

MASTER

Interventions and the influence upon positive affect and performance at work

Koonen, R.J.M.

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Eindhoven University of Technology
Human Performance Management Group
Department of Industrial Engineering & Innovation Sciences

Interventions and the influence upon positive affect and performance at work

by

Koonen, R.J.M.

BSc Industrial Engineering – TU/e
Student identity number 0662662

In partial fulfillment of the requirements for the degree of

Master of Science
in Operations Management and Logistics

Supervisor: Prof. dr. Evangelia Demerouti
Second Assessor: Dr. Pascale Le Blanc

Preface

This study is one of the requirements for graduation in the master Operations Management and Logistics at the Human Performance Management Group. The study is conducted in Eindhoven, at the University of Technology (TU/e). My interest for this study, aimed at the happy worker, has its roots in my previous research. Here I first came in contact with the possibilities to stimulate performance just by being happy. This proved to be a starting point for developing methods to actively stimulate positive affect. Of which the final goal would be to reflect this increase in happiness in the performance of the employee.

This study is thereby aimed at the development of a positive psychology intervention to enhance positive affect. This is done by stimulating several mechanisms that have been found to stimulate positive affect. Positive psychology interventions seem to be very suitable for this, since one of its central goals is to enhance positive emotions. Participating in these interventions should benefit the happy worker to flourish and deliver an outstanding performance. This study thereby contributes to the field of positive psychology interventions by addressing work-related outcomes. Positive psychology interventions studies focusing on performance outcomes are scarce and the findings of this study provides a good starting point

This paper represents the study I have done, its theoretical background, methods and its results. Yet this is only a small part of the academic work, since the measurement tools and the comprehensive literature review to write this paper is not included. Therefore I am glad to present this article as the final version of this project. It contains a variety of information, thoroughly summarized, to develop clear hypotheses. Testing the hypotheses and working through the data was thereby an exhaustive yet challenging task. Whether or not I succeeded in developing these methods to actively stimulate happiness and performance can be read in the following pages. Enjoy.

Robin Koonen.
July. 2014

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First and foremost I would like to thank my first supervisor and mentor Prof. Dr. Evangelia Demerouti. The development of this thesis not possible without the clear supervision and insightful advice. Several weekly meetings were undertaken to discuss the progress of my research and to provide me with information, additional insight and feedback. I even had to confront her with my work during her holiday, which she gladly did so. Thank you for everything.

I would also like to thank Dr. Pascale Le Blanc, my second supervisor, for being there when needed and providing me with crucial concrete feedback in the final stages of my work. Even with (nearly) the entire faculty being on a holiday she managed to provide a helping hand when necessary.

In addition I would also like to thank all the people who participated in my research. Friends and family that helped me out whenever I was struggling to find additional participants. A special thanks thereby goes to the Clinical Pathology department of the St. Elisabeth in Tilburg. They allowed me to present my research proposal towards their department, and many have successfully participated afterwards. Therefore thanks Marilyn van Helvert for participating in the research and distributing my weekly reminders for participation in your department. Spirit Innovative Technologies is thereby another company that allowed me to demonstrate my research proposal, which also resulted in several employees participating in my research. Thanks for this opportunity and especially thanks to Carolien Brands for setting up the possibilities to present my work and distributing the weekly reminders.

Finally my thanks go to my parents for supporting me during the course of my student life. I have never had any doubt to bring my student life to a good end, and neither did you.

Robin Koonen.
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! Remark

This thesis is written as a scientific paper, starting on the next page. For additional insight in the measurement tools, the development of the interventions and comprehensive information regarding the theoretical background I refer to my Research Proposal, its Appendix and the Literature Review.

The happy worker: An intervention study to actively enhance positive affect to stimulate performance at work

Eindhoven University Of Technology

By R.J.M. Koonen

Abstract

In a five weeks longitudinal study ($N=40$) the impact of an intervention, consisting out of positive work events, capitalization and a positive work reflection was tested. The research design randomly assigned the participants in two groups. The intervention group received the aforementioned interventions and the control group was given a no-treatment condition. The results of a repeated measure ANOVA showed that the interventions were boosting positive affect, although marginal significant. Evaluating the elements of the intervention separately indicated that positive work reflection increased in effectiveness towards boosting positive affect, whenever the participants exerted effort towards the assignment. Moreover, it was found that the positive change in subjective happiness, related to participation in the intervention group, significantly increased contextual performance. Some elements of the interventions thereby were found to be effective in increasing positive affect and consequential work-related outcomes.

Key words: Affective events theory, capitalization, positive affect, positive psychology interventions, positive work reflection, work performance

Introduction

Negative events in life and at work happen. The field of industrial and organizational psychology has been very persistent into developing knowledge regarding those events. Among others, their coping processes and consequences for affect, well-being, work-related stress, depression and burnout have been heavily researched (e.g. Billings & Moos, 1981; Burke, 1994; Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986; Frattaroli, 2006; Nolen-Hoeksema, 1991; Seery, Silver, Holman, Ence & Chu, 2008; Stanton & Low, 2012). However, the consequences of positive work events and how to cope with these events have not been getting equal attention. The study therefore aims to shed light upon several processes following positive work events. The goal of this study is thereby to stimulate positive work events and their social- and cognitive processes such that positive affect is enhanced. This is done by developing positive psychology interventions that increase positive affect and happiness in the working environment. Enhancing positive affect is one of the central goals of positive psychology interventions. Following this increase in positive affect this should be reflected in the work performance. The relationship between positive affect and different performance aspects at work has its relevance within the field of organizational psychology. This can be task-, contextual or creative performance. The intervention should indirectly contribute towards an increase in performance at work. In this study two groups, an intervention- and a control group will be compared. The control group will have no treatment, whereas the intervention group is participating in the intervention. The participants were provided with the intervention and questionnaires for this study on paper or online, depending on their preference of participation (i.e. by means of a booklet or the web-based questionnaires). It is expected that the participants in the intervention group will show an increase in their work performance following an increase in positive affect.

Therefore this study looks out to contribute to the field of positive work events by developing methods to stimulate the benefits to be derived from these events.. Thereby this study should enrich our understanding on how to get a hold on the good things at work and ensure the duration of their (positive) effects, such as an increase in positive affect. Moreover, the intervention effects will be related to different aspects of performance (i.e. task performance, contextual performance and creative performance). Eventually, this should result in the identification of possibilities to actively enhance positive affect and work-related performance.

