

**Writing as a Form of Therapy: Increasing Subjective Well-Being by
Writing About Positive, Negative and Neutral Experiences**

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Abstract

As a variation on Pennebaker's writing paradigm, this study investigates whether a writing intervention has a positive effect on subjective well-being, as well as if this effect differs within different valences of the writing. A three-day writing intervention was conducted amongst 39 Dutch participants, who were asked to indicate their subjective well-being the day before and the day after this intervention. Life satisfaction and positive and negative affect were the two building blocks for the subjective well-being measurement. It was expected that all conditions except for the negative non emotion regulation condition significantly increased people's subjective well-being. Also, it was expected that expressive positive writing has a stronger effect on subjective well-being than expressive negative writing from an emotion regulation perspective and the neutral writing condition. Results show that there are no significant effects for any of these expectations, and that the positive writing condition even shows a lower score on subjective well-being after the writing intervention. The study's limitations, such as the small sample size, the duration of the study and the questionable reliability of the scale are discussed and used to formulate recommendations for future research. For future studies, a larger sample size, more points of measurement and a repeated measures analysis for the separate scales would be appropriate.

Keywords: expressive writing, PANAS, DTS, life satisfaction, writing paradigm, emotion regulation, subjective well-being

Writing as a Form of Therapy: Increasing Subjective Well-Being by Writing About Positive, Negative and Neutral Experiences

Writing as a form of therapy and its beneficial effects on mental and physical health has been long-studied (Baikie & Wilhelm, 2005; Burton & King, 2004; King & Miner, 2000; Pennebaker, 1997). A large body of studies in which writing was used as an intervention showed long-term health benefits, such as fewer visits to medical specialists and lesser days of illness (Burton & King, 2004; Pennebaker & Beall, 1986), enhanced mental health, such as subjective well-being or SWB (Pennebaker et al., 1988; Schroder et al., 2017), and even increased lung functioning (Smyth et al. 1999). Writing therapy includes interventions focusing on the valences of expressive positive, expressive negative and neutral writing. Valence within this study is the angle of the personal experience that a writer is instructed to write about. Affective states such as anger, anxiety, and sadness have negative valence, whereas affective states such as happiness, and feeling relieved have positive valence (de Dreu et al., 2008). A neutral valence would be describing objects or locations, without any affective state involved. Expressive positive writing entails writing about intensely positive events (IPE), whereas expressive negative writing entails writing about traumatic or negative events (intensely negative events, INE).

Within the field of emotions, there is a great deal of studies focusing on the effects of negative emotions in comparison to positive emotions on health in general (Fredrickson, 1998; Folkman, 2007; Folkman & Moskowitz, 2000; McCrae, 1984; Pearlin et al., 1981). The studies on negative emotions contain interventions for writing about INE, and mainly show increased positive effect on the long term, from two months after the writing exercise (see, e.g. Baikie & Wilhelm, 2005; Pennebaker, 1997; Pennebaker & Beall, 1986; Pennebaker et al., 1988; Pennebaker et al., 1997; Pennebaker & Seagal, 1999).

These beneficial effects contained mental and physical outcomes, such as functioning of the immune system (Fredrickson, 1998; Fredrickson, 2000; Pennebaker et al., 1988; Petrie et al., 1995) and lesser health problems (see, e.g. Greenberg & Stone, 1992; Pennebaker & Beall, 1986). These results were obtained in longitudinal studies, in which the positive effects showed after a longer period of time. Simultaneously, short-term effects (within two weeks after the writing exercise) of writing about a traumatic event appeared to be negative (Pennebaker & Beall, 1986).

The counterpartial approach to expressive writing about INE is expressive writing about IPE. One important study that added to the field of positive writing was done by Burton and King (2004) who studied the effects of writing about IPE on participants' moods. In this study, moods are referred to as affective states, and are used to describe one's conscious state of mind, as part of SWB. The study by Burton and King (2004) is a variation on the studies done by Pennebaker. Pennebaker's (1997) idea lies in the assumption that the disclosure of emotional experiences can have a positive effect on several aspects of health, especially when writing about negative events compared to neutral events. Burton and King (2004) find no evidence for the negative approach as an aspect of the writing paradigm, to be an essential element of the "healing power" of writing. They find that participants who write about IPE show enhanced positive moods in the months after the experiment as well (Burton & King, 2004), which adds to the idea that not only negative expressive writing may positively affect these health aspects.

Positive emotions also seem to have significant benefits to a person's overall well-being. In a study on gratitude, Wilson (2016) found that participants appeared to take a more positive approach to life after two months of practicing gratitude, with better physical and mental health as a result. This adds to the evidence that positive emotions can help enhance SWB.

Other studies on positive emotions (see, Fredrickson, 1998; Fredrickson, 2000) suggest that individuals who are resilient are better in bouncing back from negative experience, doing so by using positive emotions. They are more likely to find positive meaning within the negativity that they go through and they show fewer symptoms of depression (Fredrickson et al., 2003). This means that individuals who use positive emotions to deal with negative experiences turn out to be better in preventing and processing these experiences. Tugade et al. (2004), further elaborate on this and find reasons to assume that the experience of positive emotions may have contributed to emotion regulation, and therefore allow an individual to recover from certain negative events by using positive emotions.

Emotion regulation (ER) can be introduced as an intervention to take a more distant position in the narrative. Gross and Jazaieri (2014) specify ER as a set of actions that one takes to affect an emotional experience, both consciously as well as unconsciously. According to Kross et al. (2005), one aspect of ER is self-distancing, a process in which one takes a step back from the experience and the supplementary emotions. It provides an alternative approach to expressive negative writing by taking away the deep emotional experience of impactful events and therefore the short-term decrease in one's well-being. These results add to the growing evidence that short-term health benefits may be obtained by writing about positive topics as well as negative ones.

A third approach to the study of writing as a form of therapy suggests something different than the previous literature. In a study on the linguistic predictors of adaptive bereavement by Pennebaker et al. (1997) and a study on the health benefits of narrative by Pennebaker and Seagal (1999), no evidence was found that expressing negative emotions in any form has a more beneficial effect on one's well-being compared to expressing positive emotions. In fact, the mere

expression of INE or IPE seems to be sufficient, but improvements in health seem to require transferring experiences in any sort of language, regardless of the valence or the form (King & Miner, 2000; Pennebaker, 1997). This suggests that in the case of writing, the process itself may be beneficial regardless of the emotional approach, and the creation of meaningful narrative (having a clear and conveying function as perceived by the writer) is more important than the emotional approach of the writing (Pennebaker & Seagal, 1999). In other words, arguing that the act of writing is what counts, a neutral writing intervention should have the same effects as a positive or negative expressive writing intervention.

Based on these studies, it seems that writing about both IPE as well as INE come with health benefits. It was found that individuals who write, regardless of the topic, show improvements in their psychological well-being on the long term, but also on the short-term for the expressive positive writing studies (Burton & King, 2004; King & Miner, 2000). Also, the negative short-term effect of INE could possibly be circumvented with explicit instructions for ER and possible positive short-term effects can be explored. Thus, there is room to further explore the assumption that ER can explain why all three approaches to writing (positive, negative, neutral) as an intervention for increasing SWB could be effective. There are reasons to assume that all three approaches work equally well in the short term, as long as the instructions are carefully designed. Eventually, previous studies are mainly characterized by their focus on dealing with negative emotions through writing, while there is an increasing call for more positive perspectives. Burton and King (2004) address the importance of creating consistent evidence by approaching the study of emotions from a counterpartial, positive perspective. Also, the possible irrelevant valence of the writing intervention asks for more evidence to build the body of existing research.

Finally, the studies as done previously, focus on the effectiveness of the long term only. In order to provide a simple self-help solution for enhancing SWB, a short-term solution is needed in order to increase SWB quicker and to help people who suffer from a weaker SWB. The study is approached from positive, negative (ER and non ER), and neutral valence interventions and investigates whether these interventions are helpful, regardless of what is written about. In an attempt to further investigate the possible beneficial short-term effects of the different valences of writing, the following research question will be explored: to what extent does the valence of an expressive writing task affect participant's short-term subjective well-being? The study contains different emotional perspectives of writing and measures the subjective well-being of the participants prior and after the writing, and adds to the writing paradigm by analyzing short-term effects of different emotional valences jointly.

Theoretical framework

The power of writing

A growing body of research has indicated that different strategies for handling and regulating emotions could be beneficial in processing events and enhancing mental well-being (e.g. expressive negative writing, expressive positive writing, practicing gratitude, emotion regulation, and resilience). Studies on different interventions to enhance SWB have in common that their interventions entail translating an event into a narrative form, either in speech or in writing. The practice of creating a narrative form of expression with enhanced well-being as a result is in line with the findings in previous studies (see, e.g. Pennebaker, 1997; Burton & King, 2004), which state that its effects on SWB are positive. Therefore, it seems reasonable to assume that putting experiences into a narrative form, such as writing in the current study, can have beneficial effects on SWB. However, there seem to be mixed results regarding writing about a

neutral topic, in which the event as described is neutral, and so the event is not emotionally charged (see, e.g. describing a room or talking about the weather). Lyubomirsky et al. (2011) do not find any effects for their neutral condition, in which the participants are instructed to write about a topic that is not emotionally charged. Another approach is that of practicing gratitude in the form of a writing assignment, in which gratitude refers to the ability to identify and value the benefits received from others and the motivation to reciprocate with positive behavior (Emmons, 2007). Emmons and McCoullough (2003) investigated gratitude and SWB in daily life and found that when people intentionally choose to engage in gratitude practices, they experienced a general sense over enhanced SWB. On the contrary, Pennebaker et al. (1997) and Pennebaker and Seagal (1999) find reasons to assume that the act of writing may be beneficial, regardless of the valence of the emotion. To summarize, expressing emotions through writing seems to have a beneficial effect on SWB. Though, mixed results in relation to a neutral condition exist, which is reason for further investigation on the writing paradigm from different valence perspectives. As a result of the previous literature, the two hypotheses H2a: “Expressive positive writing has a stronger short-term effect on SWB than writing about a negative event” and H2b: “Expressive positive writing has a stronger short-term effect on SWB than writing about a neutral event” are further explored.

