). This implies for example, seeking pleasure in social interaction, hobbies as doing sports, playing video games or engaging in artistic activities. The second concept is eudaimonia, which is more than a state since it eventually leads to long-lasting well-being, in other words standing for a life well lived (Keyes, 2012). It represents the psychological and social well-being categories of Keyes (2002). The earliest definition of eudaimonia traces back to Aristotle's Nicomachean Ethics in which he emphasizes the development of a person's potential, the focus on the best within him and the importance of virtue (Waterman, 1990). Further, according to Aristotle, a person living a eudaimonic life acts courageous, wise and generous. These characteristics constitute the psychological well-being category. However, eudaimonia also includes a social well-being category, since the goal is not only attaining self-realization for the sake of personal well-being but also to increase the well-being of others. This includes, on the one hand, maintaining positive and meaningful relationships and feeling socially accepted and, on the other hand, engaging in activities that enhance the well-being of other people by means of social contribution and engagement (Huta, 2013; Keyes, 2002; Waterman, 1990).

To date there has been little agreement on whether hedonia and eudaimonia can be regarded as both playing an equally important role when aiming at increasing mental well-being or if the presence of one concept is sufficient. Firstly, this debate arose due to the fact that it seems to be difficult to arrive at a joint definition for eudaimonia (Kashdan, Biswas-Diner, & King, 2008). As Sheldon (2016) states, several scales that measure eudaimonic well-being, including Ryff's six-factor model of psychological well-being (Ryff & Keyes, 1995), Seligman's PERMA model (Seligman, 2011) and Huppert and So's Flourishing model (2009) include a different amount and different types of concepts that constitute eudaimonic well-being. Thus, there seems to exist a wide range of eudaimonic terms without one clear definition, leading to the concern if eudaimonia can be used as an independent term (Thin, 2016). Furthermore, this assumption suggests that quantifying eudaimonia is challenging and

that measuring hedonia is more straightforward (Thin, 2016). As a consequence, it is being proposed that increasing subjective well-being should be done as simply as possible, namely by focusing on promoting hedonic emotions such as pleasure (Sheldon, 2016). Similarly, Huta (2018) notes that hedonia is more fundamental and serves as a basis for a good, healthy life, whereas eudaimonia is only aspirational when hedonia is already given, which demonstrates that hedonia might be sufficient for attaining high subjective well-being or flourishing. Secondly, other researchers argue that hedonia and eudaimonia lead to different kinds of well-being. Detailed examination of optimal human functioning by Joshanloo (2018b) showed that subjective well-being (SWB) and psychological well-being (PWB) are predicted by different factors, considering for example that PWB correlates only weakly with economic factors, however SWB or in particular, life satisfaction, shows a strong correlation with economic factors. In addition, Joshanloo (2018b) demonstrated a discriminant validity between the concepts, supporting that they establish different types of well-being. Similarly, Huta and Waterman (2014) argue that due to the fact that eudaimonia has to be considered a characteristic or a way of living, the subjective emotions that are experienced when performing eudaimonic activities are distinguishable from hedonic emotions as experiencing pleasure. Hence, these arguments imply that hedonia and eudaimonia do not collaborate when flourishing.

On the contrary, proponents of the importance of eudaimonia advocate the view that hedonia alone is not satisfactory in explaining well-being (Ryan & Deci, 2001). For example, Joshanloo (2018a) demonstrated that SWB needs to be supported by high levels of PWB in order to promote long-term well-being. He further argues that focusing on PWB "might be more beneficial than SWB in the long run" (p. 4) due to the fact that PWB has a higher chance of increasing both facets of well-being. Likewise, arguments for the importance of both hedonia and eudaimonia in increasing flourishing are for example that positive affect, which characterizes hedonia, is a consequence of functioning well, which is eudaimonia (Ryan et al., 2008). In addition, Kashdan et al. (2008) even suggest a reciprocal relationship between the two concepts, supporting that they cannot exist without one another. Referring back to Joshanloo's study (2018b), even though he asserts a discriminant validity between the concepts, he also reported that two of the most important predictors for PWB on the individual level are positive affect and life satisfaction. By the same token, some studies have shown that the combination of high levels of positive affect, which implicates hedonia, and engagement and meaning in life, which indicates eudaimonia leads to the highest well-being and therefore flourishing (Schotanus-Dijkstra et al., 2015; Huta & Ryan, 2009). Accordingly,

it might be critical to make a qualitative difference between forms of well-being and stating that the presence of one is sufficient (Kashdan et al. 2008).

In a cross-cultural mixed-methods study about hedonic and eudaimonic components of happiness, Delle Fave, Brdar, Freire, Vella-Brodrick and Wissing (2010) found that participants refer to both hedonic and eudaimonic aspects when being asked to explain their perception of happiness. Remarkably, answers containing eudaimonic terms were even dominant. In detail, their results showed that meaningful relationships especially with regard to family, health, and standard of living were mostly mentioned (Delle Fave et al., 2010). Accordingly, the qualitative findings of Delle Fave et al.'s study (2010) support that it is apt to consider eudaimonia and hedonia producing the highest well-being together.

This ongoing discussion and disagreement on how much each concept contributes to high mental well-being, which of them is more important or if they complement each other, results in a need for more research that investigates flourishing thoroughly. Asking flourishing people themselves is a helpful step since much quantitative research has been done on this topic, however insights that can be applied practically are still missing. Especially due to the fact that eudaimonia seems to be a term that includes a variety of concepts, the impression of lay people might be beneficial to come to a clear definition. In addition, some aspects of eudaimonia are derived from ancient Greek traditions, thus it might be the case that people have a different perception nowadays (Delle Fave et al., 2010). More knowledge about the concept of flourishing will help increase the percentage of people who flourish, for example when aspects can be incorporated into therapy. Moreover, research has shown that higher well-being correlates with better productivity, more prosocial behavior, a better general health, and a higher life expectancy (Huppert & So, 2011). In addition, fewer days of work loss and better coping in daily life as in being more resilient have been reported to correlate with flourishing (Keyes, 2002). Hence, raising the number of people who flourish is not only beneficial for the individual but also for society in general.

