



# **The relationship between extraversion, experiential acceptance and mental wellbeing in the Twente region in the Netherlands**



**Bachelor Thesis  
Psychology**

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## Abstract

**Orientation:** One of the main interests of positive psychology is finding the recipe for people to be happy. Previous research in this field suggests a significant relationship between extraversion and mental wellbeing. The details of this association are merely partially explained so far.

**Research purpose:** Aim of the study was to examine whether experiential acceptance mediates the effect of extraversion on mental wellbeing.

**Motivation for the study:** Exploring why extraverts seem to achieve greater levels of mental wellbeing than introverts, requires further research. Many potential mediators have been studied so far, such as social abilities, emotion regulation, or demographic factors. The evaluation of emotions seems to play a crucial role, as well in extravert behaviour, as in experiential acceptance and as in mental wellbeing. The present study examines a research model involving all three constructs.

**Research design, -approach and method:** An exploratory cross-sectional online, electronic-based survey design was used to investigate the relationship between the variables extraversion, experiential acceptance and mental wellbeing. The constructs were measured with the BFI, the AAQ-II, and the MHC-SF. A convenience sample of 117 participants was recruited in the Twente region in Germany.

**Main findings:** A significant indirect effect of extraversion on mental wellbeing via experiential acceptance was found, although the total effect of extraversion on wellbeing was not significant.

**Practical implication:** Experiential acceptance, as it is seemingly used naturally by extraverts, can implicate styles and characteristics of accepting emotions so that more introvert persons can learn from it and adapt these styles to improve their mental wellbeing.

**Contributions/value-add:** The current exploratory research helps discovering the ingredients of mental wellbeing, one of the main goals of positive psychology and mankind in general. Discovering the processes and skills that extraverts seem to apply naturally, contributes to a coherent understanding of the characteristics and processes that underlie a healthy and fulfilled living.

**Keywords:** Extraversion, Experiential acceptance, Mental wellbeing, Mediation

### **Abstract (NL)**

**Oriëntatie:** Een van de overkoepelende doelen van de positieve psychologie is kennis te vergaren over welke aspecten en factoren psychische gezondheid (mental wellbeing) bevorderen. Eerder onderzoek op dit gebied stelt voor dat er een sterke correlatie bestaat tussen extraversie en mentaal welbevinden. Waarom deze relatie bestaat moet nog verder onderzocht worden. In deze studie wordt gekeken, of experiëntiële acceptatie een mogelijke mediator is.

**Doel:** Het doel van deze studie is het om te onderzoeken of experiëntiële acceptatie invloed heeft op het effect van extraversie op mentaal welbevinden, en of er sprake is van mediatie.

**Motivatie voor onderzoek:** Er is nog veel onderzoek nodig om de eerder gevonden samenhang van extraversie en mentaal welbevinden te verklaren. Potentiële mediators zoals sociale vaardigheden, emotie regulatiemechanismen of demografische factoren. Een centrale rol blijkt de evaluatie van emoties te spelen, zowel bij extraversie, als ook bij experiëntiële acceptatie, als ook van mentaal welbevinden.

**Onderzoeksopzet, -design en -methode:** Het onderzoeksdesign was exploratief, cross-sectioneel, en elektronisch-gebaseerd. Een convenience sample van 117 participanten in de Twente regio in Nederland werd gebruikt om data te verzamelen.

**Resultaten:** De drie onderzochte constructen extraversie, acceptatie en mentaal welbevinden correleerden allemaal positief met elkaar, echter was de correlatie tussen extraversie en mentaal welbevinden niet significant. Wel werd in de actuele studie een significant indirect gevonden van extraversie op mentaal welbevinden via experiëntiële acceptatie.

**Praktische implicaties:** De kennis dat mentaal welbevinden bij extraverte mensen beïnvloed wordt door hun manier van acceptatie en evaluatie van emoties, kan voor mensen die dat minder sterk doen nuttig zijn om hiervan te leren. In de ACT wordt al training aangeboden om de stijl van omgang met emoties te veranderen.

**Contributie van onderzoek:** De exploratieve studie levert kennis op over de ingrediënten van mentaal welbevinden, wat een van de hoofdoelen is in de positieve psychologie en van de mensheid in het algemeen. Te weten, welke processen en vaardigheden extraverte mensen blijkbaar op natuurlijke manier gebruiken, is van toegevoegde waarde voor het begrijpen van onderliggende factoren van mentaal welbevinden.