Measuring SWB

In order to conceptualize the effects of IPE, INE and neutral writing, SWB as a measure of emotions is further explored. SWB is the overall perception of life satisfaction in combination with a predominance of positive affect over negative affect (Diener, 1984), and is important because it leads to benefits such as better mental health (Danner et al., 2001). Diener (1984) states that SWB has three characteristics. It is subjective, so it resides within one’s experience

and objective conditions are not included. It includes positive measures, which does not mean that negative measures are absent, and it entails a global assessment of all aspects in someone's life, meaning that the measurements do not focus on one particular time in life, and can be interpreted differently (e.g. last day, last week, an earlier time in life). The interventions within this study attempt to test the effects of changing one's experience and enhancing positive measures through writing about and processing different types of emotional events, with a better global assessment of someone's life as a result.

Since SWB is a subjective measure of multiple aspects in someone's life, Andrews and Withey (2012) determined several indicators of perceived well-being. The first one, life satisfaction, is a general evaluation of a person's quality of life, according to their own criteria (Diener, 1984). It is the general evaluation with global judgments on one's life (Diener, 1984). It appears that individuals make these general evaluations because they do not (and cannot) examine all aspects of their lives and then add weight to them equally. Therefore, Diener (1984) argues that we tend to use shortcuts, and divide them by means of domains and criteria. Yet, even with the use of these shortcuts, there is a substantial temporal stability in our life satisfaction judgments (Erhardt et al., 2000). The advantage of life satisfaction as a measure of SWB is that it captures a general idea of well-being from a respondent's own perspective (Diener et al., 2003). People are seemingly using their own criteria for making this judgment. However, it is strongly reliable on what information is at hand during judgment making, with sometimes unreliable or less valid measures as a result (Diener et al., 2003). For instance, individuals can feel overwhelmed by negativity because of bad health, and forget about positive aspects in life such as good friendships or a great marriage.

Second, this study aims to measure one's evaluations of multiple emotions (Watson et al., 1988). Watson et al. (1988) argue that these evaluations are measurements of the degree of positive and/or negative emotions that one experiences, also defined as positive and negative affect. Researchers in the field of SWB often focus on dimensions of emotions rather than all emotions separately, because in the long term, separate emotions within the same valence tend to be correlated (Zelenski & Larsen, 2000). Watson and Tellegen (1985) developed a widely used scale for measuring positive and negative affect: the Positive and Negative Affect Scale (PANAS, Watson et al., 1988) as described in further sections.

Enhancing SWB through negative experiences

Several studies indicate that writing about negative emotional experiences has a significant effect on one's well-being, and that the writing paradigm is noticeably powerful (Baikie & Wilhelm, 2005; Pennebaker, 1997). A study by Baikie and Wilhelm (2005) on the emotional and physical health benefits of expressive negative writing let participants write about traumatic events and measured their physical and mental well-being afterwards. Strikingly, the participants experienced strong emotions and an increase in stress and negative emotions shortly after the writing, but in the long term more beneficial physical and emotional outcomes were measured, such as lower blood pressure and less experienced stress (Baikie & Wilhelm, 2005). Similar studies (see, e.g. Pennebaker, 1997; Pennebaker and Beall, 1986; ; Smyth, 1998) found similar results. However, the results were measured from two months after the intervention. Short-term measurements, within two weeks after the intervention, resulted in experiencing more negative emotions and feeling overwhelmed by the recall of the negative event (Kross et al, 2015; Pennebaker & Beall, 1986;).

A possible explanation for these short-term negative effects, and positive effect on the long term only, could be that the emotions as experienced during the writing exercise negatively affect the emotional state of the writer at that certain time, whereas it may evoke processing the event in the long term. Research has shown that writing serves as a way to organize complex emotional experiences, which is what happens over a longer period of time (Pennebaker & Seagal, 1999). Since the emotions related to negative experiences may be overwhelming and evoke a worsening of one's emotional state straightaway, it could take some time for the person to process, restore and organize these emotions with enhanced SWB as a result.

Emotion regulation. Writing about IPE has shown to have positive long-term effects on subjective well-being (SWB), and so does writing about INE. Given that the short-term effects of expressive negative writing appeared to be negative on SWB, this study investigates an approach in which participants take a more distant stance to the negative emotion and to measure the effects on SWB.

Emotion regulation allows taking a more distant approach to a negative event and negative emotions, and can be assessed through different tactics. For instance, mindfulness seems to be central to the ability of regulating emotion. Mindfulness is a mental state in which one brings awareness to the present moment and accepts thoughts and emotions as they are without a direct reaction or judgment (Kabat-Zinn & Hanh, 2013), which facilitates ER in a way that it de-automizes reactions and that it soothes distress, which in turn results in enhanced SWB (Kang et al., 2013). It can serve as an adaptive self-regulatory process, and can help regulate thoughts and emotions that contribute to the potentially powerful effect of mindfulness on SWB (Kang et al., 2013). However, even though practicing mindfulness would be a relevant approach

to dealing with negative emotions, it seems to require a long-term practice rather than a short-term practice in order to have an effect.

The hot/cool systems model of self-regulation (Metcalf & Mischel, 1999) is used as a tool to perform emotion regulation and avoid becoming overwhelmed by a negative emotion. In this model, emotionally arousing features are labeled as “hot”, whereas emotions that are not experienced as arousing are labeled as “cool”. The model allows contemplating emotional experiences without activating intense levels of affect and could be an approach for regulating emotions connected to negative events. The hot/cool systems model of self-regulation seems more appropriate in relation to the writing paradigm because it does not require intense emotions and therefore avoids the experience of negative emotions.

The most appropriate approach for this study seems to be self-distancing, since it requires active writing rather than mindful thinking or labeling emotions, which is within the scope of this study. Self-distancing as a dimension of ER, entails an attitudinal adjustment that allows individuals to take a step back from their experiences in order to work through it more effectively, with a reduced negative affect as a result (see, e.g. Gross, 2013; Kross et al., 2005; Lazarus & Alfert, 1964; Metcalfe & Mischel, 1999). When emotions are intensely overwhelming, one may automatically take a self-distancing perspective in order to neutralize the emotions (Kross et al., 2005).

In a writing intervention, self-distancing may help the narrator to take a more distant stance to the experience and take a step away from the intense emotions that come with this experience. This may be beneficial in the process of enhancing SWB. In working through negative experiences, the self can be distanced, and individuals can process their negative emotions from a decentered, third-person perspective (see, e.g. Libby & Eibach, 2002; Robinson

& Swanson, 1993). Taking a more distant approach to an event that evokes negative arousal could provide a more effective way to deal with the experience and to process it better.

Gross (2013, pp.10; see Figure 1) provides a model that is widely used for coordinating emotional regulatory processes (Webb et al., 2012). ER comprises the automatic and controlled processes that are embroiled in the initiation, maintenance, and modification of the occurrence, intensity and duration of emotional states (Eisenberg et al., 2000). In other words, ER can come into play during several stages of emotional experience in order to regulate the intensity of the particular emotion. The model contains five emotion-regulation processes which are relevant for the writing paradigm. These five processes are distinct based on their primary impact on the emotion generating process: situation selection, situation modification, attentional deployment, cognitive change, and response modulation (Gross, 2013). In this study, situation selection and situation modification are most relevant in the negative writing condition. During situation selection, participants are influenced by whether or not they will come across a situation that is likely to evoke an either desired or undesired emotion. They will choose whether or not to enter a potentially emotion-eliciting situation, which entails avoiding certain people, places, or activities (Werner et al., 2011). This phase of the model is most relevant for writing about INE, since that valence is expected to evoke most undesired emotions. In IPE and neutral writing, situation selection is a relevant factor in a way that the writer decides which desired emotions to evoke. However, this is expected to be less threatening to someone's affective state at that moment and is therefore less applicable to these situations.

Situation modification includes the attempts to modify something about the situation in order to affect its emotional impact in either an enhancing or a diminishing way. Situation modification is an important tactic when individuals perceive the emotions that come with the

writing as intense and want to modify its emotional impact (Gross, 2013). Within writing about INE, situation modification most likely comes down to neutralizing the emotions, whereas in writing about IPE it may be to strengthen the positive emotion.

When individuals use attentional deployment, they (re)direct attention as if they are altering their emotional response. This seems to be especially occurring when writing about INE, in a way that individuals are altering their negative emotional responses in a way that it becomes more bearable. Taking a more distant approach to the situation could be a way to redirect the attention away from the negative emotions and reliving the experience.

Cognitive change refers to efforts to revise the meaning of the situation in an attempt to influence one's emotion. It entails the active modification of the meaning of a situation with the aim of altering emotional response (Werner et al., 2011). In the writing process, this could be a result of self-distancing in order to influence one's confronting and intense emotions. Again, this seems more likely to occur in an INE expressive writing situation, since these emotions are less desirable than emotions that are associated with a positive experience. Response modulations are the efforts made to influence one's experiential, behavioral, or physiological responses to the emotion-eliciting situation (Gross, 2013). The response modulation in this study mainly focuses on the experiential influences on one's emotions and challenges the current literature that claims that writing about INE only improves SWB on the long term.