Since the majority of studies were conducted using only quantitative measurements, this study will employ qualitative research in order to get a deeper insight into how people flourish and if high well-being is constituted by different aspects for each person, resulting in different types of flourishers, namely a hedonic flourisher, a eudaimonic flourisher or if a combination of both concepts is needed. First of all, quantitative measures will be applied to determine whether participants are flourishing or not. Then, open questions will be asked to be able to analyze detailed answers about what makes people flourish and how they imagine a flourishing person, if they are engaging more in eudaimonic activities, just experiencing

hedonic emotions, or both. Thus, the aim of the current study is to qualitatively examine how aspects of eudaimonia and hedonia are described by lay people and if the definition of eudaimonia derived from ancient times is still valid in the 21ˢᵗ century. First, it is expected that flourishing is only possible when elements of both hedonia and eudaimonia are present. Second, it is expected to get new insights into people's perception about what eudaimonia means compared to literature.

Method

Design

The current study employed a qualitative design using two open-ended questions with the purpose to acquire detailed information about the nature of flourishing. Beforehand, participants provided written informed consent after being thoroughly informed about their rights and the aim of the current study. The Ethics Committee of the University of Twente approved the study (no. 190320).

Participants and Procedure

Participants were recruited by convenience and purposive sampling in March and April 2019. Convenience sampling was chosen since it requires the least amount of effort, time and money (Marshall, 1996). Thus, participants were approached in the social environment of 14 researchers. Purposive sampling was used in order to ensure diversity among participants, especially regarding age. Inclusion criteria were living in Europe, speaking German or English, being above 18 years old and having an internet connection and an email address, due to the online nature of the study. In case people agreed to participate, they were informed about the purpose and procedure of the research. It was emphasized that all data would be anonymized. The survey was conducted by each participant on their smartphone or computer without any supervision. The use of their own computers or smartphones had the benefit that participants could choose a time to fill in the questionnaire that was convenient for them. Moreover, it increased the feeling of anonymity. In this way, 176 eligible German and English speaking people could be reached who were willing to participate. However, 48 participants did not complete the baseline survey and were excluded from the study. Of the 128 remaining participants, only data of those who were flourishing was used. The baseline survey using the MHC-SF served to divide the sample into two groups, flourishing and not flourishing. The MHC-SF is a 14-item self-report-questionnaire which measure mental well-being. Participants can either score in the "flourishing" range, the "moderately mentally healthy" or

the "languishing" range. In order to be categorized as flourishing, at least one out of three of the hedonic well-being items and six out of eleven eudaimonic items must be answered with "every day" or "almost every day". In case the above mentioned number of items is answered with "never" or "once or twice", the person can be seen as languishing. Any other result indicates moderate mental health. Participants who were moderately mentally healthy or languishing were excluded. This procedure resulted in a sample consisting of 45 flourishing German participants and eight flourishing English speaking individuals. Of these 53 participants, only 35 responses were useful with regard to the open questions, since some participants either did not write anything or just a few sentences. Thus, the final sample included 35 individuals, of which 29 were German and 6 were English speaking. Table 1 shows detailed characteristics of the participants.

Table 1

Characteristics of participants (n =35) in the qualitative study on flourishing, divided into the German (n = 29) and the English Sample (n = 6)

Characteristics		German Sample	English Sample
Gender, n (%)	Female	12 (41.4)	3 (50.0)
	Male	17 (58.6)	3 (50.0)
Age, Mean (SD)		33.24 (15.73)	43.83 (19.45)
Highest degree, n (%)	High school graduate	14 (48.3)	2 (33.4)
	College degree	8 (27.6)	4 (66.7)
	PhD	1 (3.4)	
	Apprenticeship and further training	3 (13.8)	
	Other	2 (6.9)	

Measures

The participants were asked to answer two open-ended questions about flourishing. These questions were constructed by the researchers themselves, with the aim to formulate broad questions that reduce the risk of response bias but encourage the participants to write down their thoughts. Accordingly, the first question was "Please describe one or more situations wherein you flourish. When you describe such situations, try to think about how you function as a person, how you function as a person in relation to others and/or how you function as a person in relation to society" The second question was: "Think about a person who you believe is representative for a person who is flourishing. Please describe this person: What makes you believe that this person is flourishing? How does this person act? What does he/she feel or think?". The participants were instructed to write about half a page for each question.

Qualitative Analysis

First, each participant was assigned a number and all names and locations were removed to anonymize the data. In the beginning, the texts were read to get a general overview with regard to content, length and context. Notes were taken in order to structure the first impression. Subsequently, a coding scheme was developed. The scheme was divided into two categories, eudaimonia and hedonia. In order to create more specific codes, a deductive method was applied. Definitions of eudaimonia and hedonia as proposed by literature served as a theoretical framework and as a basis for the codes. A person having eudaimonic traits is predominantly defined as, on the one hand, striving to realize himself by means of continuous self-development and by acting courageous, wise and generous (Waterman, 1990; Keyes, 2012). On the other hand, a eudaimonic person also aims at enhancing the well-being of other people, thereby emphasizing concepts as social contribution, social acceptance and engagement (Waterman, 1990; Huta, 2013). Thus, the following preliminary codes were developed: autonomy, engagement/social contribution, self-development, courage, generosity, self-realization/realizing the best in oneself, well-being of others, wisdom and virtue.