## Introduction

Up until the year 2000 the field of psychological research was mainly focused on understanding how mental illness develops in humans and on how these can be treated. During the last twenty years, the scope of psychological science has amplified by studying the factors that promote happiness and wellbeing in life, in addition to already existing studies of psychopathology (Seligman & Csikszentimihalyi, 2000). What is it that makes people flourish and feel well? A lot of research has been conducted to answer this question. One factor that seems to play an important role is personality (De Neve & Cooper, 1998; Tkach, & Lyubomirsky, 2006). Human nature and strategies for dealing with life events seem to be critical for being happy (Tkach, & Lyubomirsky, 2006). Particularly the personality traits extraversion and neuroticism seem to determine how a person deals with adverse experiences or emotions and therefore improves or diminishes the premises for being happy. (Keyes, Kendler, Myers, & Martin, 2015; González Gutiérrez, Jiménez, Garrosa Hernández, & Penacoba Puente, 2005; Hayes & Joseph, 2003; Tkach, & Lyubomirsky, 2006).

The concept of personality has been a main subject to psychological research. The main developed theory is the model of the *Big Five Personality Traits*. These traits represent dimensions in human nature, each divided into facets and each identified by certain characteristics (McCrae & John, 1992). Traits can be considered as tendencies how someone reacts to and deals with his environment (De Neve & Cooper, 1998). One personality trait of the Big Five is extraversion. In the present study, the role of extraversion for mental wellbeing is being explored. As Hoekstra, Fruyt and Ormel (2002) describe the trait, extraverts are sociable persons who like to spend their time with other people, are talkative, active and like excitement. They are generally energetic, optimistic and predominantly good-humored. Extravert humans are assertive and alert to their direct environment (Hoekstra et al., 2002). Several studies established an effect of extraversion on wellbeing (Keyes, Kendler, Myers, & Martin, 2015; González Gutiérrez, Jiménez, Garrosa Hernández, & Penacoba Puente, 2005; Hayes & Joseph, 2003; Tkach, & Lyubomirsky, 2006). But what exactly is it that extraverts do or omit doing that seemingly makes it easier for them to flourish? The attempt to give more detailed explanations for the finding that extraversion promotes well-being, offers innumerable directions to go (Cabello, & Fernandez-Berrocal, 2015). Lee, Dean, & Jung (2008) for example tested whether it is social connectedness that explains the association of extraversion and subjective well-being. In their study, they found social connectedness functioning as mediator. Extraverts tend to evaluate their social contacts more positive, therefore experience more positive socially rewarding moments which leads to a higher level of subjective well-being

(Lee, Dean, & Jung, 2008). Cabello, & Fernandez-Berrocal (2015) found in another study that higher emotion regulation ability is a mediator of the positive effect of extraversion on mental wellbeing. Evaluating events and emotions positively, seems to be a strategy that contributes to wellbeing (Cabello, & Fernandez-Berrocal, 2015). In the literature, this evaluation strategy is considered a crucial element of the construct of psychological flexibility (Bond et al., 2011), and particularly of experiential acceptance (Hayes, 1994).

Several studies suggest that experiential acceptance, or psychological flexibility, leads to greater mental wellbeing (Hayes, 1994; Kashdan & Rottenberg, 2010). This flexibility includes the ability to adapt to changing situational demands, to reform mental resources, to alter perspectives, and to be able to balance challenging emotions, needs and desires (Kashdan & Rottenberg, 2010). Experiential acceptance describes the willingness to stay in contact with your positive as well as negative emotional states. A person that is flexible, tolerates changing circumstances and accepts experiences that occur with these changes (Block-Lerner, Salters-Pedneault, & Tull, 2005). In contrast, the absence of these skills is found to be related to various forms of psychopathology (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Non-acceptance of experiences, or experiential avoidance, involves the suppression of feelings and thoughts. The suppression of thoughts again triggers a paradoxical rebound effect by thinking of the object even more, which creates negative experiences (Wegner, Schneider, Carter, & White, 1987). The acceptance of experiences, while they come along, prevents this rebound effect and facilitates experiencing more positive feelings (Hayes, in press). The contemporary approach to experiential acceptance is pursued in the Acceptance and Commitment Therapy (ACT). In this therapeutic approach clients learn to tolerate and accept negative emotions. This decreases negative affect in the long term (Cordova and Kohlenberg, 1994). A lot of research over the past 20 years has shown that, for example mindfulness, a strategy in ACT, promotes wellbeing (Brown & Ryan, 2003; Brown, Ryan & Creswell, 2007). Mindfulness, as Bishop et al. (2004) describe it, is a strategy that increases awareness and provides skills to respond to mental processes that cause distress (Bishop et al., 2004).