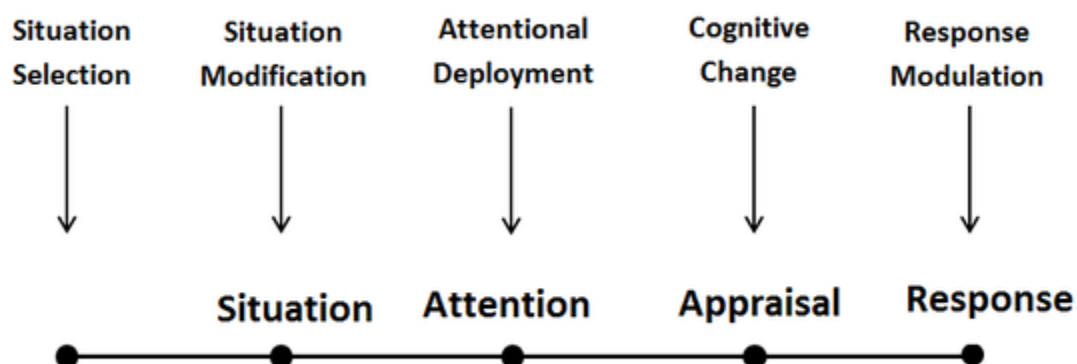
According to the literature on the writing paradigm and emotion regulation as pointed out in this framework, it is likely that an undesired emotion comes up while recalling an emotional experience, it being both negative as well as positive. Therefore, it is not unlikely that participants engage in ER processes automatically. By giving participants a different, rather third-person narrating position in the story and distracting their position away from being the

experiencer, the aim is to activate situation modification. As a result of taking a more distant way of writing, this is expected to positively affect someone's emotion (cognitive change).

Based on literature on emotion regulation and the effects of INE, it is hypothesized that H1a: "Repeated negative expressive writing (from an ER perspective) significantly increases short-term SWB". Additionally, it is relevant to compare the negative ER condition with the negative non ER condition. The comparison functions as a control condition in order to test whether taking a distant stance has a significant effect on SWB after the writing intervention in comparison with a non ER approach. Since this is not the main focus of the study, this would only be exploratory and therefore will not be translated into a separate hypothesis.

Figure 1.

Model for emotional regulatory processes



Enhancing SWB through positive experiences

With the extensive access to research on the effects of negative emotions, an opposite-thought movement that focuses on positive emotions in order to increase physical health and mental well-being has started to arise. Cultivating positive emotions with enhanced SWB as a result has been approached with tactics such as writing about IPE (Fredrickson, 1998; Burton & King, 2004), practicing gratitude (Alkozei et al., 2017; Layous et al., 2017), and using

hope as an tool to increase positivity (Daugherty et al., 2018). These approaches have in common that the practice of enhancing SWB involves expressing positivity about things in life repeatedly, with better perceived SWB as a result.

In order to get a better understanding of the effects of positive emotions on SWB, the broaden-and-build model of positive emotions (Fredrickson, 1998) is used as a framework to explain the process of enhancing SWB through positive emotions. The model sets a foundation that assumes that intervention strategies, such as expressive writing, that cultivate positive emotions are specifically appropriate for preventing and treating problems based on negative emotions (Fredrickson, 2000). This means that the weight of negative events or negative emotions as experienced in the past can be relieved or resolved through enhancing positivity rather than focusing on the negative experience. Certain negative emotions can be depression, aggression, anxiety, and stress-related health problems (Fredrickson, 2000; Myers & Diener, 1995).

The form and function of both positive as well as negative emotions are distinct, but also complementary (Fredrickson, 2000). This means that negative emotions (such as anger and fear) narrow someone's brief thought-action response toward actions that initially serve as a survival mechanism (Fredrickson, 2000), whereas positive emotions (such as joy and interest) broaden someone's brief thought-action response. The positive emotions can in turn strengthen one's enduring personal resources that serve as a mechanism for survival (Fredrickson, 2000). In other words, positive emotions activate and strengthen some sort of coping mode with larger assets and a longer duration in comparison to negative emotions.

The broaden-build model focuses on positivity as an approach to treating problems that are rooted in negativity. However, it does not elaborate on enhancing positivity through

emphasizing positivity, which is an approach that may perhaps positively affect SWB. A study that does stress this particular topic was done by Burton and King (2004) who studied the effects of writing about IPE on participants' affective states. Their study focuses on the benefits of writing about IPE rather than writing about traumatic experiences and demonstrates that participants who write about IPE show enhanced positive moods right after the writing, and lesser health visits in the three months after the experiment. In contrast to the results of negative writing studies, these study results indicate the beneficial effects of writing about IPE not only on the long-term, but on the short-term as well. Long-term effects therefore seem similar, whereas short-term effects seem opposite. Based on this, it is hypothesized that H1b: "Repeated positive expressive writing significantly increases short-term SWB".

Enhancing SWB through neutral experiences

A third approach to the writing paradigm uses the act of writing, with a rather neutral valence. Pennebaker and Seagal (1999) assume that the act of constructing a story is a natural human mechanism that helps individuals to process and understand negative emotions. Bruner (1992) adds to this that humans try to make sense of their lives by organizing experiences into narrative. This process allows one to remember and to rationally organize experiences, while incorporating thoughts and emotions. Structuring experiences results in a better ability to manage the emotional effects of that experience (Pennebaker & Seagal, 1999). According to Pennebaker and Seagal (1999) constructing a story facilitates a sense of resolution, which indicates that creating a story works as a tool in order to process emotions, regardless of the valence of the writing. In the neutral writing condition, this sense of resolution is expected to be found in the act of the writing itself, which should have an effect on SWB.

Creating meaningful narrative. As outlined in the introduction, King and Miner (2000), Pennebaker (1997), and Pennebaker and Seagal (1999), find reasons to assume that the production of meaningful narrative is of a bigger influence than the valence of the writing, thus the act of writing is more important in increasing positive emotions. Creating meaningful narrative (as perceived by the writer) is widely studied in the field of creative writing. Andrews-Hanna et al. (2013) argue that self-generated thoughts are especially advantageous for those who are able to regulate an experience towards a positive or productive topic and that those who engage in positive thoughts would show increased mental health. In the current study this would mean that those who engage in self-perceived meaningful writing and engaging positive thoughts would have beneficial effects on their SWB, regardless of the valence of the writing. In the case of writing about INE, self distancing could evoke emotion regulation towards a less negative experience of the event, with enhanced SWB on the short term as a result. The basis of positive thought is expanded by research on putting thoughts into words and its effects on a person's well-being. For example, research on the effects of creative writing on self-esteem and self-efficacy showed that writing freely enhanced both (Chandler, 1999). In relation to INE, this could support a decrease in negative emotions and support the processing of the experience. Additionally, in creative writing for health and well-being the potential to improve the writer's life through writing with the purpose of increasing health and well-being is taken into account (Wall et al., 2018), and is directly related to mental health benefits as defined by Pennebaker (1997). In line with Pennebaker (1997), these improvements relate to physical and mental health. Based on these findings, a meaningful narrative seems to enhance physical and mental health, which, in the scope of this study, applies to mental health measured by means of SWB.

With the research by Chandler (1999), Pennebaker (1997), and Wall et al. (2018) in mind, we consider neutral writing as a condition that should be further explored. In order to investigate the claim that the act of writing is more important to have positive effects on SWB than the valence of the writing exercise, it is essential to include a neutral condition in this study. Based on what is known about the act of writing and creating meaningful narrative, it is hypothesized that H1c: “Repeated neutral writing significantly increases short-term SWB”.

Method

Design

This study was designed as an online experiment, which was a randomized between-subject design with four different conditions: writing about IPE, INE, INE from an ER perspective, and a neutral topic. The methods in this study were based on a study by Pennebaker and Beall (1986) and Burton and King (2004) on the emotional and physical health benefits of expressive writing. This study was designed as an online experiment to measure SWB. The study was a joint data collection with Isabelle Knaap (snr: 2001103), which means that several measurements that were included in the data collection were not used in the data analysis. For example, an additional SWB scale (Diener et al., 1985), a scale measuring Brief Emotional Intelligence (Schutte et al., 1998), and demographic questions were part of the joint data collection. Participants were randomly assigned to one of the writing conditions. The study got ethical clearance from the TSHD REDC (code: REDC 202124).

Participants

The participants within this study were Dutch natives. They were recruited through the Tilburg University Participant Pool, social media, and the personal network of the researchers. Respondents were required to be native Dutch speakers and to be at least 18 years old in order to

take part in the study. The participants who were recruited through the Participant Pool received 2 credits for participation, whereas participants outside of the participant pool could sign up for winning a €10,- gift card from Bol.com. Participants from the Participant Pool who dropped out early received 0.5 credit, whereas participants outside of the Participant Pool did not receive anything from an early dropout. A total of 39 people participated, and no participants were excluded from the data. A total of 19 of the participants were female, and 20 of the participants were male. Participants' age ranged from 18 to 57, with a mean age of 23.32 ($SD = 6.46$).

Exclusion criteria

Participants who did not consent or who did not indicate that they were Dutch natives were excluded from the study, so no data was gathered from them. One participant preferred to write in her other native language (German), but since the participant was bilingual, the data was included into the analysis. The final data was scanned for outliers. Questionable data was marked, and then checked more in-depth. An example of such questionable data was giving the same answer for all items (e.g. the participant only selected *blij [delighted]* within the PANAS scale) within one scale. Each of the other questionable responses was then analyzed individually in order to judge whether the data should be included or excluded. For example, straightliners (a lack of variance in the responses) within the scale questions were excluded. When one or more answers were not in the straight line, the data was not excluded. If respondents wrote less than 200 characters (about 30 words) in the writing exercise, they would get a reminder that they have to continue writing. If they ignored the instructions on the procedure and skipped through the whole survey faster than the instructed five days, which is something that is visible in the Qualtrics software, the participant was removed from the data. In case they forgot to fill in an

answer, they got a reminder to do so in order to avoid missing data. No participants were excluded from the data.