Codes for the hedonic category were based on definitions by Ryan, Huta and Deci (2006), Huta and Ryan (2009) and Huta (2013). Positive affect is presumably the most important term that constitutes hedonia. Ways to reach this state include social interaction or engaging in hobbies or artistic activities. Thus, initial codes for hedonia were positive affect, absence of pain, relationships/social interaction, hobbies and art/music. It was decided to assign hobbies to the hedonic category, since it was expected that individuals pursuing their

hobbies experience rather short-term positive emotions. Additionally, hobbies seem to lead to a state where individuals lose track of time, however, only momentary.

Establishing the coding scheme and coding the texts was done by one researcher alone. To ensure accurate coding, an iterative process was applied. The unit of analysis was mostly whole sentences or text fragments. The coding scheme allowed to code one sentence or fragment with more than one code. However, at some points it appeared to be difficult to decide if a code belonged to the eudaimonia or the hedonia category. Thus, texts in which the certain code appeared were examined in more detail, in order to get information about the context in which the code occurred. Next to this, the items of the MHC-SF (Keyes, 2002) were checked in order to use the theoretical framework to assign the codes to either hedonia or eudaimonia. Further, some codes were merged to one code and others were extended by adding a second code name. For some codes, it was especially important to agree on a clear definition, in order to set boundaries between codes that resembled. Further rounds of coding served to establish the final coding scheme by adding and modifying codes continually.

Results

To start with some general remarks, the answers to the questions varied in length, ranging from 80-311 words per answer. On the whole, all texts were rich of information, making it possible to code every text several times. The analysis showed that in 80.1% of the texts both hedonic and eudaimonic elements were mentioned. In total, 443 fragments of 35 participants were coded. Notably, eudaimonic elements were mentioned more frequently (316) than hedonic elements (127) (Table 2).

There appeared to be differences in answers with regard to the first and the second question. Answers to the first question were longer and included mainly past experiences of the participants or certain situations, which they described in detail. Answers to the second question contained in some cases direct descriptions of a person the participants know, however, mainly a hypothetical person (68.6%) was portrayed who appeared to be a perfect ideal, as for example one participant (Pt. 29) described Jesus Christ, and another participant described a monk (Pt. 8).

Table 2

Coding scheme: Codes, definitions, examples and % of the total of the hedonic and eudaimonic categories

Code	Definition	Example	Total	%
1. Hedonia			**127**	**100**
Positive Affect	Positive emotions like feeling happy, relaxed and content	"I feel happy, satisfied, stress-free and empowered."	40	31.5
Social Interaction	Rather superficial interactions	"In addition, I experience this feeling when I have good conversations with my supervisor and when I am in direct contact with customers [...]"	23	18.11
Positive Attitude	Optimism, Enthusiasm, Positivism	"She often feels optimistic, content and capable."	20	15.57
Hobbies	Activities or interests pursued for pleasure or relaxation and not as a main occupation	"Going to the museum, reading books and watching movies brings joy."	19	14.96
Nature	Showing interest in/ enjoying spending time in nature	"I find the weather can have a big impact on the situation, when the sun is shining and the sky is blue, everybody seems to be in a much brighter mood."	12	9.45
Absence of Pain	Being able to avoid negative effects or experiences	"[...] and I feel free from stress and burden."	7	5.51
Passion	Having a special interest in or wish for doing something, such as a hobby, activity, etc.	"She engages in activities she is enthusiastic about. Her passions, hobbies and people she likes"	6	4.72

Code	Definition	Example	Total	%
2. Eudaimonia			**316**	**100**
Meaningful Relationships	A relationship based upon mutual respect and supportiveness and marked by a sense of commitment and fulfillment	"Deep relationships of trust, worship and gratitude."	40	12.66
Well-Being of Others	Caring about other people, wanting to contribute to their well-being	"They do not only help when others suffer. They can share the happiness of others as well."	34	10.76
Self-Realization	Striving to realize one's potential and the best in oneself or having already achieved it	"These people seem to have found their purpose. They seem to get carried away and are absolutely happy when engaging in this."	32	10.13
Self-development	Constantly trying to improving oneself as in for example educating oneself	"However, she is really ambitious and want to achieve more and more, as in helping other people."	27	8.54
Engagement/social contribution	Contributing something meaningful to society, advocating for other people	"(…) he tries to make the world a better place by informing himself, constantly learning and broadening his mind."	24	7.59
Job	Work-related situations, also including school or university	"He works hard and enjoys his work."	24	7.59
Autonomy	Experiencing the absence of external duties and being able to live independently guided by internal standards	"This person is not dependent on expectations of the society, his job or his private environment."	22	6.96
Virtue	Acting according to high moral standards	"And they don't lie. They're responsible for their deeds. They are not jealous"	21	6.65
Confidence	Includes self-confidence and recognizing that another person is confident; full trust; belief in the powers	"She is self-confident and at peace with herself."	21	6.65

Code	Definition	Example	Total	%
Competence	The quality of possessing the required skills, knowledge, qualification, or capacity	"I feel really good when I accomplish all tasks that were assigned to me."	15	4.75
Social acceptance	Being respected, accepted and appreciated by other people	"Receiving appreciation and praise for one's skills or for one's personality."	14	4.43
Self-acceptance	Awareness of one's strengths and weaknesses including the realistic appraisal of one's talents, capabilities, and general worth	"A content individuals are at harmony with themselves."	13	4.11
Openness	Traits like having wide interests, and being imaginative, insightful and open to new experiences	"(...) she is open towards all particularities the world offers."	13	4.11
Spending time alone	Enjoying the absence of other people and being able to deal with oneself	"Sometimes I find I can flourish without any interaction at all."	7	2.22
Balance	Being at harmony; being able to meet the challenges of the job but also of personal life	"[...] a person that manages to balance duties at work and duties of personal life and still being successful at both"	6	1.9
Wisdom	The quality of having experience, knowledge, and good judgement	"In addition, working with elderly people helped me reconsider my values. Thus, prestige, money and luxury are not important to me anymore."	3	0.95
Generosity	Readiness or liberality in giving		0	
Courage	The quality of mind that enables a person to face difficulties without fear; bravery.		0	