Theoretical Background

Positive affect

In the domain of positive psychology positive affect is a frequently used term, which relates to positive emotions. Positive affect are positive emotions that are caused following a specific event or experience (Frijda, 1993). Positive affect is often associated with happiness. Happiness is defined as frequent positive affect, high life satisfaction and infrequent negative affect (Diener, 1984). Positive affect in itself is beneficial for various reasons, some more practically oriented others more socially oriented. In a meta-analysis by Lyubomirsky, King and Diener (2005) various benefits of positive affect are summarized. Positive affect is beneficial in terms of: i) more sociability, ii) more altruism, iii) increased liking of self and others, iv) more pro-social and healthy behavior, v) better conflict resolution skills, vi) original thinking, vii) higher supervisors ratings of one's creativity, viii) fulfilling productive work, and last but not least ix) more success in work, relationships and their health.

Positive psychology interventions

As positive affect is able to influence performance aspects at work (Baron, 1990; Isen, 1987; Lyubomirsky, King, & Diener, 2005; Williams & Shiaw, 1999), this research aims to actively stimulate positive affect. Enhancing positive affect is one of the central goals of positive psychology interventions. More concretely positive psychology interventions are methods or activities that should foster positivity in its broadest sense; i.e. feelings, behaviour and cognition (Sin & Lyubomirsky, 2009). There have been several studies that showed the effectiveness of positive psychology interventions towards sustainable increases in happiness (Fordyce, 1983; Emmons & McCullough, 2003; Seligman, Steen, Park & Peterson, 2005; Sheldon & Lyubomirsky, 2006; Lyubomirsky, Dickerhoof, Boehm & Sheldon, 2011; Ouweneel, Le Blanc & Schaufeli, 2013b). Following these findings there seems to be some overarching principles regarding what is important to influence happiness. Positive psychology interventions that are found to be effective counteract hedonic adaptation towards positive aspects of life, such that positive events in life are appreciated and are not regarded as common. Following this notion the intervention should be original, such that one does not adapt to the activities that initiate the positive influence of the intervention. Furthermore positive psychology interventions should shift one's focus towards positive experiences, such that negative thoughts get less attention. Positive psychology interventions thereby aim to

counteract humans' natural tendency to give more thought to negative occurrences (Taylor, 1991). As a final remark positive psychology interventions seem to be more effective when there are several pathways to achieve happiness. Pathways thereby refer to the possible activities and processes the intervention provides as a mean to achieve happiness. Thus the possibilities to include social interaction in the intervention must not be overlooked. Social interaction is a powerful source of positive affect because of the social resources (i.e. social bonds), positive experiences and appreciation it can provide (Emmons & McCullough, 2003; Otake et al. 2006). Positive psychology interventions that can generate more frequent positive affect by influencing cognitive and social actions thereby provide sources of positive affect from several directions.

In this study, the effects of a positive psychology intervention consisting of three components on positive affect will be tested using a quasi-experimental design. This intervention is aimed upon three methods that either improve the frequency of positive affect experienced, or the amount of positive affect following an experience at work. Therefore the frequency of events that trigger positive work events is stimulated, as are certain social- and cognitive processes that influence how to process such a positive experience. Some of these methods to stimulate those processes are delineated from previous successful positive psychology interventions, whereas others are developed based upon the surrounding literature. A precise description of the components and mechanisms of the intervention is elaborated upon in in a further section. For now, based on previous studies on the effectiveness of positive psychological interventions to enhance positive affect (Sheldon & Lyubomirsky, 2006; Ouweneel, Le Blanc, & Schaufeli, 2013a) this positive psychology intervention is also expected to enhance positive affect. Therefore the following hypothesis is established:

Hypothesis 1: The participants in the intervention group will experience a higher level of positive affect than the participants in the control group [after participation to the intervention]

Positive affect and work performance

On top of the benefits of positive affect for one's health and social relationships, work performance also benefits from employees that are high in positive affect (Baron, 1990; Isen, 1987; Lyubomirsky, King, & Diener, 2005; Williams & Shiaw, 1999)

Work performance is often said to have two dimensions (Campbell, 1990; Borman & Motowildo, 1997): contextual- and task performance. Task performance is all about contributing to the organization in the formally required way (Campbell, 1990). This would indicate being present during office hours, completing the daily tasks or other activities that are formally prescribed. Not every type of task benefits to a similar extent from positive affect in their task performance (Staw, Sutton and Pelled, 1994; Lyubomirsky et al., 2005). For example tasks that are associated with critical thinking benefit from negative affect (Melton, 1995). Tasks in which effortless information-processing strategies are important, benefit from positive affect (Taylor, 1991). Complex tasks in which improved decision making is required also benefit from positive affect (Staw & Barsade, 1993). Therefore the implication of positive affect on task performance is inconclusive and task dependent.

Contextual performance, often referred to as organizational citizenship behavior, is related to aspects of the job that are not formally required but are beneficial for one's performance at work (Borman & Motowildo, 1997). Contextual performance provides value to the organization, e.g. in terms of corporations' organizational climate and social environment, and can take many forms. Core however to this type of performance is that there is no direct reward or contractual obligations for employees to execute this activities. Happy people tend to show a higher level of contextual performance (Williams & Shaw, 1999). Positive affect significantly contributes to contextual performance, which can be explained by one's desire to maintain a good mood by helping others. Moreover a longitudinal study of Staw, Sutton and Pelled (1994) even showed an increase in support by co-workers and supervisors in exchange for positive affect, indicating a compensation for showing positive affect towards one's co-workers. Positive affect can thereby not only induce an increase in one's own contextual performance but also that of others.

A third aspect of performance that is not always formally recognized, but is crucial in various jobs, is creativity. Creativity relates to the expression of new, original and useful ideas (Amabile, 1998; De Dreu, Nijstad & Baas, 2010). Creativity is often undermined in organizations, since it requires certain prerequisites that are not met. Such as a psychologically safe communication climate, organizational support, resources (i.e. time and money) and autonomy (Gibson & Gibbs, 2006; Amabile, 1998). Positive affect influences creativity and the associated creative performance. This is evident since positive affect influences the process of categorization: the process of associating seemingly unrelated aspects. Categorization is one of the mechanisms that are core for creativity (Isen, 1984). Inducing positive affect is found to have a positive impact upon this mechanism. Strengthening the process of categorization allows employees to generate more combinations between stimuli, thus processing more cognitive input since there were more feasible combinations to consider. Consequently one can conclude that positive affect induces the ability to see relatedness, thereby increasing the creative problem solving of a task (Isen, 1987).