The third construct being explored in this research is mental wellbeing. The aim is to contribute some knowledge to existing findings about what promotes mental wellbeing, happiness, and what makes humans flourish. Westerhof and Keyes (2010) explain that the concept of mental wellbeing comprises three facets, emotional, psychological and social wellbeing. Emotional wellbeing includes positive feelings of happiness and life satisfaction. Psychological wellbeing is the positive functioning and self-realization of an individual, and the societal function and contribution of a person represents the social wellbeing (Westerhof &

Keyes, 2010). With regards to these key aspects of this definition of mental wellbeing, the question arises how these qualities in life, namely positive feelings, positive functioning and societal contribution of an individual, can be achieved by any person (Tkach, & Lyubomirsky, 2006). Lyubomirsky, Sheldon, & Schkade (2005) identified three categories that influence wellbeing: life circumstances and demographics, traits and dispositions, and intentional behaviours. Considering these three components in a person's life, being happy seems to be a combination of social and economic circumstances, inherent dispositions, and actions. Personality traits influence which strategies a person uses to manage emotional experiencing (strategies like experiential acceptance), and this influences the quality of experiences (mental wellbeing) (Tkach, & Lyubomirsky, 2006).

In the present study, we attempt to explore, if the strategy of experiential acceptance could possibly be one of the links and explain part of the positive relation between extraversion and mental wellbeing. This knowledge could represent a contribution to existing methods in psychotherapy, like the ACT (Acceptance and Commitment Therapy) in the sense of learning from extraverts' attitudes and behaviors. The more exact we know about strategies and skills that are necessary to achieve mental wellbeing, the more likely it becomes for humans to learn to be happy.

### **Present study**

The first question, that this study is to examine, to what extent extraversion, experiential acceptance (psychological flexibility) and mental wellbeing relate to each other. The second research question is to what extent experiential acceptance has an impact on the relationship between extraversion and mental wellbeing.

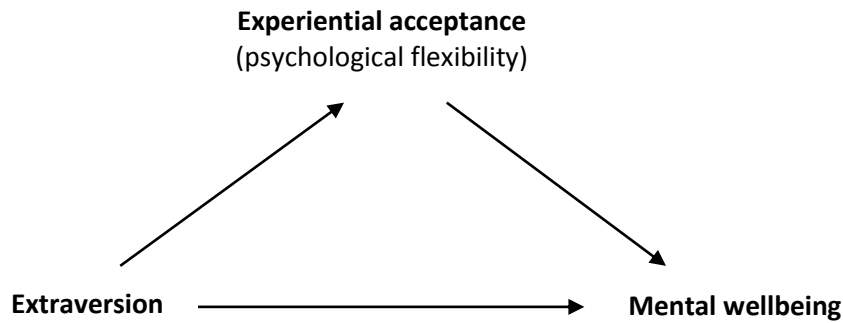
To explore the research model, as shown in Figure 1, and to answer the research questions the following hypotheses are generated:

H<sub>1a</sub>: Extraversion correlates significantly and positively with mental wellbeing.

H<sub>1b</sub>: Extraversion correlates significantly and positively with experiential acceptance.

H<sub>1c</sub>: Experiential acceptance correlates significantly and positively with mental wellbeing.

H<sub>2</sub>: Experiential acceptance significantly mediates the effect of extraversion on mental wellbeing.



*Figure 1.* Conceptual mediation model for the research

## Method

### Study Design

An exploratory cross-sectional online survey based research design was used to investigate the relationship between the variables extraversion, experiential acceptance and mental wellbeing (Shaughnessy, Zechmeister & Zechmeister, 2003).

### Participants

A convenience sample was drawn by administering the questionnaire battery online on the social media platform Facebook (<https://www.facebook.com>). Here, the research was briefly introduced with a request to fill it in. In total, 140 from the Twente region in the Netherlands filled in the series of questionnaires, of which 23 had to be removed of the sample because they did not fill in all items, leaving a total sample of 117 participants. As presented in Table 1, most of the participants were German (93.2%), female (65.8%), between 18 and 25 years (56.4%), single (44.4%), and had acquired higher secondary education as highest educational qualification (59.8%).