3. Miscellaneous

Irrelevant information		"The described people do not act according to materialistic values, meaning that it is not their goal to earn more money or life in luxury."	6	

1. Inductively derived codes

1. 1. Hedonia

Applying the inductive method after the first round of coding led to the following additional codes for the hedonic category: Positive attitude, passion and nature. Decisions to assign these codes to the hedonic category were based on the fact that firstly, positive attitude matches the emotional well-being category of Keyes' MHC-SF (2002). The texts showed that participants described a flourishing person as being satisfied with their lives, no matter what happens. These people hold an optimistic stance towards all life situations and are able to deal with them. Secondly, the code passion was allocated to the hedonic category since it seems that people flourish when they engage in activities they are dedicated to, as for example their hobbies, which was a hedonic code. Thirdly, the code nature was also assigned to hedonia due to the fact that participants related nature to rather short-term positive emotions, as for example taking a walk when the weather is good or waking up in a positive mood when the sun is shining.

1. 2. Eudaimonia

The eudaimonic category was expanded by meaningful relationships, self-acceptance, social acceptance, openness to new experiences, work-life balance, having a job and self-confidence. The first round of coding showed that the initial code relationships/social interaction needed to be treated in a more nuanced way. As a consequence, the code social interaction emerged for the hedonic category, including more superficial social interaction with, for example, colleagues or customers at work, leading to rather momentary positive feelings. The code meaningful relationships arose which undeniably belongs to the eudaimonic category. This code primarily addressed family and close friends. Participants highlighted that these relationships are built on mutual appreciation, respect, support and acceptance.

Multiple participants wrote about their job as being an important part of their life, stating that being successful and content helps them to flourish. In addition, having the feeling that contributing something to society when performing their job was also emphasized. In addition, this code was closely connected to the code competence. Competence was associated with being successful in mastering duties at home, at work or at university and can be attributed to the 'environmental mastery' item on the MHC-SF (2002). Accompanying this, the balance code emerged. Most striking was being able to keep a balanced relationship between job and free time and between physical and mental health.

The codes self-acceptance and social acceptance were attributed to eudaimonia, since they reflect the psychological well-being and social well-being categories of the MHC-SF, respectively. Self-acceptance was associated with concepts as self-love, being proud of oneself and being confident in making the right decisions. Social acceptance implied being respected by other people, often with regard to the workplace, as being credited for one's work and appreciated for one's achievements. Apparently, having the feeling to be acknowledged as a valuable part of society helps to flourish. Lastly, openness and confidence emerged as well as a result from inductive coding. Flourishing people seem to be open towards new situations and fellow human beings. Additionally, they are self-confident, in that they trust in themselves and are satisfied with themselves.

2. Most frequently named hedonic codes

2. 1. Positive affect

Positive affect was the most frequently mentioned code. Sometimes, this code was named alone, when participants connected it to the state of flourishing. Then, positive emotions as feeling happy, content and joyful were mentioned. Other times, and in most cases, positive affect was the result of another hedonic or eudaimonic code, as for example when participants were talking about being successful at work, engaging in their hobbies or spending time with people close to them. Strikingly, positive affect was mentioned twice as often in response to the first question compared to answers to the second question (32 times compared to 16 times).

2.2. Social Interaction

Even though this code does only regard interaction with people one does not have a deep relationship with, it was mentioned the second most. This was mostly the case in work-related situations, "*[...] good interactions with my students make me happy.*" (Pt. 18, l. 1), but also when meeting random people. Here again, it appeared that almost every participant named social interaction with the result of having positive affect.

2.3. Positive Attitude

Positive attitude was principally used to describe another flourishing person and was named the third most in the hedonic category. This person was ascribed attributes as optimism, positive energy and aura, enthusiasm and having a positive outlook on most things.

3. Most frequently named eudaimonic codes

3.1. Meaningful Relationships

Meaningful relationships was the eudaimonic code that was mentioned most frequently. Almost all participants (n = 28) wrote about close relationships with their friends and family, especially when answering the first question. Notably, when talking about their relationships, participants often highlighted in the same sentence, how positive it makes them feel. Emotions that were regularly named were feeling safe, feeling loved and feeling supported: *"I'm really happy that I have a good relationship with my husband and children, which makes me feel accepted and loved."* (Pt. 18, ll. 13-14).

3.2. Well-being of others

The second eudaimonic code belongs to the social well-being category as well. Principally, participants named this code with regard to their family and friends. In other cases, this code was similar to the code engagement/social contribution, since they often occurred together or one lead to the other, as for example this quote shows: *"I am the manager of an optic and I feel great when I help an elderly person who is not able to see properly finding the right glasses. Then, the person is better able to cope with daily life due to my help."* (Pt. 16, l. 1-3).

3.3. Self-realization/Realizing the best in oneself and Self-development

The next eudaimonic codes belong to the psychological well-being dimension. In contrast to self-development, self-realization seemed to reflect a state that is already achieved and lets the person feel fulfilled. This code was (19 out of 32 times) coded as an answer to the second question most of the time, in which a flourishing person was described. Mostly, it was not described in detail what the person exactly does to reach this state, rather that they found their place and purpose in life. *"These people seem to have found their purpose. They seem to get carried away and are absolutely happy when engaging in this."* (Pt. 25, l. 4-5).