An important framework whenever discussing positive affect is the Broaden and Build Theory of Fredrickson (2004). The framework also explains a linkage between positive affect and creativity. The broaden and build theory states that positive emotions, that follow from positive events, enhance the cognitive abilities and awareness of an employee. This will increase ('broadening') the persons thought and action repertoire, thus the creative performance of employees. This phenomenon of broadening and build also contributes a more positive state of mind in the long term. A positive state of mind, allows for more positive affect in the future: it inspires a broadened view, thereby seeing more positive aspects in next events and being more resilient in coping with (negative) events (Fredrickson & Joiner, 2002). Moreover a positive event will generate more positive affect by already approaching the event optimistically as opposed to when one is low on positive affect (Fisher, 2002; Grandey, 2002). The broaden and build theory thereby addresses the building up of resources that can be used in coping with subsequent events (Bono et al. 2013). Depletion of these resources is less likely to occur whenever one has various sources of positive affect to recall from, and a broadened view to observe positive stimuli with.

With respect to the dimensions of task- and contextual performance the broaden and build theory has not been applied as extensively. The broaden and build theory addresses enhanced cognitive abilities, a broadened thought process and the build-up of personal

resources due to positive emotions (Fredrickson, 2004). This build-up of personal resources, such as psychological resilience and optimism, could be beneficial for contextual and task-performance. For example more resources to deal with setbacks, an optimistic attitude and increased strength to bounce back benefits adaptability and engagement at work which in turn strengthens work performance (Bakker & Demerouti, 2008). Moreover the urge for self-development and exploration, triggered by the broadened thoughts-action repertoire (Fredrickson, 2001), could be beneficial for lasting increases in task performance by being more effective in performing tasks in the future. The broadened view could also allow the employees to observe and experience more positive stimuli which possibly influences employees' helping behavior or other activities that provide value to the organization (e.g. social environment). This could enhance employees' contextual performance by lowering the barrier to identify and react upon perceived possibilities.

Several mechanisms and a theoretical lens, by means of the broaden and build theory, have been provided by which positive affect benefits performance at work along its three dimensions. Although the implication of positive affect upon task performance remains to be task dependent, the consensus is that positive affect benefits performance at work. In this study an intervention is developed that stimulates positive affect and happiness in the working environment. The interventions thereby should indirectly contribute towards an increase in performance at work. This is investigated by a research design in which two groups, an intervention- and a control group will be compared. The control group will have no treatment, whereas the intervention group is participating in the intervention. It is expected that the participants in the intervention group will show an increase in their work performance following an increase in positive affect.

Hypothesis 2: Changes in positive affect over time (due to the intervention), will be positively related to increases in work performance (task, contextual, and creative)

The Affective Events Theory

Work events are a central concept in the Affective Events Theory (AET), developed by Weiss and Cropanzano in 1996. This theory puts the scope on work events and its association with emotions.

Work events occur on a daily basis, some more noticeable or extreme than others. The work environment can influence the extent, type and amount of work events taking place. Works events are experienced by persons, however not every person handles these in a similar manner. Personal dispositions play a role in the emotions one experiences during such an event. The emotions occurring after an event can be widespread and depend on one's personal dispositions, the type of event and the consequential impact of the event on the person. The person appraises what occurred, and emotions follow. Essential is that these emotions are a reaction on an event (Frijda, 1993). Following the manner in which this person reacts on the event can affect their behavior and consequential their performance and satisfaction with the work they are undertaking.

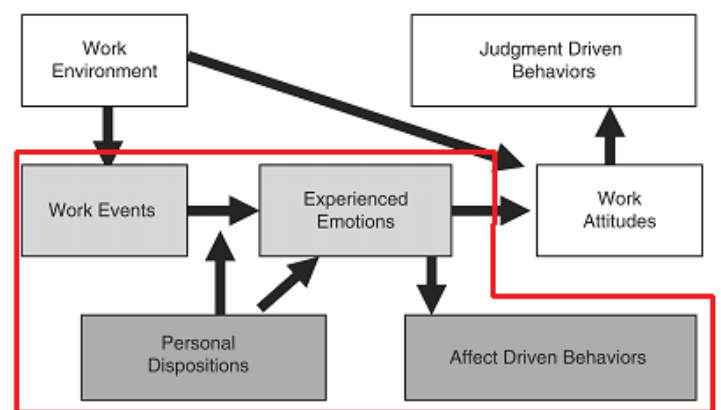


Figure 1: Graphical representation of the AET

This explanation of the impact of work events and their associated emotions highlights some importance points for this study. i) Work events impact one's behavior ii) Positive work events generate positive affect that steer this behavior. (iii) For this behavior to be beneficial it has to match the preferred work behavior (Weiss & Cropanzano, 1996). The AET proposes that the affective behaviors, such as altruism or other forms of pro-social behavior, following work events are likely linked to performance given they do: i) Not take focus and resources away from the job ii) The affective driven behavior matches the requirements in fulfilling working behavior.

One critique in applying this AET framework is the limitation in research between the AET and performance aspects of work. Addressing performance aspects as a consequence of experiencing events at works seems like a logical step forward (following relating positive work events towards work attitudes and behavior). To fill this gap in the literature previous research (Koonen, 2012) indicated significant relationships between positive work events and dimensions of job performance. Task- and creative performance significantly benefit from positive work events (Koonen, 2012). This relationship is found to be mediated by the associated positive affect with these events, such that positive work events generate positive affect that will influence these aspects of performance. Surprising about these results was that contextual performance was not found to be significantly related towards positive affect, but task performance was, whereas the theory would predict the contrary. Whereas an increase in creative performance was expected based upon the broaden and build theory, an increase in task performance was surprising. This could possibly be explained by sample characteristics, more specifically work characteristics. The participants in this research were mainly high educated (67%) and were working in teams (95%). These properties make it plausible that the formal requirements they generally had at hand would benefit since information processing strategies (associated with positive affect) are often necessary for team- and non-routine work. Nevertheless this research confirms the expectations of a relationship between work performance and positive affect within the AET framework.

Positive work events result in positive affect (Ilies, Keeney, & Scott, 2011; Koonen, 2012). It would be interesting to see whether the occurrence of positive events and consequently of positive affect can be enhanced. For this purpose a positive psychology intervention will be developed since such an intervention is aimed at enhancing positive affect. The designed intervention will be aimed at increasing the occurrence of positive work

events, thus allowing for more frequent positive affect. Evaluation of several studies that identified positive work events resulted in the following categories of positive work events that frequently occur: Receiving recognition, achievement of work or goals, acts of colleagues and social activities and interactions (Basch & Fisher, 1998; Bono et al., 2013; Grandey et al. 2002; Koonen, 2012; Maybery, Jones-Ellis, Neale, & Arentz., 2006). Within these categories achievement and recognition are the most common events to generate positive affect (Fisher, 2002). Thus, these categories of positive work events indicate occurrences at work that can be stimulated. For example co-workers can compliment each other more often or one can show intentions to be more socially interactive at work. The developed intervention stimulates the behaviors that are linked with positive events and positive affect in previous research. In addition the intervention can elicit the fulfilment of activities (such as providing feedback or a social talk) such that colleagues are provided with a positive experience at their work. This should provide more frequent positive affect, thus happiness, for the participants in this intervention.