Materials and measures

Measurement items for SWB as a dependent variable

In measuring one's affective state, there have been countless measures developed to operationalize all aspects of affective state, such as happiness and SWB (Andrews & Withey, 2012; Hills & Argyle, 2002). Andrews and Withey (2012) hypothesized that one's general assessment of life involves both a cognitive evaluation as well as some degree of positive and/or negative emotions. Therefore, two scales that focus on these aspects are combined as one scale to measure SWB: the Delighted Terrible Scale (DTS, Andrews & Withey, 2012) for life satisfaction, and the Positive Affect Negative Affect Scale (PANAS, Watson et al., 1988) for positive and negative emotions.

The PANAS is the most frequently used self-report instrument for assessing positive and negative affect (Michalos, 2015). It measures two general dimensions of SWB: positive and negative affect. Positive Affect (PA) refers to a variety of different affective states and emotions, such as happiness, interest, love, pride, contentment, and pleasure (Michalos, 2015). On the contrary, Negative Affect (NA) is a state of unpleasurable engagement and general distress, and is associated with emotions such as nervousness, guilt, fear, anger, and contempt (Koch et al., 2013). In order to create one line in the scale, the current study measures positive and negative affect through the PANAS by Watson et al. (1988), in which the NA scores are recoded in order to align the scores with the PA scores. The PANAS has two versions, of which one extensive 60-item version, and a shorter 20-item version. Given that life satisfaction is measured as well, the 20-item scale is used to determine PA and NA.

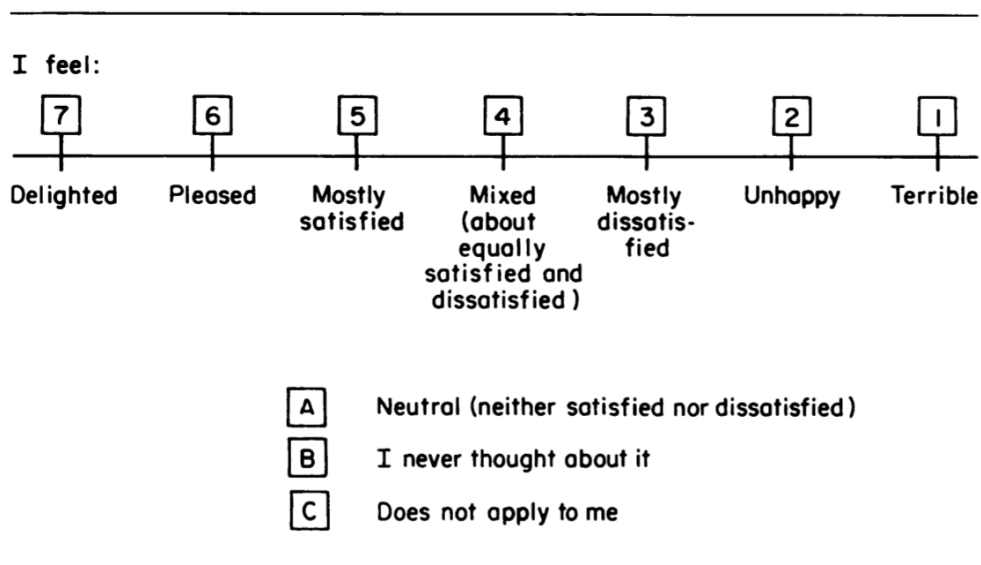
In his article on subjective well-being, Diener (1984) criticizes one-item scales for their high inconsistencies between participants. He argues that the only measure of reliability is one that is temporary. A multi-item scale would therefore be more suitable for measuring SWB. Therefore, an adjusted DTS scale (Andrews & Withey, 2012), which contains the questions “How do you feel about your life as a whole?”, “How do you feel about life in general?”, “How happy are you these days?” and “How do you feel about your life compared to that of others?” (Andrews & Withey, 2012), is combined with the items from the PANAS scale in order to create one output for SWB. For the sake of the analysis and in order to have consistency in the scales, the original 7-point scale was adjusted into a five-point Likert scale: 5 = *blij [delighted]*, 4 = *voornamelijk tevreden [mostly satisfied]*, 3 = *gemengd [mixed]*, 2 = *voornamelijk ontevreden [mostly dissatisfied]*, 1 = *verschrikkelijk [terrible]* for the DTS items (see Figure 2 for the original scale), and a 5-point scale (1 = *nauwelijks of helemaal niet [very slightly/not at all]*, 2 = *een beetje [a little]*, 3 = *gemiddeld [moderately]*, 4 = *nogal [quite a bit]*, 5 = *in sterke mate [extremely]*) to rate the emotions (e.g. *distressed, excited, proud, and hostile*) as items of the PANAS scale. Additionally, *niet van toepassing (not applicable)* was added as a response option in case the emotion or statement were not applicable for the respondent at that particular moment. The additional response options in the original DTS scale (A = *neutral [neither satisfied nor dissatisfied]*, B = *does not apply to me*, and C = *I never thought about it*) were removed since they seemed irrelevant.

The high extreme of each dimension represents one’s experience of affect, while the low extreme indicates a lack of emotion (Watson et al., 1988). The complete study was conducted in Dutch, in order to avoid language barriers. A Dutch version of the PANAS by Peeters et al. (1996) was used, while the questions for the DTS scale were translated by the researcher and

checked with several Dutch and English native speakers in order to provide a consistent translation. The full survey including all questions can be found in Appendix 1 and 2. The reliability for the SWB scale was medium: $\alpha = .65$.

Figure 2.

Original categories used for assessing overall life satisfaction



Independent variable

The independent, manipulated variable in this study was the writing intervention. It contained four conditions: positive writing, negative non ER writing, negative writing from an ER perspective, and neutral writing. The instructions varied amongst the four conditions in order to determine the effects of the writing on the scales that were filled in after the exercise in comparison to the outcome of the survey that was filled in before the writing exercise (see Appendix 3). The instructions as given in all conditions were based on the study by Pennebaker and Beall (1986), in which the negative instructions were taken from the study as a guideline. Based on the literature on emotion regulation (Gross, 1998; Gross, 2013; Gross & Jazaieri,

2014), they were adjusted to instructions for a more distant approach for the negative ER condition, and a positive, negative non ER and neutral version based on the original, with slight adjustments towards the valence of the writing exercise.

Positive writing condition

The positive writing condition included an instruction to write about an IPE (see Appendix 3). It takes the approach similar to Burton and King (2004) on the positive emotional perspective, of which the emotional approach is in line with Pennebaker's studies. That is to say that in positive emotional writing, the participant is encouraged to feel and relive the experience. The exercise included a text field where the participant was asked to describe an intensely positive event. The participant could write about the same topic on each of the three days, but a different topic was allowed as well. This corresponds to the study as done by Pennebaker and Beall (1986), only were the original instructions reshaped to a positive approach. The writing was done in Dutch, and could only be submitted after ten minutes. After fifteen minutes, it was automatically submitted.

Negative writing condition

The negative writing condition was similar to the other conditions, only did it include an instruction to write about an INE. The instructions were based on the original study by Pennebaker and Beall (1986). The participants were instructed to write about a negative experience of their choice. This could be the same for all three days, but a different topic each day was approved as well. The writing was done in Dutch and could be submitted after ten minutes. After fifteen minutes, the writing was automatically submitted as well. The main function of this condition was to gather data to test the literature on INE, and to compare the effects with the negative ER condition.

Negative writing condition from an ER perspective

The negative ER writing condition was similar to the other conditions, only it included an instruction to write about an INE from the perspective of a narrator. In this condition, the approach leads away from the deep emotional experience, and rather focuses on explaining the event in a way that someone who was not there could understand the situation. The participants were instructed to write about a negative experience of their choice. This could be the same for all three days, but a different topic each day was approved as well. Again, the writing was done in Dutch and could be submitted after ten minutes. After fifteen minutes, the writing was automatically submitted as well.

Neutral writing condition

The neutral writing condition entailed a writing intervention where the participants were asked to write about preassigned topics for three consecutive days, for example what the room that they were in on that specific moment looked like (see Appendix 3). Again, the instructions were similar to the study by Pennebaker and Beall (1986). Participants were asked to describe the topic in as much detail as possible, in order to motivate meaningful narrative. One different topic for each day was given within the instructions. Also within this condition, the writing was done in Dutch and could be submitted after ten minutes, with automatic submission after fifteen minutes.

Additional measures

Additionally, the SWB scale (Diener et al., 1985) and the Brief Emotional Intelligence (Schutte et al., 1998), plus a couple of demographic questions were added for the purpose of the study by the joint researcher, I. Knaap.

Procedure

The full study was conducted by using the Qualtrics survey tool. Altogether, the duration of the survey was about 1,5 hours, spread over five days. Each day, the participant was asked to take part in the exercises for about fifteen minutes, of which the second, third and fourth day included the writing exercise. The first and the fifth day entailed filling a survey with both the scales as discussed. An extra fifteen for reading the consent form, the instructions, additional measures and the debriefing was calculated as well. In case participants forgot to do the exercise, they could still proceed through the link. The only condition to do so is that the full study was completed within 7 days. The reason for this is that this process was more desirable than participants dropping out after forgetting to participate. A total of 13 participants took longer than the instructed five days to finish the study, and 1 participant finished the study in 4 days. The mean duration for the study to be finished is 5.64 days ($SD = 1.20$). In order to avoid skipping through the survey, the writing exercise could only be submitted after ten minutes, with an automatic submission after fifteen minutes. When participants signed up for the study, they received a personal link through which they could enter the survey, which corresponded with an ID number. Also, reminder emails were sent at every beginning of the following day of the study in order to remind the participant to continue with the part for that day, including the link to which they could return every day.