Table 1  
Characteristics of the participants (n = 117)

Item	Category	Frequency	%
<b>Gender</b>	Female	77	65.8
	Male	39	33.3
	Missing	1	0.9
<b>Age (years)</b>	18 to 25	66	56.4
	26 to 35	18	15.4
	36 to 45	19	16.2
	46 to 55	6	5.1
	56 to 65	2	1.7
	66 to 80	2	1.7
	Missing	4	3.4
<b>Nationality</b>	German	109	93.2
	Dutch	3	2.6
	Other	4	2.4
	Missing	1	0.9
<b>Highest educational qualification</b>	Secondary Education (e.g. Realschule, MAVO)	8	6.8
	Higher Secondary Education (e.g. Abitur, Fachhochschulreife, HAVO, VWO)	70	59.8
	Bachelor's Degree	20	17.1
	Master's Degree	17	14.5
	Doctorate Degree	1	0.9
	Missing	1	0.9
<b>Marital status</b>	Single	52	44.4
	With partner	46	39.3
	Married/registered partnership	18	15.4
	Divorced or widowed	-	-
	Missing	1	0.9

## Measures

A *self-developed biographic questionnaire* was used to assess age, gender, nationality, marital status, and the highest educational qualification (Appendix).

The extraversion subscale of the BFI-SF (John & Srivastava, 1999) was used to measure extraversion, a construct which is divided into the facets gregariousness (sociable), assertiveness (forceful), activity (energetic), excitement-seeking (adventurous), positive emotions (enthusiastic) and warmth (outgoing). The BFI-SF consists of 8 statements like e.g. 'I see myself as someone who is talkative', or 'I see myself as someone who generates a lot of enthusiasm', which the respondents could rate on a 5-point-Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). Total scores could range from 8 to 40. Higher scores on the BFI-SF indicate higher levels of extraversion. The Big Five Inventory is a widely acknowledged instrument to measure the five main dimensions of personality. In previous



studies, the BFI showed a reliability of Cronbach's alpha of .87 (John & Srivastava, 1999). The present study showed a Cronbach's alpha of .83.

The AAQ-II (Bond, Baer, Guenole, Waltz, Hayes, Carpenter, Orcutt, & Zettle, 2011) assesses to what extent the respondent tends to evaluate unwanted thoughts or feelings as positive rather than negative, accepts them, and does not try to escape from them. This construct can also be referred to as psychological flexibility (Bond et al., 2011). Example statements are 'I'm afraid of my feelings' or 'Emotions cause problems in my life'. Respondents were asked to mark, to what extent the 10 stated thoughts are true for them on a 7-point-Likert scale, ranging from 1 (*never true*) to 7 (*always true*). Total scores could range from 10 to 70. Higher scores indicated a higher level of experiential acceptance, therefore of psychological flexibility. In previous studies the AAQ-II had a mean Cronbach's alpha coefficient of .84, and is the most widely used instrument to measure experiential acceptance (Bond, et al., 2011). The present study showed a Cronbach's alpha of .84 as well.

The construct of mental wellbeing was measured by the MHC-SF (Keyes, 2009). It consists of 14 items which are divided into three dimensions of wellbeing. Three of the questions measure emotional well-being (e.g. 'During the past month, how often did you feel satisfied with life?'), 5 questions refer to social well-being (e.g. 'During the past month, how often did you feel that you had something important to contribute to society?'), and 6 questions measure psychological well-being (e.g. 'During the past month, how often did you feel that you liked most parts of your personality?'). Respondents were asked to indicate how often they experienced the stated feelings on a 6-point rating scale ranging from 0 (*never*) to 5 (*every day*). Total scores could range from 0 to 70, whereas higher scores indicated greater mental wellbeing. In previous studies this short version of the originally 40-item questionnaire showed a reliability of Cronbach's alpha  $>.80$  (Keyes, 2009). In the present study, the scale had a Cronbach's alpha of .88.

The complete questionnaire battery including all three scales can be found in the Appendix.

## **Procedure**

The Ethics Committee at the University of Twente approved this study. Participants were recruited by convenient sampling through the social media facebook.com platform and through personal contact. The online electronic questionnaire was administered in English, and

was online from 10<sup>th</sup> of March to 30<sup>th</sup> of April 2017. Once persons had clicked on the link posted on Facebook, they were redirected to the qualtrics.com platform. Respondents had to first complete the informed consent to start the survey. In the informed consent, the confidentiality and anonymity of the project was affirmed, as well as the information that participation was voluntary and could be abandoned at any time. A brief introduction to the subject then opened the survey.