On the other hand, self-development was mentioned more frequently in answers to the first question (18 out of 27 times). Here, it appeared that participants are eager to improve, are inspired by other people and want to learn from them.

Overall Conclusion

The results show that the first hypothesis of hedonia and eudaimonia being necessary for

flourishing can be accepted since more than 80% of participants referred to both hedonic and eudaimonic codes. Only seven of the 35 participants named more hedonic than eudaimonic concepts. Of these seven, four mentioned only hedonic codes, however three of them only with regard to the second question, and one participant did not talk about eudaimonic activities with regard to the first question. There were three participants who mentioned only eudaimonic codes. Interestingly, this involved only answers to the second question, when they wrote about another person. However, no participant mentioned only one concept with regard to both questions.

The second hypothesis, that participants have a different perception about what eudaimonia means compared to literature, can also be accepted. Ancient characteristics such as wisdom, courage and generosity, determined by Aristotle, do not seem to be of importance when flourishing. Only virtue was mentioned in some texts. Thus, perceptions of participants regarding these aspects of eudaimonia differ compared to literature. On the other hand, the codes meaningful relationships, well-being of others, self-realization and self-development were mentioned the most frequently. These terms were as well proposed by Keyes (2002) and Huta (2013). Accordingly, eudaimonic flourishing seems to be constituted by concepts mentioned in more recent literature.

Discussion

The present study was one of the first to explore the concept of flourishing qualitatively, focusing on the two categories that constitute flourishing: Hedonia and eudaimonia. The findings indicate that both categories are present when people describe flourishing. Additionally, a mixed type, where a person lives up to both hedonic and eudaimonic features, appears to be most common, since more than 80% of the texts displayed aspects of both hedonia and eudaimonia. Investigations regarding the second research question, if the definition of eudaimonia derived from ancient times is still valid nowadays, showed that the perception of eudaimonia has changed. In the following, the main findings will be further explored and evaluated.

First research question

The majority of participants mentioned both hedonic and eudaimonic elements in the texts about their own flourishing and the flourishing of another person. However, four participants mentioned only aspects of hedonia when describing their own flourishing. Accordingly, the results do not rule out that flourishing is possible with the presence of only one concept. This note is especially important when regarding the small sample size. In a larger sample, the number of participants mentioning only hedonic or eudaimonic elements would probably rise. This finding is in accord with the results of Delle Fave et al. (2010), who indicated that hedonic happiness can occur without meaningfulness, at least with regard to free time activities.

Nevertheless, a possible explanation for the finding that mostly both hedonic and eudaimonic elements were present in the texts, is that hedonic positive affect, as feeling happy, was often described as a result of the presence of eudaimonic concept in one's life, such as having meaningful relationships or developing oneself. This is in line with research by Ryan et al. (2008) who came to the conclusion that hedonic elements as positive affect and pleasure are not only correlating with eudaimonic behavior but are the outcome of living well, which is one main aspect of eudaimonia. In addition, they found that living in a eudaimonic way leads to more hedonic happiness. Thus, the assumption that hedonic affect seems to arise from eudaimonic behavior is substantiated by Ryan et al.'s findings (2008).

However, contradictory findings of other studies indicate that it might be critical to draw the conclusion of hedonia being a result of eudaimonia. For example, Joshanloo (2018b) showed that the concepts are not correlated. This discrepancy in results can be attributed to the fact that Joshanloo's study was quantitative with a large sample. In addition, different items to assess eudaimonia were used. Thus, different insights from different points of view were gained, showing that more research is needed to find more unambiguous results. In addition, the findings of the current study are contrary to Kashdan et al.'s (2008) proposal of hedonic well-being being an antecedent of eudaimonia. Kashdan et al. (2008) argued that hedonic well-being helps people to engage more in eudaimonic activities. To explain, they cited Lyubomirsky, King, and Diener (2005) who promote the notion that people who experience high positive affect are more successful in their jobs and have more satisfying relationships. Relating to this research, the majority of the texts only provided evidence for positive affect being a result of eudaimonic activities. Nevertheless, as the discrepancy to Joshanloo's result (2018b) already showed, the methodological nature of this study makes it difficult to draw inferences about the relationship between the concepts.

Second research question

With respect to the second research question, it was found that the definition of eudaimonia derived from ancient terms is not valid in the 21st century. It can thus be suggested that Aristotle's perception of an eudaimonic person acting wise, generous and courageous is not what makes people flourish at present. Still, statements relating to virtue were made in some texts, such as "And they do not lie. They are responsible for their deeds. They are not jealous." (Pt. 29, l. 4). Therefore, it seems possible that participants did not refer to characteristics as wisdom, generosity and courage individually but encapsulated them in the term virtue. However, even though virtue was mentioned more often than the other terms as proposed by Aristotle, it does not belong to the most frequently mentioned codes in this study. This finding can be explained by the fact that perceptions on what constitutes a good life might have changed throughout the past 2500 years, and even though characteristics as being virtuous might be aspirational, people realized that there are other qualities that lead to a high well-being. This proposal is in accordance with the finding that the most frequently mentioned eudaimonic codes in this study were meaningful relationships, well-being of others and self-realization. In addition, these results are consistent with those of Delle Fave et al. (2010) who proved that well-being arises primarily from meaningful relationships. Thus, nowadays, the focus lies more on interpersonal relationships and contributing to the well-being of other people and only then personal growth as in self-realization and self-development are substantial. In addition, it does not seem to be the case that certain characteristics are necessary for flourishing, but rather the way people interact with their social environment.