After opening the link, the participant entered the Qualtrics environment. When the participant entered the Qualtrics environment, they were first confronted with the consent form (Appendix 4). The participant was informed about the purpose of the study, the relevance of participating, the confidentiality and the brief instructions for taking the experiment (Appendix 5). Participants were told that the researchers were investigating the effects of writing and that, in

order to do so, respondents would have to do a three-day writing assignment. Then, by means of the randomization option within Qualtrics, they were randomly assigned to one of the four experimental conditions. The data collection was spread over five days. On the first day of the experiment, participants were asked to fill out a survey that asked them how they currently felt by means of several scales (Andrews & Withey, 2012; Davies et al., 2010; Diener et al., 1985; Peeters et al., 1996), including general demographic information (gender and age). This survey was filled out by all participants in all conditions. On the second, the third, and the fourth day, the participants were exposed to the extensive writing instruction within the condition that they were assigned to. This was either the positive, negative, negative ER or neutral condition. On the fifth and last day of the study, the participants were asked to fill out the same survey as they had started with, excluding the demographic information. Finally, participants were thanked and debriefed (Appendix 6).

Confidentiality

In order to ensure confidentiality and anonymity for the participants, their personal information and their written content were deleted from the dataset before the analysis. Since only the scores on the two scales before and after the writing interventions were relevant, only these data were included in the analysis.

Results

Data analysis

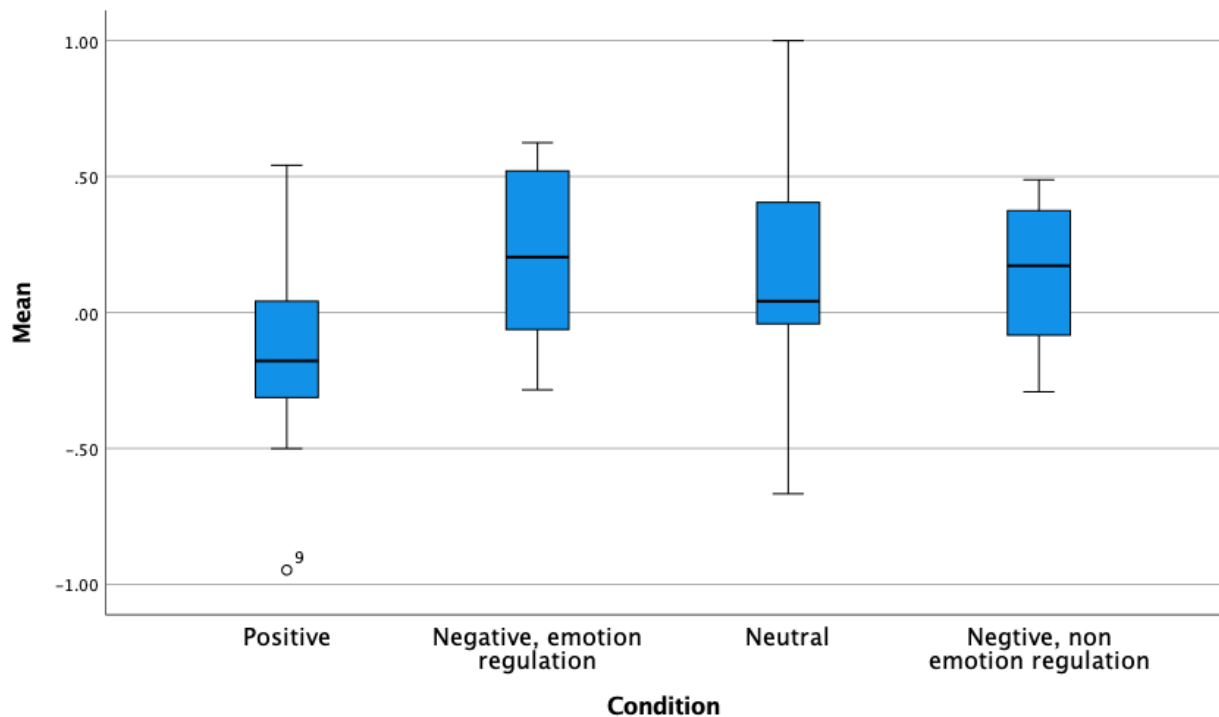
In this study, writing as an intervention on SWB was investigated by means of writing exercises with four different valences. The data analysis was done by means of a dependent samples t-test in order to compare the scores for SWB before the writing intervention with the scores for the two scales after the writing intervention (H1). Also, a one-way ANOVA was

executed in order to compare the effects of the different conditions (H1), and the differences in the effects between the conditions (H2).

To investigate whether writing has a positive effect on SWB, a model was built in which the writing condition was the independent variable, and the scores on the SWB scale after the intervention was the dependent variable. The mean score for the SWB scale before the writing is 3.44 ($SD = 0.48$), which is slightly lower than the mean of 3.50 ($SD = 0.39$) for SWB after the writing. The data were normally distributed and the assumption of homogeneity was met. The overlapping error bars show that the results from the scores after the writing intervention were not significant (see Figure 3).

Figure 3

Differences in scores for SWB after and before the writing intervention per condition.



Positive condition

For the positive condition, the scores on the SWB scale show a mean of 3.64 ($SD = 0.61$) before the intervention, and a mean of 3.51 ($SD = 0.43$) after the intervention. The t-test shows that for SWB $t(10) = 1.01, p = .337, 95\% CI [-.16, -.41], d = .42$. The medium effect size indicates that the positive writing intervention has a medium effect on SWB. However, the differences in scores between the pretest and the post test for SWB in the positive writing condition are not significant. The hypothesis “Repeated positive expressive writing significantly increases short-term SWB” (H1b) is therefore not confirmed.

Negative condition (ER)

For the negative ER condition, the scores on the SWB scale show a mean of 3.29 ($SD = 0.33$) before the intervention, and a mean of 3.50 ($SD = 0.45$) after the intervention. The dependent samples t-test shows that for SWB $t(7) = -1.74, p = .126, 95\% CI [-.49, .08], d = .34$. The effect is strong, indicating that the negative ER condition has a big effect on SWB. However, the differences between the pretest and the post test for SWB in the negative ER writing condition are not significant. The hypothesis “Repeated negative expressive writing (from an ER perspective) significantly increases short-term SWB” (H1a) therefore cannot be confirmed.

Negative condition (non ER)

For the negative non ER condition, the scores on the SWB scale show a mean of 3.30 ($SD = 0.36$) before the intervention, and a mean of 3.44 ($SD = 0.38$) after the intervention. The t-test shows that for SWB $t(9) = -0.66, p = .528, 95\% CI [-.42, .23], d = .45$. The effect size indicates that the negative non ER writing intervention has a medium effect on SWB. Additionally, the differences between the pretest and the post test for SWB in the negative non ER writing condition are not significant. Since this condition functioned as a control condition to

compare the negative ER condition with, there is no direct hypothesis being confirmed or rejected.

Neutral condition

For the neutral condition, the scores on the SWB scale show a mean of 3.47 ($SD = 0.50$) before the intervention, and a mean of 3.56 ($SD = 0.37$) after the intervention. The t-test shows that for SWB $t(9) = -1.64, p = .136, 95\% CI [-.34, .05], d = .27$. The differences between the pretest and the post test for SWB in the neutral writing condition are not significant, and the effect size indicates that the neutral writing intervention has a medium effect on SWB. As the results are not significant, the hypothesis “Repeated neutral writing significantly increases short-term SWB” (H1c) cannot be confirmed.

Differences between the effects of the conditions

To test the hypothesis that the different writing interventions increase SWB (H1), that expressive positive writing has a stronger short-term effect on SWB than writing about a negative event from an emotion regulation perspective (H2a) and that expressive positive writing has a stronger short-term effect on SWB than writing about a neutral event (H2b), a one way ANOVA was performed. The aim of the ANOVA was done to compare the effects between conditions. The assumption of variance was met. The ANOVA did not show a significant effect of condition on SWB ($F(3, 35) = 1.47, p = .241, \eta^2 = .11$). In combination with the small effect size, no significant effect of the condition of the writing exercise of SWB was found. Based on these results, no support for H1 was found.

In order to test the hypothesis “expressive positive writing has a stronger short-term effect on SWB than writing about a negative event”, a follow up test was conducted. Planned contrasts reveal that the positive condition does not have a significant effect on SWB and that the

effect size is small ($Mdif, t(35) = -1.89, p = .066, r = .02$). This means that the short-term effect of positive expressive writing is not significantly bigger than the expressive negative writing from an emotion regulation perspective. Secondly, the hypothesis “expressive positive writing has a stronger short-term effect on SWB than writing about a neutral event” was tested. The planned contrast revealed that $Mdif, t(35) = -1.33, p = .191, r = .07$. Again, the effect is not significant, with a small effect size, indicating that the short-term effect of positive expressive writing is not significantly bigger than the neutral writing condition. Lastly, an additional planned contrast was done to investigate the difference between the negative expressive writing condition from an ER perspective with the negative expressive writing condition from a non ER perspective. Planned contrast showed that $Mdif, t(35) = 0.37, p = .716, r = .07$. Again, the results are not significant with a small effect size, which means that there are no significant differences between the effects of both INE conditions on SWB.

Conclusion and discussion

In this study, the effects of writing on subjective well-being (SWB) were researched and the research question “To what extent does the valence of an expressive writing task affect participant’s short-term subjective well-being?” was investigated. The writing consisted of four different valences: positive, negative (emotion regulation), neutral, negative (non emotion regulation). The results of this study indicate that there seems to be an increase in SWB within all writing conditions except from the positive one. However the results were not significant, so no hypotheses could be confirmed.

Previous studies on the effects of writing on SWB (see, e.g. Burton & King, 2004; Fredrickson 1998; Fredrickson 2000; Tugade et al., 2004) indicated that writing about a positive event has positive long-term and short-term effects on people’s SWB. They claim that in order to

deal with negative emotions (in this study a decreased SWB), enhancing positive emotions is a highly effective tool to do so. The results of this study are not in line with the previous studies as discussed in the introduction and the expectation that positive expressive writing would significantly increase SWB. The results were not significant, and therefore the hypothesis “Repeated positive expressive writing significantly increases short-term SWB” cannot be confirmed.