Hypothesis 3: The intervention aimed at increasing the occurrence of positive work events will increase the amount of positive work events experienced by the intervention group, compared to the control group [after participation to the intervention]

Capitalization

Capitalization is the process of sharing, specifically sharing the positive experiences with others (Langston, 1994). It is human nature to share positive experiences (Gable, Reis, Impett, & Asher, 2004; Rimé, Mesquita, Philippot, & Boca, 1991), therefore capitalization is a form of behavior that occurs naturally. It allows a person for opportunities to maximize the benefits (s)he can extract after experiencing a positive event. In previous research capitalization has been associated with: i) A higher level of satisfaction ii) Increase of positive emotions and well-being iii) Building of social resources (such as trust and support) iv) Maximizing their importance and memorability of the positive event (Gable et al, 2004; Ilies et al., 2011; Reis, Smith, Carmicheal, Caprariello, & Tsai, 2010; Langston, 1994; Hicks and Diamond, 2008). Regarding capitalization and work performance capitalization was found to be significantly correlated with contextual- and creative performance (Koonen, 2012). Except with the aforementioned research this topic (performance at work) has not been a focus point in the present literature surrounding capitalization. Capitalization was mainly discussed in its

relationship towards social relationships and well-being (Gable & Reis, 2001; Gable et al., 2004; Gable, Gonzaga, & Strachmann, 2006; Langston, 1994; Reis et al., 2010)

Several explanations for the positive benefits related to capitalization have been provided in the literature. Sharing a positive experience increases its memorability. By sharing the event one re-lives the event and the emotional experience (Gable et al., 2004). In addition it allows the person sharing to obtain verification of the event by the listener which can increase one's positive affect and satisfaction (Ilies et al., 2011; Gable et al. 2004). Capitalization allows for social resources to be built since the sharing of the positive events can stimulate social interactions. And when done right, towards certain individuals and eliciting constructive responses, it can provide increased levels of trust and support (Gable & Reis, 2001; Reis et al. 2010). Higher levels of satisfaction and well-being are consequently caused by feelings of appreciation, validation, happiness, pride and stronger memorability of the positive events in life whenever these events are shared (Ilies et al., 2011; Gable 2004; Beach & Tesser, 1995). Increase of positive emotions is established according to a similar reasoning, where the pride with the occurred event, the appreciation and reliving the event increase the positive emotions associated with the experience (Gable et al., 2004; Reis et al. 2010). However these benefits of capitalization do not arise naturally, they are strongly dependent upon the enthusiasm and expressiveness of the person one shares the positive experience with (Langston, 1994; Gable et al 2004; Gable et al., 2006; Reis et al 2010). Therefore it is of major importance to closely select the people to share with. It is shown that the people one shares events with are very likely to be one's partner or close relatives, people one feels comfortable with (Rimé et al. 1991). This allows the event to be shared without having to refrain one's feelings and obtaining an active response from the listener.

Capitalization is introduced as a construct that influences positive affect by sharing a positive work event with someone else. Increasing the level of capitalization of an individual thereby could elicit more favorable responses to positive work events, thus increasing the positive affect following a positive work event. Whenever there is an opportunity to increase one's positive affect after a positive experience, one should anticipate upon this by the process of capitalization (Langston, 1994). Therefore this process to cope with positive work events should not be neglected. Positive psychology interventions influence positive affect and could thereby also be applied to influence capitalization.

This intervention will be aimed at maximizing the significance of a positive work event to itself, as deemed important for capitalization and its effectiveness (Langston, 1994; Reis et al., 2010). This increase of significance of the event will be achieved by stimulating the sharing of the positive event with others. By letting the intervention focus on maximizing the significance of the positive event to itself the person will i) Obtain a high level of satisfaction ii) Obtain a strong increase of positive emotions iii) Build a strong base of social resources iii) Build strong memorability of this event when work is less pleasant. Therefore this intervention should contribute to positive affect by influencing the mechanism by which positive work events can be processed.

Hypothesis 4: The intervention aimed at increasing the level of capitalization will increase the capitalization and level of positive affect within the intervention group, compared to the control group [after participation to the intervention]

Positive Work Reflection

Positive work reflection is defined as the processing of the positive aspects of work, considering these positive aspects and thereby realizing what is so great about your work (Fritz & Sonnentag, 2006). Positive work reflection is an activity that contributes to the provision of resources, such as positive affect, which therefore should increase performance at work (Binnewies, Sonnentag & Mojza, 2009). The activity provides resources by i) Appraising the positive aspects of work, thus reducing the detrimental consequences from demands (such as stress) ii) Reflecting upon accomplishments and relationships at work, thereby savoring the positive consequences of work (Binnewies et al., 2009). Positive work reflection therefore differs from negative work reflection, a resource-consuming activity, which puts the focus on thinking about negative aspects of work, thereby keeping the job stressors mentally active (Fritz & Sonnentag, 2006; Binnewies et al., 2009). Examples of positive work reflection are considering the achievements made in your tasks today, or considering the fortune of your working environment and colleagues. Positive work reflection is a not a social, nor an externally-oriented process. Positive work reflection revolves around internal processing of an individual following a positive work event.

The studies directly addressing positive work reflection and work-related outcomes are scarce. Fritz and Sonnentag (2006) did find that high levels of positive work reflection during the holiday resulted in a significantly higher level of work engagement. More concretely positive work reflection was found to positively influence creativity and contextual performance by its ability to generate motivation and positive affect toward one's work (Binnewies, Sonnentag & Mojza, 2009). Contextual performance thereby benefits from the increase in one's motivation towards work, whereas creativity is heavily influenced by the broadening of one's thought processes due to positive affect, in accordance with the broaden and build theory (Fredrickson, 2001).

That positive work reflection strengthens the contextual performance was later also confirmed in a study by Koonen (2012). Moreover an interaction effect of positive work reflection was found, such that contextual performance that follows from a positive work event is higher whenever one reflects upon this, as opposed to an employee that does not participate in positive work reflection. In a study of Binnewies et al. (2009) positive work reflection is also found to positively stimulate contextual performance and even creative performance. However, task performance is not significantly influenced by positive work reflection (Binnewies et al., 2009). This part of work has to be done since it is one's obligation and thus motivational and affective benefits stimulated by positive work reflection do not increase one's formal requirements to do their core tasks at work.