Investigating this research question also led to the finding that eudaimonic elements were much more prominent than hedonic elements. Accordingly, the claim of Sheldon (2016) and Thin (2016) of eudaimonia being less important due to an unclear definition, can be overruled. Their arguments were based on the hypothesis that a versatile definition decreases the relevance of a term, however insights into lay people's perception showed which aspects of eudaimonia are most important to them, and additionally, proved the importance of eudaimonic elements in one's life.

Surprising findings

An unanticipated finding was that answers to the second question, in which another flourishing person was described, contained a considerably higher number of eudaimonic

codes especially with regard to the code self-realization. This fact conveys the impression that when describing another person who is flourishing, many participants describe how the "perfectly" flourishing person ought to be. It seems that participants had the feeling that they themselves did not reach this state yet or would not reach it at all, since the described person was already self-realized, was described as being at peace with themselves and was fulfilled due to having found their purpose in life. Furthermore, participants mostly wrote about a person they did not know and examples such as Jesus Christ or monks were named. This amplifies the impression that people perceive flourishing as being a state that is difficult to attain or that it is a state reserved for certain individuals that have certain characteristics inherent.

Moreover, two participants described flourishing as a state that is unrealistic and not desirable. Their explanation was that a flourishing person would not be able to deal with real life, since flourishing people do not experience negative emotions, which is not normal (Pt. 13) and that too much positivity and flourishing would lead to depression eventually (Pt. 19). Thus, surprisingly, these participants perceived flourishing as being something negative, even though they themselves were flourishing and seemed to be happy with their own life, as indicated by their answers to the first question.

Accordingly, there seems to be a discrepancy between how participants see themselves and how they expect a flourishing person to be. Even though their scores on the MHC-SF showed that they were flourishing, they themselves did not seem to realize this. Conversely, the texts about themselves showed that flourishing can be as simple as maintaining close relationships, caring about other people, contributing to their well-being and enjoying positive emotions that come along with this. In fact, the description of themselves showed that the state of self-realization is not necessary for flourishing. Due to the fact that self-development, as in trying to improve and educate oneself, was mentioned more often when people described themselves, this concept appears to be sufficient for flourishing, even if this implies that one might not be perfect ideal. Nevertheless, since the approach of this study is novel in that flourishing was examined from a qualitative point of view and more importantly, by asking participants to write about another person, there is no literature to date which could support or reject this finding.

Strengths, Limitations and Future Research

The strengths of the present study include the approach of categorizing participants quantitatively first, in order to make sure that only data of flourishing participants was used, resulting in a sample of 35 participants that were diverse in age and gender. In addition, special attention was paid to formulating the open-ended questions broadly, in order to get a deep insight and not giving cues in what could be expected from the participants. In this way, participants themselves came up with topics that are most important for them, without being influenced by expectations what the researchers would want to read. Further, the coding process was conducted in an extensive way, since both deductive and inductive coding was applied. Many codes have been established, making it possible to code every text intensely.

Still, further research should take into account the limitations of this study when interpreting the findings. Firstly, the texts were coded by only one researcher. This could lead to several implications. First of all, an inter-rater reliability cannot be ensured. Accompanying this, saturation could not be reached since new codes or ideas emerged every time. Still, intra-rater reliability was established, as the texts were coded several times on several different days and the coding scheme was revised continuously. Lastly, due to the fact that the initial coding was carried out deductively, the development of further codes could have been biased, considering that this approach to coding might lead to finding more evidence of the theory that is supportive rather than rejecting (Hsieh & Shannon, 2005). However, due to the fact that one aim of this study was to examine existing definitions of eudaimonia, this threat to the coding process had to be accepted.

Secondly, it is important to bear in mind that definitions and codes were established on the basis of a great variety of frameworks. However, participants were selected on the basis of Keyes' MHC-SF (2002). In addition, even though attempts were made to formulate the open-ended questions broadly, they were still developed on grounds of Keyes' (2002) framework. Thus, perhaps not the full range of flourishing was captured, due to the fact that this procedure already narrowed down the options about what participants would write. For example, the fact that the participants read the items of the MHC-SF before writing about flourishing, could have biased their perception about flourishing, since the items of the MHC-SF regard both hedonic and eudaimonic items. Accordingly, the result of hedonic and eudaimonic elements being present in almost every text might have been predictable. On the other hand, texts of some participants in which they declared flourishing as being undesirable indicates that they perceive flourishing as being something different than proposed in Keyes'

MHC-SF (2002). Thus, the appropriateness of using only this measurement to determine flourishing is questionable.

Further research is needed to replicate the qualitative approach of the current study with larger samples, in order to show whether the differences between how people describe themselves and how they describe another person actually exist. Besides, additional insights into what determines whether a person predominantly names hedonic, eudaimonic or elements of both can be gained in this way. These studies should ideally analyze narratives of flourishing people over longer periods of time or at several points of time on a shorter time span. Then, it can be ensured that the results of the present study were not limited to expectancies of the researcher. Additionally, using a different measurement for determining if a participant is flourishing and basing the open-ended questions on a different theoretical framework would verify whether the participants were influenced by the measurement and the formulation of the questions.

Implications

For practice, as in therapy where positive psychology aspects are incorporated, this has several implications. Firstly, as the greater number of people seems to flourish with both elements of eudaimonia and hedonia being present, but some individuals appear to flourish when only one concept is present, practice should aim at determining the way how a person is flourishing before applying interventions. However, it can be kept in mind that in general, well-being can be enhanced when raising awareness about the importance of relationships with close people, since this seems to be a condition to be able to flourish. Moreover, highlighting that contributing to the well-being of close people, or contributing to society by means of for example voluntary work or other altruistic behavior is a relatively simple way to increase the chance of flourishing. In addition, eudaimonic behavior that is dedicated to the well-being of others is indeed aspirational, however it is also important to be able to enjoy activities that aim at increasing personal joy, as for example hobbies. The combination of these behaviors is likely to help increase mental well-being and pave the way to flourishing.