Studies on ER (see, e.g. Tugade et al., 2004; Kross et al., 2005) assume that experiencing positive emotions may contribute to emotion regulation, which allows people to recover from negative events faster by taking a more distant approach to the situation. In the present study, participants in the negative ER condition were instructed to write about a negative event as if the experience is not about them, but about someone else. The results show a higher mean score for SWB after the writing intervention in comparison to the scores before the writing intervention. However, the results are not significant, and therefore the hypothesis “Repeated negative expressive writing (from an ER perspective) significantly increases short-term SWB” cannot be confirmed.

In order to analyze the effects of the neutral writing condition on SWB, the results are linked with studies that investigated the act of writing as an intervention rather than the valence of the writing intervention. Bruner (1992) and Pennebaker and Seagal (1999) published results claiming that constructing a story helps people to make sense of certain events, which helps processing emotions relating to these events. According to Pennebaker and Seagal (1999), this process allows one to remember and to rationally organize experiences, while incorporating thoughts and emotions. They claim that constructing a story facilitates a sense of resolution, which indicates that creating a story works as a tool in order to process emotions, regardless of

the valence of the writing. Additionally, King and Miner (2000), Pennebaker (1997), and Pennebaker and Seagal (1999), suggest that the production of meaningful narrative is of a bigger influence than the valence of the writing, thus the act of writing is more important in increasing positive emotions. In this study, this translated into a neutral writing condition, in which the participant was asked to write about neutral topics in which no specific emotions were touched. It would mean that those who engage in self-perceived meaningful writing and engaging positive thoughts would have beneficial effects on their SWB, regardless of the valence of the writing. The results on SWB are higher after the writing intervention in comparison to the scores before the writing intervention. This seems in line with the claims by King and Miner (2000), Pennebaker (1997), and Pennebaker and Seagal (1999) that the act of creating meaningful narrative (to the writer) increases SWB. However, since the results were not significant, the hypothesis “Repeated neutral writing significantly increases short-term SWB” cannot be confirmed.

Hypothesis H2, predicting that expressive positive writing has a stronger short-term effect on SWB than writing about a negative event (non ER; H2a), but also than a neutral event (H2b), could not be supported either. The results showed a negative effect for both contrasts, indicating that both the neutral and the negative ER condition showed higher scores on SWB after the writing intervention than the positive writing condition. However, these results were not significant and therefore H2a and H2b cannot be confirmed.

As an extra comparison, the negative ER condition was compared with the negative non ER condition to see if there are any beneficial effects of emotion regulation on SWB when writing about a negative event. In the contrast analyses, again small effects were reported which indicates that differences in the effects of both the negative conditions were small ($Mdif = .21$ for

ER, $Mdif = .14$ for non ER). This is enhanced by the non significant values of the contrast, which means that there in this study, emotion regulation did not result in a stronger positive effect on SWB.

Since none of the results are significant, it is important to consider why they turned out this way. The fact that no significant results were found can be explained by the small sample size. In order to get a fairly reliable sample size, the aim was to get a total of 160 respondents. A total of 39 respondents highly jeopardizes the representativity of the study, with low statistical power as a result. Approximately 10 respondents per condition complicates the possibility to (dis)confirm the hypotheses. Future studies should recruit a higher number of participants in order to increase the representativity of the results. Also, the small sample questions the internal and the external validity, and the results are therefore not representing the complete population. In order to counter this issue in future studies, it is important to get a larger sample to increase the likelihood of the results being true for the majority of the population.

If the results would be significant, the hypothesis “Repeated negative expressive writing (from an ER perspective) significantly increases short-term SWB” based on various studies by Pennebaker would be confirmed. Additionally, the claims by Pennebaker et al. (1997), and Pennebaker and Seagal (1999), who stress that the act of writing enhances SWB, could be confirmed as well. The mean scores for SWB after the neutral writing condition increases in comparison to the mean score before the writing intervention. Interestingly, the expectation that positive expressive writing significantly increases SWB could not be confirmed. The present study shows a lower mean score for SWB after the writing intervention in comparison to the score before the writing intervention.

Interestingly, the positive expressive writing intervention does not show an increase in SWB as a result. The positive interventions as obtained within the literature have in common that in order to enhance SWB, these practices should be practiced repeatedly. Perhaps, the three day intervention has not been long enough, and more practice is required in order to notice a positive effect. This substantiates the argument that the intervention should take longer in order to get a more solid result, which is discussed below.

The non-significant results allow disconfirming the hypothesis. For more extensive results, an additional analysis of the data could allow a more in-depth qualitative exploration of the data. The LIWC analysis is a tool to analyse emotional, cognitive and structural components in verbal and written pieces and was developed by Pennebaker et al. (2007). It analyses the text by different categories, such as word count, pronouns, emotional indicators and so on (Pennebaker et al., 2007). For future studies, analysing the data by means of affective categories would generate new data which could be compared between conditions. In a similar study, the affective categories (such as “affective”, “positive emotions”, “negative emotions”, “anger”, “sadness”, “anxiety”) could be further investigated in order to see if there are any possible differences between the conditions. The LIWC categories can be used to search for possible correlations between for example positive word use, and scores for the SWB scale. If, for instance, more positive wording is reported after the negative ER condition in comparison to the negative non ER condition, a relation between the type of wording and the final scores on SWB can be investigated.

Other considerations in future studies are the duration of the study and the points of measurement. Although the original studies required participants to write for four consecutive days for 15 minutes each day, later studies have varied the number of sessions from one to five

days and from 15 minutes to 30 minutes each session. The summary project by Smyth suggests that the longer the study lasts, the more reliable the results (Smyth, 1998). Again, this effect needs to be examined experimentally. However, the studies as mentioned in the introduction were all conducted offline, in a lab environment. The online off the current study could be a limitation for several reasons. First of all, the participants did not have to come to a physical location, but were expected to be self-starting in this study. Also, an online setting allows participants to get distracted, or skip through the time since supervision is missing. In future studies, these errors can be prevented by conducting the data collection in a physical research setting, such as a laboratory. Additionally, multiple measurements throughout the study, for example after each day of writing, provides more insight into the progress of the emotional development after each day and between the different conditions. This could be helpful in order to understand the scores after the intervention.

As was found in the literature research, Diener (1984) states that SWB is subjective, so it resides within one's experience, it includes positive measures, and it entails a global assessment of all aspects in someone's life. Since the scale is a self-report questionnaire, it can be difficult to assess affective states accurately, as people can understate or overstate their affective state at that particular moment (Watson et al., 1988). A reliability analysis provided evidence that the reliability of the SWB scale was questionable ($\alpha = .65$). Usually, a reliability of $\alpha = .70$ or higher is considered acceptable. The two separate scales were chosen partly for their sufficient reliability ($\alpha = .81$ for the DTS scale and $\alpha = .89$ for the PANAS scale). However, as a combined scale for measuring SWB, the reliability did not suffice. In future studies, a new framework in which SWB is calculated through the scores of the items in the two separate scales as separate measurements possibly increases the reliability of the scales. This allows a different test as well,

which should be considered in the design of the study. A larger sample could resolve part of this problem.

This study adds to the existing research by investigating the effects of different valences of writing and analysing the effects of different valences on SWB and that of all valences together in order to see if the act of writing is what matters. Even though the results are not significant and therefore do not confirm what was expected, the results can be a guideline and an inspiration for future researchers who want to further investigate the effects on writing on SWB and want to add to the literature of writing as a form of therapy.

In conclusion, no evidence was found for any of the valences of the expressive writing task to significantly affect a participant's short-term SWB. However, the theory of emotion regulation seems relevant for the writing paradigm since it seems to allow participants to step away from the emotional experience. Therefore, more extensive studies on a non ER negative expressive writing intervention and an ER negative expressive writing intervention should be done in order to contrast the two disciplines and find further evidence on the effects. Even though the results are not significant, it seems that in contrast with the literature, participants do not seem to feel substantially worse right after the INE intervention. Based on the non-significant results, writing (be it positive, negative, or neutral) does not seem to hurt anybody.

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Appendices

Appendix 1 - Survey Delighted Terrible Scale for measuring life satisfaction

Instructions

English

In this section of this questionnaire, we want to find out how you feel about various parts of your life, and life in this country as you see it. Please indicate the emotions you have now, taking into account what has happened in the last year and what you expect in the near future (Andrews & Withey, 2012).

Dutch

Dit onderdeel van de studie is een vragenlijst waarin we je vragen hoe je je over bepaalde onderdelen van jouw leven voelt. Neem de gevoelens die je op dit moment hebt in gedachten, samen met alle gebeurtenissen van het afgelopen jaar en wat je verwacht dat er zal gebeuren in de nabije toekomst (Andrews & Withey, 2012).

1. Hoe voel je je over jouw leven als geheel? (How do you feel about your life as a whole?)
5 = blij, 4 = voornamelijk tevreden, 3 = gemengd, 2 = voornamelijk ontevreden, 1 = verschrikkelijk

2. Hoe voel je je over het leven in het algemeen? (How do you feel about life in general?)
5 = blij, 4 = voornamelijk tevreden, 3 = gemengd, 2 = voornamelijk ontevreden, 1 = verschrikkelijk

3. Hoe gelukkig ben je deze dagen? (How happy are you these days?)

5 = blij, 4 = voornamelijk tevreden, 3 = gemengd, 2 = voornamelijk ontevreden, 1 = verschrikkelijk

4. Hoe voel je je over jouw leven in vergelijking met anderen?

5 = blij, 4 = voornamelijk tevreden, 3 = gemengd, 2 = voornamelijk ontevreden, 1 = verschrikkelijk

Appendix 2 - The PANAS scales for measuring positive and negative affect

English

This scale consists of a number of words that describe different feelings and emotions.

Read each item and then mark the appropriate answer in the space next to that word.