### **Statistical analyses**

The gathered data was converted to an SPSS data set and further processed with SPSS24 (IBM Corp., 2016). First, descriptive statistics were used to determine normality (Skewness and Kurtosis -1 to 1) (Field, 2009). Cronbach's alphas were used to determine the construct reliability of the measuring scales ( $>.70$ ; Field, 2009). Thereafter Pearson correlation coefficients were calculated to examine the relationships between the three variables, cut-off point for statistical significance being set at  $p < .05$ .

To then explore whether experiential acceptance (psychological flexibility) mediates the effect of extraversion on mental wellbeing, a mediation analysis was conducted, using PROCESS (version 2.16.3) by Andrew Hayes (2013), applied within SPSS. A cross-product of coefficients approach, using bootstrapping procedures (Preacher and Hayes, 2004), was employed to examine if experiential acceptance (psychological flexibility), measured with the AAQ-II (Bond et al., 2011), mediated the relationship between extraversion, assessed with the BFI-SF (John & Srivastava, 1999) and mental wellbeing, measured with the MHC-SF (Keyes, 2009). Here, the cross-product of the coefficient for the relationship between extraversion and experiential acceptance (path a), and the coefficient for the relationship between experiential acceptance and mental wellbeing, while controlling for extraversion (path b), was calculated. The significance of the path  $a*b$  was determined using 5000 bootstrap samples for 95 % bias-corrected bootstrap confidence intervals (CI). The indirect effect was considered as being significant when the respective confidence interval did not include zero (Hayes, & Rockwood, 2016).

## **Results**

### **Descriptive Statistics**

Table 2 presents an overview of the descriptive statistics of the data. The results show that the data is normally distributed (Skewness and Kurtosis  $< 1$ ) and all three scales have acceptable levels of internal consistency (Cronbach's Alphas  $> 0.80$ ).

Table 2

*Descriptive Statistics, Cronbach's Alphas of the Measuring Scales and Pearson's correlations for extraversion, experiential acceptance and mental well-being*

Variable	n	Mean	SD	$\alpha$	Skewness	Kurtosis	Pearson Correlations	
							Extraversion	Experiential acceptance
Extraversion	117	3.37	.63	.83	-.29	-.56	-	-
Experiential acceptance	117	4.72	.97	.84	-.60	.56	<b>.22*</b>	-
Mental wellbeing	117	3.00	.83	.88	-.57	.46	.16	<b>.44*</b>

\* Correlation is significant at the .05 level

### Pearson Correlation

Given the normal distribution of the data, a Pearson correlational analysis was computed to determine the relationships between extraversion, experiential acceptance and mental wellbeing. The results are presented in Table 2.

The correlation between extraversion and mental wellbeing is not statistically significant ( $r = .16$ ,  $p = .09$ ). Hypothesis 1<sub>a</sub>, which stated that extraversion significantly positively correlates with mental wellbeing, is therefore rejected. The results show that two of the three tested relations are statistically significant. Extraversion significantly and positively correlates with experiential acceptance ( $r = .22$ ,  $p < .05$ ), and experiential acceptance significantly correlates positively with mental wellbeing ( $r = .44$ ,  $p < .05$ ). Therefore, hypotheses 1<sub>b</sub> and 1<sub>c</sub> are accepted, which stated that (1<sub>b</sub>) extraversion correlates significantly and positively with experiential acceptance (psychological flexibility), and (1<sub>c</sub>) that experiential acceptance significantly and positively correlates with mental wellbeing.

### Mediation Analysis

A mediation analysis was conducted using the PROCESS macro (Hayes, 2013) in SPSS 24 (IBM, 2017). The results are reported in Table 3. The tested model and the respective path coefficients are also shown in Figure 2.