Secondly, the knowledge gained in this study should be used in order to create interventions that show people that flourishing is not impossible to reach and that certain behavior, as mentioned above, might be sufficient. In addition, it should be pointed out that there is indeed a state of self-realization, however everyone can try to reach this state, by focusing on their own personal goals, realizing what is important to them and becoming aware of their own strengths. Even if this state is not reached, the journey of achieving self-

realization, self-development, might be sufficient in order to flourish. Thus, having the aspiration to grow and improve can help people to flourish. Emphasizing this discovery should prevent people to feel demotivated to increase their flourishing.

In general, positive psychology should refrain from investigating flourishing only quantitatively so that the contact to real-world experiences is not lost. Accordingly, it should be aimed at changing flourishing from a central theoretical topic of positive psychology to a state whose applicability is continuously checked in reality.

Conclusion

This study provided important insights into the nature of flourishing. The unique approach of letting participants write about their own flourishing and the flourishing of another person showed that the synergy of hedonia and eudaimonia is mostly present when flourishing, however, some participants mentioned only hedonia. The overall conclusion therefore is that people flourish in individual ways, but that the importance of eudaimonic concepts for most people should be acknowledged. Secondly, the current data indicate the shift of concepts that describe eudaimonia, from ancient features a eudaimonic person has to possess to the emphasis on being able to maintain close relationships. Thirdly, there exists a discrepancy between how people view themselves and how they perceive another person who is flourishing, creating the impression that flourishing might be a state that cannot be easily achieved. These findings show that larger qualitative studies, which examine narratives of non-flourishing people and of flourishing people over time, are needed. In addition, practice can use the insights in order to create interventions that show people that flourishing can be achieved by anyone.

References

Delle Fave, A., Brdar, I., Freire, T., Vella-Brodrick, D., & Wissing, M. P. (2011). The eudaimonic and hedonic components of happiness: Qualitative and quantitative findings. *Social Indicators Research*, *100*(2), 185-207. DOI: 10.1007/s11205-010-9632-5

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, *97*(2), 143-156. https://doi.org/10.1007/s11205-009-9493-y

Glaser, B. G., & Strauss, A. L. (2017). *Discovery of grounded theory: Strategies for qualitative research*. Routledge.

Hone, L. C., Jarden, A., Schofield, G. M., & Duncan, S. (2014). Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing. *International Journal of Wellbeing*, *4*(1). DOI: 10.5502/ijw.v4i1.4

Huppert, F. A., & So, T. (2009, July). What percentage of people in Europe are flourishing and what characterises them. In *IX ISQOLS Conference* (pp. 1-7). Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.550.8290&rep=rep1&type=pdf

Huppert, F. A., & So, T. T. (2013). Flourishing across Europe: Application of a new conceptual framework for defining well-being. Social indicators research, 110(3), 837-861. DOI 10.1007/s11205-011-9966-7

Huta, V., & Ryan, R. M. (2009). Pursuing pleasure or virtue: The differential and overlapping well-being benefits of hedonic and eudaimonic motives. *Journal of Happiness Studies*, *11*(6), 735-762. https://doi.org/10.1007/s10902-009-9171-4

Huta, V. (2013). Pursuing eudaimonia versus hedonia: Distinctions, similarities, and relationships. In A. Waterman (Ed.), The best within us: Positive psychology perspectives on eudaimonic functioning (chapter 7, pp. 139-158). APA Books.

Huta, V., & Waterman, A. S. (2014). Eudaimonia and its distinction from hedonia: Developing a classification and terminology for understanding conceptual and operational definitions. *Journal of Happiness Studies*, *15*(6), 1425-1456. DOI 10.1007/s10902-013-9485-0

Huta, V. (2018). Eudaimonia vs Hedonia: What is the difference? And is it real? Retrieved

from: https://www.researchgate.net/profile/Veronika_Huta/publication/328315213_Eu
daimonia_versus_Hedonia_What_Is_the_Difference_And_Is_It_Real/links/5bc5fc97a
6fdcc03c7891acc/Eudaimonia-versus-Hedonia-What-Is-the-Difference-And-Is-It-
Real.pdf?origin=publication_detail

Joshanloo, M. (2018a). Investigating the Relationships Between Subjective Well-Being and
Psychological Well-Being Over Two Decades. Emotion. Advance online publication.
http://dx.doi.org/10.1037/emo0000414

Joshanloo, M. (2018b). Optimal human functioning around the world: A new index of
eudaimonic well-being in 166 nations. *British Journal of Psychology*, *109*(4), 637-655.
https://doi.org/10.1111/bjop.12316

Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs
of distinguishing between hedonics and eudaimonia. *The Journal of Positive
Psychology*, *3*(4), 219-233. DOI. https://doi.org/10.1080/17439760802303044

Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life.
Journal of health and social behavior, 207-222. DOI: 10.2307/3090197

Keyes, C. L., & Simoes, E. J. (2012). To flourish or not: Positive mental health and all-cause
mortality. *American journal of public health*, *102*(11), 2164-2172. DOI:
10.2105/AJPH.2012.300918

Lamers, S. M., Westerhof, G. J., Bohlmeijer, E. T., Ten Klooster, P. M., & Keyes, C. L.
(2010). Evaluating the psychometric properties of the mental health Continuum-Short
Form (MHC-SF). *Journal of Clinical Psychology*, 67(1), 99-110.
doi:10.1002/jclp.2074