Indicate to what extent you experience this emotion at this moment of time.

Dutch

Deze vragenlijst bestaat uit een aantal woorden die verschillende gevoelens en emoties omschrijven. Lees ieder item en selecteer het passende antwoord in de antwoordmogelijkheden. Doe dit over de gevoelens zoals je ze nu, op dit specifieke moment voelt.

Use the following scale to record your answers:

1 = Nauwelijks of helemaal niet (very slightly/not at all)

2 = Een beetje (a little)

3 = Gemiddeld (moderate)

4 = Nogal (quite a bit)

5 = In sterke mate (extremely)

Geïnteresseerd (Interested) =

Sterk (Strong) =

Bedroefd (Distressed) (-) =

Schuldig (Guilty) (-) =

Opgewekt (Excited) =

Angstig (Scared) (-) =

Teneergeslagen (Upset) (-) =

Vijandig (Hostile) (-) =

Enthousiast (Enthusiastic) =

Zelfverzekerd (Proud) =

Vlug geïrriteerd (Irritable) (-) =

Alert (Alert) =

Beschaamd (Ashamed) (-) =

Vol inspiratie (Inspired) =

Gespannen (Nervous) (-) =

Vastberaden (Determined) =

Aandachtig (Attentive) =

Zenuwachtig (Jittery) (-) =

Energiek (Active) =

Bang (Afraid) (-) =

Appendix 3 - instructions for writing per condition

Text positivity condition (EN)

For a total of three days, I would like you to write your very deepest thoughts and emotions about the most happy and positive experience of your entire life or an extremely important emotional issue that has affected you and your life. In your writing, I'd like you to really let go and explore your deepest emotions and thoughts. As you write, you might tie your topic to your relationships with others, including parents, lovers, friends or relatives; to your past, your present or your future; or to whom you have been, who you would like to be or who you are now. You may write about the same issues or experiences on all days of writing or about different topics each day. You'll be coming back at this three times, and it is your job to write. Some ideas may be very personal, and some may not be. The idea is that once you begin writing, I want you to write continuously. Do not worry about grammar, or typographical errors, I just want you to write until the time is up. Also, you can submit your piece after ten minute, so the submission button will become visible by then. After 15 minutes, your piece will automatically be submitted, so make sure you finish your writing by then.

Text positivity condition (NL)

Voor drie opeenvolgende dagen wil ik je vragen om te schrijven over je diepste gedachten en emoties die te maken hebben met de meest positieve ervaring in je leven, of een heel belangrijke, positieve gebeurtenis. Probeer tijdens het schrijven je zoveel mogelijk te focussen en op te gaan in de gebeurtenis. Je kunt je onderwerp tijdens het schrijven in verband brengen met andere, misschien niet gerelateerde onderwerpen; partners, geliefden, vrienden, familieleden, wie je bent geweest, wie je zou willen zijn, of wie je nu bent. Dat is geen probleem. Je mag alle dagen over

hetzelfde onderwerp schrijven, maar je mag ook iedere dag een ander onderwerp kiezen. Zolang het maar voldoet aan de eis dat het een positieve ervaring is. Je komt in totaal drie dagen hier terug, waar het je taak is om te schrijven. Sommige verhalen kunnen persoonlijk zijn, en sommige niet. Het idee is dat wanneer je begint met schrijven, je dit 10 tot 15 minuten lang ononderbroken doet. Maak je geen zorgen om schrijffouten of grammaticale fouten, het is het belangrijkste dat je blijft schrijven tot de tijd voorbij is. Na 10 minuten verschijnt de submit knop, dan kun je je stuk inleveren. Na 15 minuten wordt je stuk automatisch ingeleverd, dus zorg dat je het dan hebt afgerond.

Text negativity emotion regulation condition (EN)

For a total of three days, I would like you to write about the most negative or traumatic experience of your entire life or an extremely important emotional issue that has affected you and your life. In your writing, I'd like you to take the perspective of the narrator rather than the experiencer. I want you to tell it in a way as if it is not about you, and you are telling someone else about it. You may write about the same issues or experiences on all days of writing or about different topics each day. You'll be coming back at this three times, and it is your job to write. Some ideas may be very personal, and some may not be. The idea is that once you begin writing, I want you to write continuously. Do not worry about grammar, or typographical errors, I just want you to write until the time is up. All of your writing will be completely confidential which means that I will only disclose (parts of) stories where personal details will be removed. After 15 minutes, your piece will automatically be submitted, so make sure you finish your writing by then.

Text negativity condition, emotion regulation perspective (NL)

Voor drie opeenvolgende dagen wil ik je vragen om te schrijven over je diepste gedachten en emoties die te maken hebben met de meest negatieve of traumatische ervaring in je leven, of een heel belangrijke, negatieve gebeurtenis. Tijdens het schrijven wil ik je vragen de positie van de verteller in te nemen, waarin je het verhaal vertelt alsof het niet van jou is en je het uitlegt aan iemand die het verhaal niet kent. Je mag alle dagen over hetzelfde onderwerp schrijven, maar je mag ook iedere dag een ander onderwerp kiezen. Zolang het maar voldoet aan de eis dat het een negatieve ervaring is waar je over vertelt. Je komt in totaal drie dagen hier terug, waar het je taak is om te schrijven. Sommige verhalen kunnen persoonlijk zijn, en sommige niet. Het idee is dat wanneer je begint met schrijven, je dit 10 tot 15 minuten lang ononderbroken doet. Maak je geen zorgen om schrijffouten of grammaticale fouten, het is het belangrijkste dat je blijft schrijven tot de tijd voorbij is. Na 10 minuten verschijnt de submit knop, dan kun je je stuk inleveren. Na 15 minuten wordt je stuk automatisch ingeleverd, dus zorg dat je het dan hebt afgerond.

Text negativity condition (EN)

For a total of three days, I would like you to write about the most negative or traumatic experience of your entire life or an extremely important emotional issue that has affected you and your life. In your writing, I'd like you to really let go and explore your deepest emotions and thoughts. As you write, you might tie your topic to your relationships with others, including parents, lovers, friends or relatives; to your past, your present or your future; or to whom you have been, who you would like to be or who you are now. You may write about the same issues or experiences on all days of writing or about different topics each day. You'll be coming back at this three times, and it is your job to write. Some ideas may be very personal, and some may not

be. The idea is that once you begin writing, I want you to write continuously. Do not worry about grammar, or typographical errors, I just want you to write until the time is up. Also, you can submit your piece after ten minute, so the submission button will become visible by then. After 15 minutes, your piece will automatically be submitted, so make sure you finish your writing by then.

Text negativity condition (NL)

Voor de komende drie opeenvolgende dagen willen we je vragen om te schrijven over je diepste gedachten en emoties die te maken hebben met de meest negatieve ervaring in je leven, of een heel belangrijke, negatieve gebeurtenis. Probeer tijdens het schrijven je zoveel mogelijk te focussen en op te gaan in de gebeurtenis. Je mag je onderwerp tijdens het schrijven in verband brengen met andere, misschien niet gerelateerde onderwerpen; partners, geliefden, vrienden, familieleden, wie je bent geweest, wie je zou willen zijn, of wie je nu bent. Dat is geen probleem. Je mag alle dagen over hetzelfde onderwerp schrijven, maar je mag ook iedere dag een ander onderwerp kiezen. Zolang het maar voldoet aan de eis dat het een negatieve ervaring is. Je komt in totaal drie dagen hier terug, waar het je taak is om te schrijven. Sommige verhalen kunnen persoonlijk zijn, en sommige niet. Het idee is dat wanneer je begint met schrijven, je aan een stuk doorgaat.

Text neutral condition (EN)

For a total of three days, I would like you to write about different topics that will be assigned to you. On the first day, your topic will be a description of the room that you are in. The second day, you will talk about the outfit that you are wearing. The third day, you will explain your

morning routine. In your writing, I'd like you to write what you see or what you remember, in as much detail as possible. As you write, you might tie your topic to seemingly unrelated objects or topics, but that is fine. Please try to stick to objectiveness as much as you can, without drifting away. You'll be coming back at this for three consecutive days, and it is your job to write. The idea is that once you begin writing, I want you to write continuously. Do not worry about grammar, or typographical errors, I just want you to write until the time is up. After 15 minutes, your piece will automatically be submitted, so make sure you finish your writing by then.

Text neutral condition (NL)

Voor drie opeenvolgende dagen willen we je vragen om te schrijven over verschillende onderwerpen die je krijgt toegewezen. Vandaag is je opdracht een omschrijving te geven van de ruimte waar je op dat moment bent. Probeer tijdens het schrijven te vertellen wat je ziet en wat je weet. Je kunt je onderwerp tijdens het schrijven in verband brengen met andere, misschien niet gerelateerde onderwerpen, dat is geen probleem. Het is belangrijk dat je zo objectief mogelijk blijft. Het idee is dat wanneer je begint met schrijven, je dit 10 tot 15 minuten lang ononderbroken doet. Maak je geen zorgen om schrijffouten of grammaticale fouten, het is het belangrijkste dat je blijft schrijven tot de tijd voorbij is. Na 10 minuten verschijnt de submit knop, dan kun je je stuk inleveren. Na 15 minuten wordt je stuk automatisch ingeleverd, dus zorg dat je het dan hebt afgerond.

Klik op onderstaande button om te starten.

Appendix 4 - Informed consent form

Tilburg University

Informed Consent to Participate in Research

Information letter for participants from the Participant Pool

Titel: Schrijven over emotionele ervaringen.

Achtergrond en Inleiding: Het communiceren van emoties via tekst heeft verschillende effecten op de gezondheid. Dit gaat op voor allerlei verschillende ervaringen, zowel positief als negatief.

Doel: Het doel van de studie is om te onderzoeken wat de effecten zijn van het opschrijven van je emotionele ervaringen.