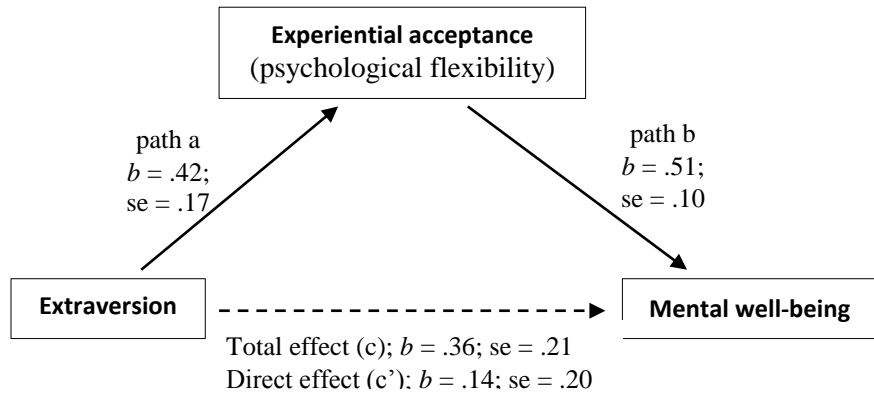


Figure 2. Mediation model. Total effect (path c) = direct effect (c') + indirect effect (a\*b). The indirect effect (a\*b) must be interpreted to examine if experiential acceptance significantly mediates the relationship between extraversion and mental wellbeing

The outcome of the mediation analysis, as shown in Table 3, exposes that the indirect or mediation effect size (a\*b) of experiential acceptance on mental wellbeing is significant [ $b = .21$ ; 95 % CI (.04; .47)], as the confidence interval does not include zero (Hayes, 2013). Due to this outcome, hypothesis 2 is accepted, which assumed that experiential acceptance mediates the effect of extraversion on mental wellbeing. The results represent a significant indirect effect of extraversion on mental wellbeing via experiential acceptance.

Table 3

Outcomes of mediation analysis using PROCESS macro (Hayes, 2013)

	Coefficient	SE	t	p
<b>Total effect (c)</b>				
(Constant)	32.37	5.81	5.58	.00*
Extraversion	.36	.21	1.69	.09
<b>Direct effect (c')</b>				
(Constant)	13.89	6.45	2.15	.03*
Experiential Acceptance	.51	.10	4.99	.00*
Extraversion	.14	.20	.73	.47
<b>Indirect effect (a*b)</b>				
Experiential acceptance	.21	.11		(.04; .49)*

Total, direct and indirect effect of the relationship between extraversion and mental wellbeing with experiential acceptance as potential mediator

SE standard error of coefficient, \*significance determined by 95 % bias-corrected bootstrap confidence intervals (CI)

## Discussion

The aim of the present study was to examine the relationships between extraversion, experiential acceptance (psychological flexibility), and mental wellbeing, and in particular, if experiential acceptance is a potential mediator of the positive relation between extraversion and mental wellbeing. The main finding in this study is that there is a significant indirect effect of extraversion on mental wellbeing via experiential acceptance.

The significant correlation between extraversion and mental wellbeing found in several previous studies (Keyes, Kendler, Myers, & Martin, 2015; González Gutiérrez, Jiménez, Garrosa Hernández, & Penacoba Puente, 2005; Hayes & Joseph, 2003; Tkach, & Lyubomirsky, 2006), could not be confirmed in the present study. The correlation found was positive, but statistically not significant. This could be due to the variety of scales being used in the previous studies, all measuring slightly different constructs of wellbeing. The scale used in the present study was the MHC-SF which measures emotional, psychological, and social wellbeing, but the terminology for this construct is often used interchangeably, like happiness, flourishing, subjective wellbeing, or satisfaction in life, which makes it difficult to directly compare (DeNeve & Cooper, 1998).

The correlation between extraversion and experiential acceptance, respectively psychological flexibility, was found positive and significant. This implies that extraverts are more psychologically flexible, and show a greater tendency and willingness to realize and accept their emotions than introverts do.

The assumption that there is a significant positive relation between experiential acceptance and mental wellbeing was confirmed in the present sample. This verifies the findings of previous studies (Hayes, 1994; Kashdan & Rottenberg, 2010; Marshall & Brockmann, 2016). These findings are widely accepted and integrated in Acceptance and Commitment Therapy.

The significant indirect effect of experiential acceptance on the relation between extraversion and mental wellbeing, that was found in the current study, indicates that extraverts expose psychological flexibility naturally, corresponding to their personality trait, which promotes greater mental wellbeing. It is not merely the fact of being extravert, but rather that extraverts seem to engage in mental health promoting activities and have a positive mindset towards their experiences. The evaluation of emotions plays a role in the construct of extraversion (De Neve & Cooper, 1998), as well as in experiential acceptance (Hayes, 1994).