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect:
Does happiness lead to success?. *Psychological bulletin*, *131*(6), 803. Doi:
10.1037/0033-2909.131.6.803

Marshall, M. N. (1996). Sampling for qualitative research. *Family practice*, *13*(6), 522-526.
https://doi.org/10.1093/fampra/13.6.522

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research
on hedonic and eudaimonic well-being. *Annual review of psychology*, *52*(1), 141-166.
DOI:10.1146/annurev.psych.52.1.141

Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory
perspective on eudaimonia. *Journal of happiness studies*, *9*(1), 139-170. DOI
10.1007/s10902-006-9023-4

Seligman, M. E. P. (2011). *Flourish – A new understanding of happiness and well-being –*

and how to achieve them. London: Nicholas Brealey Publishing

Schotanus-Dijkstra, M., Pieterse, M. E., Drossaert, C. H., Westerhof, G. J., De Graaf, R., Ten Have, M., ... & Bohlmeijer, E. T. (2016). What factors are associated with flourishing? Results from a large representative national sample. *Journal of happiness studies*, *17*(4), 1351-1370. DOI 10.1007/s10902-015-9647-3

Schotanus-Dijkstra, M., Keyes, C. L., de Graaf, R., & ten Have, M. (2019). Recovery from mood and anxiety disorders: The influence of positive mental health. *Journal of affective disorders*, *252*, 107-113.https://doi.org/10.1016/j.jad.2019.04.051

Sheldon, K. M. (2016). Putting Eudaimonia in Its Place. In J.Vittersø (Ed.), *Handbook of eudaimonic well-being* (pp. 531-541). Cham: Springer International Publishing.

Thin, N. (2016). Social Planning Without Bentham or Aristotle: Towards Dignified and Socially Engaged Well-being. In J.Vittersø (Ed.), *Handbook of eudaimonic well-being* (pp. 543-561). Cham: Springer International Publishing.

Waterman, A. S. (1990). The relevance of Aristotle's conception of eudaimonia for the psychological study of happiness. *Theoretical & Philosophical Psychology, 10*(1), 39-44. http://dx.doi.org/10.1037/h0091489

Appendix

Information letter for participants and informed consent

Information for participants of the study on flourishing

Are you interested in happiness and well-being in everyday life? Do you often wonder what makes you happy or how and when your neighbors and friends do so well in life? If yes, then your interests align with our research being conducted at the University of Twente on flourishing.

Your participation in this study is voluntary. Beforehand, it is important that you read some more information about this research. If you still have questions, you can contact Dr. Marijke Schotanus-Dijkstra. Contact details can be found at the bottom of this information letter.

Purpose of the research

The researchers from the University of Twente aim to gain new insights into the concept of flourishing among European citizens. A person is flourishing when they feel happy and are able to function well in everyday life. The research aims to reveal whether there is an association between flourishing and other concepts such as personality, and when and how people are flourishing.

Who can participate in the study?

All people above the age of 18 living in Europe and speaking English, German, or Dutch may participate in the study. Participants require an internet connection and an email address, due to the online nature of the research.

The study

Participants will be asked to complete different questionnaires on three separate occasions at 1-week intervals. The first questionnaire consists of closed questions and will take approximately 15 minutes to complete. The second questionnaire contains two open questions where you are required to provide written answers, which should be around one half of a DIN A4 page per question. This will take approximately 15-30 minutes to complete. The last questionnaire will consist of closed questions and will take approximately 5 minutes to complete. In total, the time expenditure over the three-week period will be approximately 35-50 minutes.

How to participate in the research?

Registration and declaration of consent

You will be invited to participate in this research by a member of the research group. After signing up, you will receive an email with an invitation to complete the first questionnaire in April. Before you can start, you will be asked to give informed consent. Your data will be collected entirely online and treated confidentially. Therefore, we use your name and email address only for sending you the three personalized surveys. All materials will be identified by an assigned participant number, not by your name. During the research period, your data will be treated with great confidentiality and only be accessible by the main researcher Dr. Marijke Schotanus-Dijkstra. Your individual privacy will be maintained in all published and written data resulting from this study.

Participation in this study is voluntary. If you decide to participate, you will be asked to agree to the informed consent. After that, you are still free to withdraw at any time and without giving a reason for your withdrawal.

Questionnaires

The data collection will take place over three weeks. The invitation to these questionnaires will be sent to the email address which you provided upon signing up to the study. The questionnaires are completed online and can be filled in from a mobile device or computer.

Advantages and disadvantages of participation

The advantage of participating in this study is your contribution to the scientific knowledge on flourishing. Any knowledge obtained from the study has the potential to contribute to the understanding of flourishing, which could be elaborated on in future research and applied in finding ways to enhance people's flourishing. Furthermore, participating in the study could provide you with interesting insights into your own well-being. Besides the time invested, there are no disadvantages for participants.

Ethics

The study has been approved by the Ethics Committee of the University of Twente and is thus compliant with internationally recognised guidelines on ethical research.

Contact details

Dr. Marijke Schotanus-Dijkstra

Onderzoeker Universiteit Twente

m.schotanus@utwente.nl

+31 53 4893491 (Thursdays, Fridays)

Informed Consent

I hereby declare that I have been informed in a manner which is clear to me about the nature and method of the research. My questions have been answered to my satisfaction. I agree of my own free will to participate in this research. I reserve the right to withdraw from the questionnaire at any time. If my research results are to be used in scientific publications or made public in any other manner, then they will be made completely anonymous. My personal data will not be disclosed to third parties without my express permission. If I request further information about the research, now or in the future, I may contact Dr. Marijke Schotanus-Dijkstra, m.schotanus@utwente.nl. By ticking the field "yes" below I indicate that I understand my rights and agree to participate in this study.