Taak en duur: De taak voor de deelnemer is om een survey in te vullen, en over een persoonlijke ervaring te schrijven op basis van gerichte instructies in de opdracht. Wat je bij deze opdracht opschrijft zal niet worden gelezen door de onderzoekers. Er zal ook demografische informatie worden verzameld, namelijk leeftijd en geslacht. Het onderzoek duurt ongeveer 15 minuten per keer, voor vijf opeenvolgende dagen.

Voor- en nadelen van de deelname: Participanten zullen door deelname bijdragen aan belangrijk wetenschappelijk onderzoek en daarmee zeer waardevol zijn. Daarnaast zal deelname aan dit onderzoek een totaal van 2 credits opleveren in het persoonlijke account op van de Participant Pool. Participanten wordt gevraagd om aan een persoonlijke gebeurtenis te beschrijven, iets waar

gevoelens bij kunnen komen kijken. Dit kan, naast een verbetering in algemeen welzijn, een aanzienlijke emotionele belasting veroorzaken. Deelnemers kunnen er echter te allen tijde voor kiezen zich terug te trekken uit het onderzoek.

Dataverzameling en rechten van de deelnemers: De teksten die zullen worden opgesteld door de deelnemers worden gezien als gevoelige informatie. De teksten zullen door een programma worden geanalyseerd (LIWC), maar zullen niet inhoudelijk gelezen worden door de onderzoekers. Alle gegevens worden zorgvuldig behandeld, alleen de onderzoekers en begeleiders hebben toegang tot de onbewerkte gegevens. Toestemming om de verstrekte gegevens te gebruiken geldt tot het einde van deze studie. Alle geanonimiseerde gegevens worden 10 jaar lang bewaard. De geschreven teksten zullen niet herleidbaar worden gemaakt, zodat de auteur niet herkenbaar is. De geschreven teksten worden verwijderd uit de data na de analyse. Deelname aan deze studie is vrijwillig. Deelnemers kunnen zich op ieder moment uit de studie terugtrekken zonder negatieve gevolgen. Voor deelname dien je minimaal 18 jaar te zijn.

Contact: Als je vragen of opmerkingen hebt voor de onderzoekers, neem dan contact op met:

Benthe Dibbets (b.dibbets@tilburguniversity.edu) of Isabelle Knaap

(i.knaap@tilburguniversity.edu). Deze studie is goedgekeurd door de TSHD Research Ethics and Data Management Committee. Voor eventuele opmerkingen of klachten over dit onderzoek kun je ook contact opnemen met de Research Ethics and Data Management Committee van Tilburg School of Humanities and Digital Sciences via tshd.redc@tilburguniversity.edu

We nodigen je uit voor deze studie, die vijf dagen achter elkaar zal plaatsvinden. Deelnemen is volledig vrijwillig, en kan op ieder moment door de deelnemer worden stopgezet.

Als je klaar bent om deel te nemen, klik dan op de “Ja, ik geef toestemming” knop om te starten.

Information letter for other participants

Titel: Schrijven over emotionele ervaringen.

Achtergrond en Inleiding: Het communiceren van emoties via tekst heeft verschillende effecten.

Dit gaat op voor allerlei verschillende ervaringen, zowel positief als negatief.

Doel: Het doel van de studie is om te onderzoeken wat de effecten zijn van het opschrijven van je emotionele ervaringen.

Taak en duur: De taak voor de deelnemer is om een survey in te vullen, en over een persoonlijke ervaring te schrijven op basis van gerichte instructies in de opdracht. Wat je opschrijft zal niet zichtbaar zijn voor de onderzoekers. Er zal ook demografische informatie worden verzameld, namelijk leeftijd en geslacht. Het onderzoek duurt ongeveer 15 minuten per keer.

Voor- en nadelen van de deelname: Participanten zullen door deelname bijdragen aan belangrijk wetenschappelijk onderzoek en daarmee zeer waardevol zijn. Daarnaast verloten wij onder de deelnemers van dit onderzoek tweemaal een cadeaubon van bol.com t.w.v. €10,-. (hiervoor dien je aan het einde van de eerste survey aan te geven dat we jouw e-mail mogen gebruiken om je hierover op de hoogte te stellen). Participanten wordt gevraagd om aan een persoonlijke

gebeurtenis te beschrijven, iets waar gevoelens bij kunnen komen kijken. Dit kan, naast een verbetering in algemeen welzijn, een aanzienlijke emotionele belasting veroorzaken. Echter, het wordt verwacht dat deze emotionele belasting alleen op korte termijn zal bestaan. Deelnemers kunnen er echter te allen tijde voor kiezen zich terug te trekken uit het onderzoek.

Dataverzameling en rechten van de deelnemers: De teksten die zullen worden opgesteld door de deelnemers worden gezien als gevoelige informatie. Er zal geen persoonlijke informatie worden gebruikt in de analyse. Alle gegevens worden zorgvuldig behandeld, alleen de onderzoekers en begeleiders hebben toegang tot de onbewerkte gegevens. Toestemming om de verstrekte gegevens te gebruiken geldt tot het einde van deze studie. Alle geanonimiseerde gegevens worden 10 jaar lang bewaard. De geschreven teksten zullen niet herleidbaar worden gemaakt, zodat de auteur niet herkenbaar is. Deelname aan deze studie is vrijwillig. Deelnemers kunnen zich op ieder moment uit de studie terugtrekken zonder negatieve gevolgen.

Contact: Als je vragen of opmerkingen hebt voor de onderzoekers, neem dan contact op met: Benthe Dibbets (b.dibbets@tilburguniversity.edu) of Isabelle Knaap (i.knaap@tilburguniversity.edu). Deze studie is goedgekeurd door de TSHD Research Ethics and Data Management Committee. Voor eventuele opmerkingen of klachten over dit onderzoek kun je ook contact opnemen met de Research Ethics and Data Management Committee van Tilburg School of Humanities and Digital Sciences via tshd.redc@tilburguniversity.edu

We nodigen je uit voor deze vijfdaagse studie, die vijf dagen achter elkaar zal plaatsvinden.

Deelnemen is volledig vrijwillig, en kan op ieder moment door de deelnemer worden stopgezet.

Als je klaar bent om deel te nemen, klik dan op de “Ja, ik geef toestemming” knop om te starten.

Appendix 5 - instructions

Introductie

Tijdens dit onderzoek zal je gedurende vijf dagen een aantal vragen invullen en meedoen aan een schrijfoopdracht. Vandaag (dag 1 van de 5) beantwoord je vragen over jezelf en over hoe je in het leven staat. Op dag 2, 3 en 4 doe je mee aan een schrijfoopdracht waarbij je schrijft over een gebeurtenis, hier krijg je later duidelijke instructies over. Je maakt dan verder geen vragenlijsten. Op de laatste dag (dag 5 van de 5), beantwoord je opnieuw een aantal vragen. In onze analyse zullen we je verhaal globaal bekijken, maar we zullen niet in detail analyseren wat je hebt opgeschreven.

Wanneer moet ik iets invullen?

Elke dag wordt duidelijk aangegeven wanneer je klaar bent met de opdrachten voor die dag. Je krijgt de volgende ochtend een email die je terugstuurt naar de pagina waar je bent gebleven. Vanaf daar kan je beginnen aan de volgende dag. Mocht je de mail niet ontvangen hebben, dan kan je via de link die je eerder hebt ontvangen verder met het onderzoek.

Ben je een dag vergeten?

Ben je een dag vergeten? Dan kun je gewoon verder waar je gebleven was. Het is dan wel belangrijk dat je zo snel mogelijk een mail naar b.dibbets@tilburguniversity.edu en i.knaap@tilburguniversity.edu.

Taal

De gehele studie is in het Nederlands.

Appendix 6 - debriefing

Debriefing form for participants

Het doel van deze studie is om te vergelijken in hoeverre schrijven over ervaringen kan helpen om je mentale gezondheid te verbeteren. In de studie waarin je zojuist hebt meegedaan, kreeg je de vraag om over een positieve, negatieve, of neutrale ervaring te schrijven. Dit wordt valentie genoemd. Het effect van schrijven op je mentale gezondheid wordt al lang onderzocht door wetenschappers. Er zijn studies die aantonen dat het schrijven over een negatieve ervaring een positieve invloed heeft op je mentale gezondheid (Pennebaker, 1997). Ook schrijven over positieve ervaringen heeft positieve effecten op hoe je je voelt (Fredrickson, 2000). Tot slot zijn er ook aanwijzingen dat het schrijven zelf het positieve effect veroorzaakt, ongeacht van een positieve of negatieve valentie (Pennebaker & Seagal 1999). Bestaand onderzoek levert dus gemengde resultaten, en bovendien zijn de meeste onderzoeken gericht op de effecten op de lange termijn. Deze studie focust zich op de korte termijn effecten van schrijven op de mentale gezondheid. De tekst die je geschreven hebt ging over een ervaring met, afhankelijk van de conditie waarin je bent ingedeeld, een bepaalde emotie. We hebben je mentale gezondheid voorafgaand aan het schrijven en na het schrijven met elkaar vergeleken, en gekeken of zowel het schrijven over een positieve ervaring, een negatieve ervaring, en een neutrale ervaring deze heeft verbeterd. Ook hebben wij gekeken of de ene opdracht misschien een sterker effect heeft op iemands mentale gezondheid dat de andere opdracht. Daarnaast hebben we voor de negatieve conditie gebruik gemaakt van een 'emotie regulatie' model, waardoor we de emotie afzwakken en we je vanuit een meer rationeel perspectief over de ervaring lieten vertellen.

Mocht je je na het lezen van deze debriefing toch terug willen trekken uit dit onderzoek, stuur dan een mail naar b.dibbets@tilburguniversity.edu

Geef je toestemming om je verstrekte gegevens te gebruiken voor toekomstig onderzoek?

- Ja
- Nee