Extraversion is a personality trait, which implicates a certain nature of dealing with the environment (De Neve & Cooper, 1998). Extraverts are described as generally energetic, optimistic and predominantly good-humored. They are assertive and alert to their direct environment (Hoekstra et al., 2002). Experiential acceptance or psychological flexibility represents an ability to adapt to changes in the environment and willingness to stay in contact with both positive and aversive emotions (Kashdan & Rottenberg, 2010). Basically, this means to take things as they come and therefore to experience more positive affect (Shallcross, Troy, Boland, & Mauss, 2010).

Overlapping aspects between extraversion and experiential acceptance could be the alertness of extraverts in various situations and their positive evaluation of their experiences, which shows in their distinctive characteristic of optimism and inherent positive emotionability (Mc Crae & John, 1992). These characteristics can also be found in definitions of experiential acceptance or psychological flexibility (Kashdan & Rottenberg, 2010). This staying in contact and embracing emotions requires a certain alertness for your emotions and experiences (Hayes, 1994). This again is a quality that lies in the nature of extraversion (Mc Crae & John, 1992). Theories of wellbeing assume a global tendency in a stable personality traits as extraversion, to experience life in a positive or negative manner (Diener, 1984).

It seems that experiential acceptance is a mechanism that explains one ingredient of mental wellbeing. The overlap of the two constructs of extraversion and experiential acceptance could be part of an explanation for why extraverts are found to be happier than less extraverts.

### **Practical implications**

Overall, the outcome of the current research implicates that introverts can learn from extraverts regarding strategies to accept and stay in contact with their emotions. Not all extraverts are happy and not all introverts aren't, but probably extraverts tend to naturally react to and evaluate experiences more positive than introverts (Tkach, & Lyubomirsky, 2006). A very basic implication could be that the extravert functions as a role model regarding dealing with the environment. One of the core ideas of experiential acceptance is to change perspectives and evaluate experiences different than one is used to (Kashdan & Rottenberg, 2010). This ability to change perspectives can be trained and is yet implemented in ACT (Cordova, 2001).

Due to the current study being explorative, the findings contribute to a better understanding of underlying processes of mental wellbeing. Scientific psychological research concerning the factors, strategies and circumstances that promote mental wellbeing are still far behind the scientific knowledge about the factors that lead to psychopathology (Seligman & Csikszentimihalyi, 2000). Therefore, any explorative research in that field is useful.

## **Limitations and future research**

To move away from theory and measuring scales, future research should concentrate on observing and examining how extraverts act in situations in which they are confronted with adverse stimuli. In contrast to merely asking them how they would deal with certain situations, observation protocols would be useful to find patterns of behavior. Behavior can be trained and changed in for example ACT (Cordova, 2001).

The lack of significance of the relation between extraversion and mental wellbeing in the present study could be explained by a couple of reasons. Firstly, the construct of extraversion is very complex and includes diverse facets, aspects and underlying processes (Barry, 2009). Based on the findings in the current study, it would be useful to explore extraversion in its facets. It would be particularly useful to further study the effects of the sociability facet of extraversion. Attempts to do so have yet been made by Lee et al. (2008), Emmons and Diener (1986), or Tkach, and Lyubomirsky (2006). Researchers have examined the sociability of extraverts which obviously accounts quite strongly for their mental wellbeing (Tkach, & Lyubomirsky, 2006; Barry, 2009). Secondly, the construct of mental wellbeing is also broad and complex (Ryff, 1995). Here, it would be of additional value to examine particularly the aspect of social wellbeing, because this overlaps with the socializing ability in extraverts. Thirdly, the construct of mental wellbeing is referred to with many different terms. Some studies refer to happiness, others to subjective wellbeing, again others discuss flourishing or life satisfaction. These differences in the terminology make it very difficult to compare these studies (deNeve & Cooper, 1998), and therefore to achieve similar results. Lastly, life circumstances, gender, age and demographics were not considered in the present study, although Lyubomirsky, Sheldon, and Schkade (2005) identified that mental wellbeing is influenced, amongst others, by these factors. In future research, the consideration of these facts would give more insight in how much these affect the outcomes.

Another aspect that limits the present study is the use of a convenience sample. Henrich, Heine and Norenzayan (2010) argue, that especially in the field of psychological research, study samples of the Western civilization, cannot be representative or generalized. In Europe and the United States, where most of research is conducted, people are educated and concerned with very different needs than people living in poorer regions of the world (Henrich, Heine and Norenzayan, 2010). The current study was conducted in the Twente region in the Netherlands, therefore the outcomes are merely and at best representative for comparable populations.