Previous research thus indicates positive relationships between work-related outcomes and positive work reflection. The influence of positive work reflection however seems to be related towards positive affect. Significant relationships between positive affect and positive work reflection have been found (Koonen, 2012). In addition Binnewies et al. (2009) assigns the influence of positive work reflection to the affective benefits positive work reflection has. Positive reflection upon work is expected to be beneficial by its ability to savor and appreciate experiences at work, which can allow for more positive affect within one's life (Sheldon & Lyubomirsky, 2006). Additionally savoring positive experiences is also a way to counter hedonic adaptation towards positive circumstances in life (Lyubomirsky et al., 2005). This attribute of positive work reflection to elicit more positive affect makes it a beneficial mechanism to stimulate. The development of a positive psychology intervention aimed at increasing positive work reflection thus seems to be justified. This intervention should be aimed at two aspects: i) The manner and extent in which one reflects upon work and ii) As a tool to trigger more positive affect with this reflection . If this intervention is effective it

should stimulate the level of positive work reflection of the participants and consequentially impact the positive affect experienced.

Hypothesis 5: The intervention aimed at positive work reflection will increase the amount of positive work reflection and positive affect by the intervention group, compared to the control group [after participation to the intervention]

Method

To assess the effects of the intervention upon positive affect and work performance a 5 week longitudinal study was developed. During these five weeks, five measures were taken: a pre- and a post measure and three weekly measures. In addition the research was designed such that the participants were randomly assigned in two groups: the intervention group and the control group. The intervention group was provided an intervention composed out of three exercises. An exercise aimed at positive work events during the entire course of the research and two weekly exercises aimed at capitalization and positive work reflection, respectively. The control group received no interventions but filled out the measures at the same points in time as the intervention group. The activities for the intervention group and their measures are presented in Table 1. The measures were collected by web-based and paper based measures according to the preference of the participant. Web-based collection of data does not harm the quality of the data, and if anything benefits effectiveness and data entry (Gosling, Vazire, Srivastava, & John, 2004). When the data was collected the measures were statistically analyzed with a repeated measures analysis of variance and various linear regressions.

Table 1: The measures and the associated activities for the intervention group

Week	Measure	Intervention introduced by the measure	Intervention to be performed (during the working week)
Week 1	The pre-measure	Positive Work Events	
Week 2	The first weekly measure	Positive Work Reflection	Positive Work Events
Week 3	The second weekly measure	Capitalization	Positive Work Events + Positive Work Reflection
Week 4	The third weekly measure		Positive Work Events + Capitalization
Week 5	The post-measure		Positive Work Events

Sample

Forty persons participated in this study. Among the 40 participants were 19 women (47,5%) and 21 men (52,5%). The average age was 40,4 years. The majority of the participants was living together or married (56,1%), and 34,1% was living alone. The average years of work experience was 18, 45 years (SD =13,80 year) in which 30,25 hours a week was averagely undertaken. The lion-share of these participants were doing wage labor (97,5%). Among the participating working force 20% of the participants were working in management. The working sectors education (25%) and health-care (27,5%) were most common. The participants were mostly highly educated. 35% of the participants had at least a university degree, and 35% of the participants had a degree at higher vocational education. On average the participants were working in teams with 4 to 5 colleagues. The flow of participants during the study is presented in Figure 2.

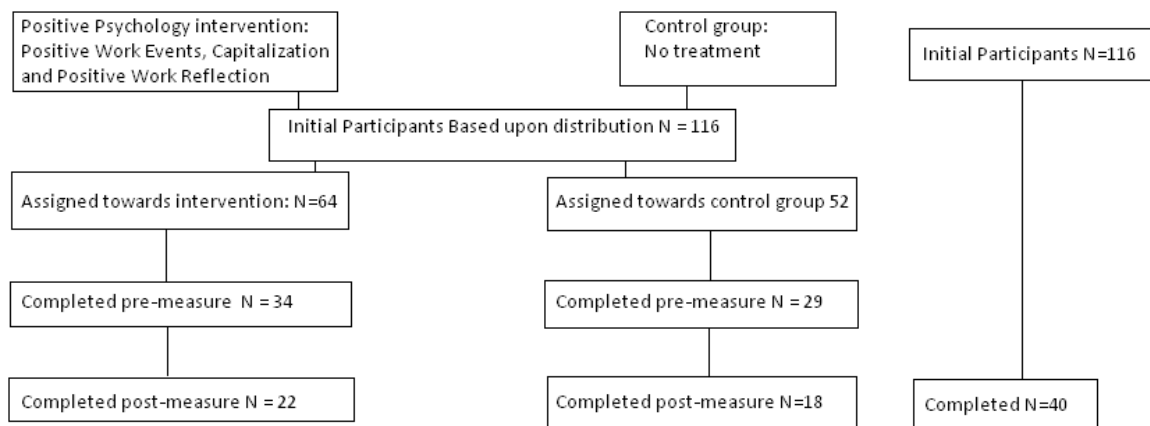


Figure2: The flow of participants in the intervention and the control group

Intervention Program

The interventions were developed based on the literature with respect to previous successful positive psychological interventions. The interventions were adjusted accordingly for purpose of the mechanisms (capitalization and positive work reflection) and experiences (positive work events) to be stimulated. In the case of positive work events and capitalization no interventions had been developed yet, thus these were developed from scratch. A literature study beforehand made it possible to determine success factors for interventions beforehand. Interventions should: i) Counter hedonic adaptation towards positive aspects of life ii) Be original iii) Shift focus towards positive experiences iv) Provide several pathways, or possibilities, to achieve happiness (Lyubomirsky, Sousa, & Dickerhoof 2006; Lyubormisky et al., 2011; Seligman et al., 2005; Seligman, Rashid, & Parks, 2006; Sin & Lyubomirsky, 2009)

Positive Work Events intervention This intervention is aimed at maximizing the occurrence of positive work events. The events to be triggered are those that are found to frequently occur and elicit positive affect. This type of events thereby will form the core of positive work events that should be stimulated in order to increase the frequency of their occurrence and thereby generate more frequent positive affect. The participants were instructed to read the intervention. The intervention explained what positive work events are. Moreover the instructions aimed to motivate the participants by stressing how positive work events are beneficial for one's happiness and performance at work. After providing concrete examples of positive work events that frequently occur and methods to stimulate these events

the participants were confronted with their assignment. They were asked to trigger at least one positive work event on a daily basis. The participants were asked to execute this intervention during the full length of the research and were reminded of the intervention and its content on a weekly basis while completing the measures.

Capitalization intervention The capitalization intervention was developed from scratch since the literature surrounding capitalization, as an intervention and in a work-related context, is limited. The intervention is thereby developed according to the statement that capitalization should be there to maximize the significance of a positive work event to oneself (Langston, 1994; Reis et al., 2010). The participant is thereby motivated to capitalize within the instructions of the intervention. This is accomplished since the intervention will mention the benefits of capitalization as a coping mechanism and the consequences capitalization can have for positive affect. Subsequently the participants will be requested to share their positive work events with at least one person during the week. Tips are provided with whom to share this event and what moments are suited to capitalize.

Positive Work Reflection intervention The positive work reflection intervention is delineated from two interventions. The ‘three good things’ intervention which was found to be successful in increasing happiness and positive affect (Seligman et al., 2005), and the ‘counting blessings’ intervention (Emmons & McCullough, 2003). Moreover the intervention is aimed at adapting an unorganized, repetitive type of cognitive processing for the participants when reflecting. Repetitive replaying the event while reflecting is associated with higher positive affect, since one relives the emotions formerly experienced with the event (Lyubomirsky et al., 2006). On the contrary whenever one systematically analyses such a positive experience, this will limit the benefits for positive affect by relieving the event from its uniqueness and mystique. The intervention is thus aimed at increasing positive work reflection and the manner in which one reflects. The intervention instructs participants to reflect daily upon at least one positive work event. To appreciate the event (show gratitude) and be aware of the good things (positive work reflection). Moreover the participants are instructed in what manner to process these events: by reliving the experience and not over-analysing it. Concrete examples are provided of positive work events to reflect upon. Motivation to execute the intervention is given by mentioning the benefits of positive work reflection for yourself and work-related outcomes.

Measures

Positive affect is measured by using the positive affect items from the PANAS scale by Watson, Clark and Tellegan (1988). The PANAS scale measures positive affect by 10 items (e.g. This week at work I felt: “Excited”, “Enthusiastic”, “Inspired”, “Active”). The scale ranges from 1 (very slightly or not at all) to 5 (extremely). The PANAS measures are included in each of the five measures.

Subjective happiness or subjective well-being is measured in addition to positive affect, such that there is an additional dependent measure to be evaluated towards the benefits of participation in the intervention. Since subjective happiness is referred to as frequent positive affect, high life satisfaction and infrequent negative affect (Diener, 1984), positive findings in this dependent variable also indicate benefits of the intervention. The items to measure subjective happiness were obtained from Lyubomirsky and Lepper (1999), items were “I general consider myself a happy person”, “Compared to most of my peers, I consider myself happy”. The subjective happiness scale ranges from 1 (strongly disagree) to 4 (strongly agree)

Positive work events were measured on a weekly basis, and on a monthly basis in the pre- and post-measure. The items were obtained from Maybery, Jones-Ellis, Neale and Arentz (2006) and presented items such as “Support received from supervisor/employer”, “Positive feedback from other workers”, “Use of your skills in your work”. In addition, as suggested by previous research (Ilies et al. 2011; Bono et al. 2013) input for work events are derived from the work events mentioned in other studies (such as Basch & Fisher, 1998; Koonen (2012) . These studies thereby also provided items, since this study positive work events were indicated by the participants and categorized accordingly. Therefore the participants in the study could mark down the positive work events in one of the presented categories (e.g. positive feedback, completing tasks, achieved goals, nice conversations), with an additional category identified as: “Other” to avoid events from being not identified. These positive work events were subsequently judged on frequency and intensity, since both are deemed important in generating positive affect. This was done on a 5-point Likert scale for frequency of which the frequencies numbers differed when it was a weekly measures, ranging from 0 times to 6+ times, as opposed to the pre- and post-measures on a monthly basis, ranging from 0 times to 10+times. The work events intensity was scaled from 1 (not positive) to 5 (extremely positive).

Capitalization is addressed by measures derived from Langston (1994) and Gable et al. (2004). Items included: When I experienced a positive work event this week at work I: “Let others know about the event.” or “Showed my feelings to other people”. The associated scale ranges from 1 (strongly disagree) to 5 (strongly agree). The frequency of capitalization was also measured (“How frequently have you discussed this event”), this was done on a 7-point Likert-scale. The frequencies differed for the weekly and the monthly measures.

Positive Work Reflection is measured with the scales previously developed by Fritz and Sonnentag (2006). The scale includes three items (“I thought about the positive points of my job.”, “I considered the positive aspects of my job”, “I realized what I like about my job.”). The scale ranges from 1 (strongly disagree) to 5 (strongly agree).

Performance at work is measured along three dimensions: task performance (4 items, e.g. “This week at work I adequately completed my formal tasks at work”, “This week at work I performed the tasks that were expected of me”), contextual performance (4 items, e.g. “This week at work I took time to listen to the problems and concerns of my colleagues.”, “This week at work passed along information to my colleagues.”) and creative performance (4 items, e.g. “This week at work I was innovative”, “This week at work I had a lot of creative ideas”). The items measuring task- and contextual performance were developed by Williams and Anderson (1991). The items for creative performance were developed by Miron, Erez and Naveh (2004). The associated scale ranges from 1 (strongly disagree) to 5 (strongly agree). For the monthly pre- and post-measure this week at work would be replaced by this month at work.

Effort and motivation towards the interventions is measured to assess the effectiveness of the intervention. Motivation is assessed with the self-concordant motivation scale developed by Sheldon and Elliott (1999). This scale consists out of four items (e.g. to what extent you agree with the following statements regarding carrying out the intervention: “because somebody else wants me to,” because my situation will force me to). Effort was briefly measured by a direct item “I exerted effort in carrying out the intervention.” The scales range from 1 (strongly disagree) to 5 (strongly agree).

Analysis The collected data ($N=40$) were analysed with SPSS General Linear Modeling (GLM) repeated measures to identify the effect of the intervention over time. Before the repeated measures ANOVA could be initiated the data was analyzed. The Cronbach alpha's of the various measures was acceptable, as its value was bigger than 0,65 for each of the variables. The data was consequently assessed on various assumptions that would allow for a repeated measures ANOVA: multivariate normality, independence of observations, homogeneity of covariance matrices (Hair, Black, Anderson and Tatham, 2010). The assumptions for a repeated measure ANOVA were met in this sample and thus the statistical analysis can proceed. A preliminary independent sample T-test was additionally performed to identify significant differences in means of the variables prior to the start of the interventions. Creative performance was found to significantly differ between the intervention- and the control group prior to the interventions ($t(38) = 2.433, p = 0.020$) and is thus not further investigated within the repeated measures ANOVA. All other measures did not significantly differ and thus can be included within the repeated measures ANOVA.