The questionnaire was administered in English, answered by mainly Germans. There was no control of how language proficient participants were filling in the questionnaire. This is a potential bias of the outcomes of all the scales.

### **Conclusion**

It can be concluded that the indirect effect of extraversion on mental wellbeing via experiential acceptance contributes to explaining why extraverts seem to expose greater mental wellbeing than introverts. Further research is required to examine the processes underlying the function of experiential acceptance in more detail.



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## **Appendix**

### **Questionnaire battery including the informed consent, 5 self-developed demographic questions, the MHC-SF, the BFI, and the AAQ-II**

Welcome,

Thank you for taking part in our survey. It is part of the Bachelor program 'Positive Psychology and Technology' of the University of Twente. The aim of the survey is to study how people cope with difficult or aversive situations or experiences, and what factors are related to such coping styles. We will present you several questionnaires that cover different topics, including important life-events, personality, sleep patterns, and the way you cope with stressful situations and feelings.

Completing the survey will take about 30 minutes. All data will be treated purely confidential and anonymous. The participation in this survey is voluntary which means that you have the right to cancel participation at any point.

For further questions, please do not hesitate to contact the researcher:

Marte Disse: [m.r.disse@student.utwente.nl](mailto:m.r.disse@student.utwente.nl)

I understand the information provided above and want to take part in this study.

☐ Yes

*First, we would like to ask you for some background information.*

*Q1 What is your sex?*

- ☐ Male
- ☐ Female

*Q2 How old are you? \_\_\_\_\_*

*Q3 What is your marital status?*

- ☐ Single
- ☐ With partner
- ☐ Married/ registered partnership
- ☐ Divorced
- ☐ Widowed

*Q4 What is your nationality?*

- ☐ German
- ☐ Dutch
- ☐ English
- ☐ Others

*Q5 What is your highest educational qualification?*

- ☐ Primary School (Grundschule, Basisschool)
- ☐ Vocational Education (e.g. Hauptschule, LBO, VMBO)
- ☐ Secondary Education (e.g. Realschule, MAVO)
- ☐ Higher Secondary Education (e.g. Abitur, Fachhochschulreife, HAVO, VWO)
- ☐ Bachelor's Degree
- ☐ Master's Degree
- ☐ Doctorate Degree

*Q6 From now on, each new questionnaire will be displayed on a separate page. Please indicate to what extent the items of the questionnaires apply to you and answer them as accurately and honestly as you can. There are no right or wrong answers. With this questionnaire, we try to gain insight in your well-being. The following statements are about how you have been feeling during the past month. During the past month, how often did you feel...*

	never (1)	once or twice (2)	about once a week (3)	about 2 or 3 times a week (4)	almost every day (5)	every day (6)
... happy (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... interested in life (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... satisfied with life (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... that you had something important to contribute to society (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... that you belonged to a community (like a social group, or your neighbourhood) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... that our society is a good place, or is becoming a better place for people like you (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... that people are basically good (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... that the way our society works makes sense to you (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... that you liked most parts of your personality (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... good at managing the responsibilities of your daily life (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... that you had warm and trusting relationships with others (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

... that you had experiences that challenged you to grow and become a better person (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... confident to think or express your own ideas and opinions (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... that your life has a sense of direction or meaning to it (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Q7 This questionnaire is about personality traits. Some of the following characteristics may or may not apply to you. For example, do you agree that you are someone who likes to spend*



*time with others? Please indicate to what extent you agree or disagree with the following statements. I see myself as someone who...*

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
... is talkative (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is reserved (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is full of energy (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... generates a lot of enthusiasm (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... tends to be quiet (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has an assertive personality (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is sometimes shy, inhibited (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is outgoing, sociable (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Q8 This questionnaire is about aversive situations or experiences in general. People differ a lot in the way they cope in stressful situations. Please indicate to what extent the statements are true for you.*

	Never true (1)	Very seldom true (2)	Seldom true (3)	Sometimes true (4)	Frequently true (5)	Almost always true (6)	Always true (7)
Its OK if I remember	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

something unpleasant. (1)							
My painful experiences and memories make it difficult for me to live a life that I would value (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm afraid of my feelings. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry about not being able to control my worries and feelings. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My painful memories prevent me from having a fulfilling life. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am in control of my life. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotions cause problems in my life. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It seems like most people are handling their lives better than I am. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Worries get in the way of	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

my success. (9)  My thoughts and feelings do not get in the way of how I want to live my life. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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