Results

After cleaning up the data, by removing participants that did not perform at least the pre- and the post-measure, the remaining sample used to test each of the hypotheses. Hypothesis 1 stated that: *The participants in the intervention group will experience a higher level of positive affect than the participants in the control group [after participation to the intervention]*. The repeated measures ANOVA shows that, while comparing the pre-measure (T1) and the level of positive affect with the post-measure (T5) and level of positive affect, there seems to be a boost in positive affect due to the interventions. The effect is formally not statistical significant ($F(1, 38) = 3.573, p = 0.066$), however a trend seems to be present as graphical illustrated in Figure 3. Thus hypotheses 1 is statistically rejected, although the results do indicate a trend. Moreover taking a closer look the control group also seems to show a negative trend in positive affect. Whether or not such a negative trend is countered by the intervention is open to interpretation.

This indication that the intervention is beneficial for positive affect is strengthened by similar findings while comparing subjective happiness at the pre- and the post-measure for the participants in the intervention group to the participants in the control group. Subjective happiness is associated with frequent positive affect (Diener, 1984). The effect of the interventions upon subjective happiness is formally not statistical significant ($F(1, 38) =$

3.078, $p = 0,087$), however there seems to be a similar boost in happiness due to the interventions, as found for positive affect.

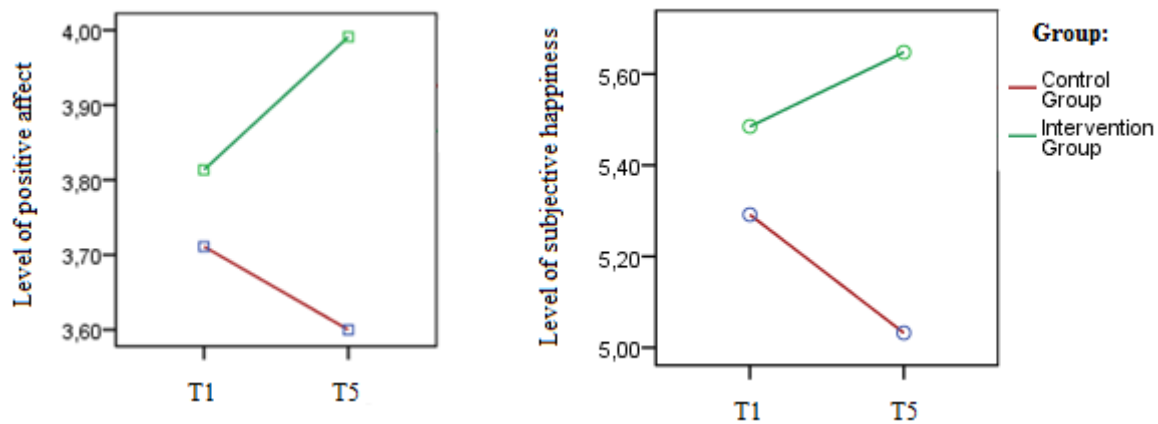


Figure 3: The change in positive affect over time at the pre- (T1) and post-measure (T5), the second graph depicts the same information for the change in subjective happiness.

Hypothesis 2 proposes that: *Changes in positive affect over time (due to the intervention), will be positively related to increases in work performance (task, contextual, and creative)*. This hypothesis was not confirmed for any of the measures related to positive affect. The changes in positive affect for the intervention group were not significantly related to changes in performance.

When evaluating this hypotheses towards changes in subjective happiness, i.e subjective well-being which is associated with frequent positive affect (Diener, 1984), the results do partially confirm this hypothesis. Changes of subjective happiness over time within the intervention group were significantly related to contextual performance ($\beta = 0.337, p = 0.047$), but not to creative performance ($\beta = 0.255, p = 0.214$). This significant influence upon contextual performance was not found for the control group that did not receive any treatment. Task performance was a special case since the significant effect of changes in subjective happiness was found in both groups, thus not providing evidence that this effect can be ascribed to the intervention. The change in happiness was only reflected towards a significant change in the dimension of contextual performance for the intervention group, and towards task performance for both groups. Thus hypothesis 2 is partially confirmed for contextual performance when looking at changes in subjective happiness to be attributed towards the intervention. This is shown in Table 2.

Table 2: The influence of the change of events, and change of SHS upon contextual performance for the intervention group

Contextual Performance at T5				
Model	F	R²	ΔR²	β
1) Control Variables				
Contextual Performance at T1				0.572**
	8.747	0.327	0.327	
2) Add change in positive work events				
Contextual Performance at T1				0.863**
Change(Δ) in positive work events				0.549*
	10.128	0.544	0.217	
3) Add change in subjective happiness				
Contextual Performance at T1				0.877**
Change(Δ) in positive work events				0.452*
Change(Δ) in subjective happiness				0.337*
	9.748	0.646	0.103	

*p < .05 ** p< .01 (tested two-sided)

Hypothesis 3 proposed that: *The intervention aimed at increasing the occurrence of positive work events will increase the amount of positive work events experienced by the intervention group, compared to the control group [after participation in the intervention].* This hypothesis is rejected since a repeated measures ANOVA provides a surprising result. The repeated measures ANOVA is show a negative trend for frequency of positive work events for the intervention group ($F(1,38)= 3,151, p = 0,084$). The positive work events intervention did not increase the occurrence of positive work events. The amount of positive work events is found to have decreased as shown in Figure 4. Similar findings are found for the intensity of positive work events, although not statistical significant ($F (1, 38) = 2,968, p = 0,094$).

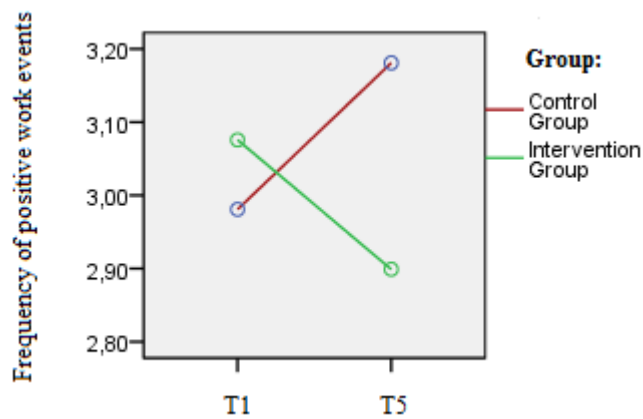


Figure 4: The change in frequency of positive work events at the pre- (T1) and post-measure (T5) for both groups

Hypothesis 4 proposes that: *The intervention aimed at increasing the level of capitalization will increase the capitalization and level of positive affect within the intervention group, compared to the control group [after participation to the intervention].* A repeated measures ANOVA rejects this hypothesis ($F (1, 38) = 0,211, p = 0,649$). Although Figure 5 on the next page, reflecting the level of capitalization between both groups, looks promising the results are far from significant. The application of different capitalization measures (frequency, persons involved) neither resulted in a statistical significant finding, although the graphical plots also reflected an increase in capitalization for the intervention group.

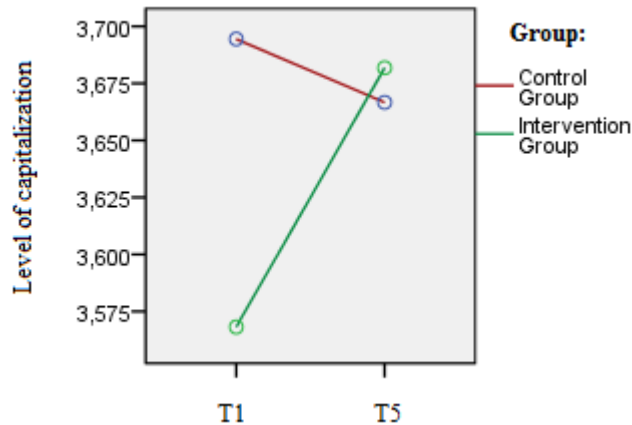


Figure 5: The change in capitalization at the pre- (T1) and post-measure (T5) for both groups

Hypothesis 5 proposes that: *The intervention aimed at positive work reflection will increase the amount of positive work reflection and positive affect by the intervention group, compared to the control group [after participation to the intervention].* A repeated measures ANOVA rejects this hypothesis ($F(1, 38) = 3,214, p = 0,081$). This, in combination with the graph (Figure 6) does provide a trend indicating that the control group increased in positive work reflection during the research, whereas the intervention group stayed constant.

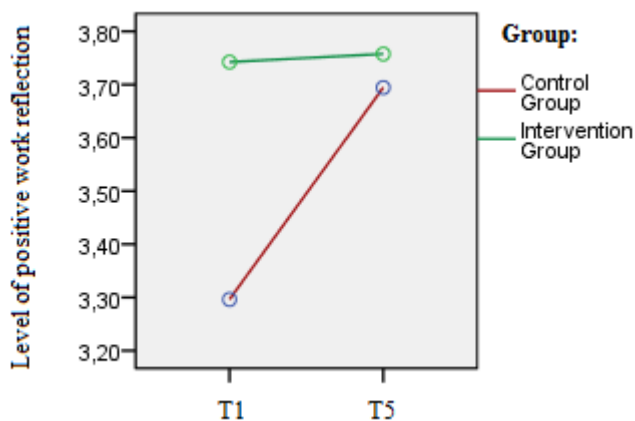


Figure 6: The levels of positive work reflection for both groups at the pre-and post measure

Additional analyses

To summarize, the intervention group did increase in positive affect, but none of the hypotheses regarding the effects of the intervention on the occurrence of work events and use of coping mechanisms has been confirmed. To shed more light on these results, additional analyses on the weekly measures were undertaken in which a closer look to the performing of the intervention is taken. These weekly measures additionally allow for the use of data from participants that did not complete the post-measure but completed measures that contribute to the relevant week(s).

The positive work reflection intervention was introduced in week 2, and executed in week 3 of this study. The mean of intervention execution during the entire study was hovering around 4-6 times, as indicated in the post-measure. This PWR intervention, formally prescribed to reflect daily upon at least one positive work experience. This indicates that the intervention has not been applied anymore after the week in which the participants were requested to participate in the intervention. Looking at the measures of week 2 and week 3 there are no significant indications in a Repeated Measures ANOVA ($F(1, 28) = 0,638, p = 0,430$) of statistical significant changes in positive affect between both groups ($N = 30$). However the slope of positive affect does seem to be somewhat steeper for the intervention group, while the levels of reflection between the two groups have not been changed as shown in Figure 7.

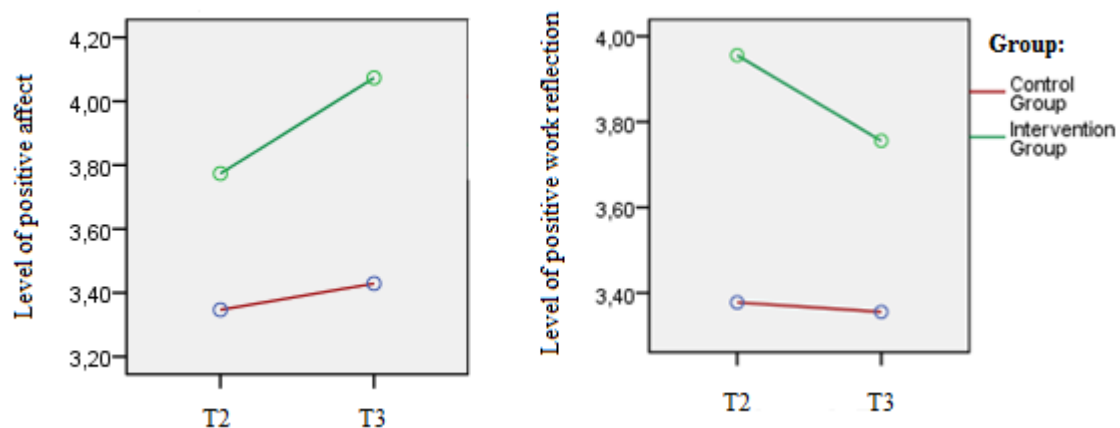


Figure 7: Changes in PWR and positive affect between the both groups for the measures in week two (T2) and week three (T3)

Although not statistically significant, this does show that during the week that the intervention was executed (based on frequency indications in the post-measure), positive affect was influenced. To test this proposition the intervention group and their measures of positive work reflection, effort towards the intervention and an interaction term of PWR and effort are linearly regressed with positive affect as dependent variable. This means that a linear regression is performed to identify the effects of effort towards the intervention, upon the positive affect received from positive work reflection. This regression is made for the third (T3) and the post-measure (T5). For the third measure the sample size was ($N = 22$), whereas in the post-measure ($N=17$).

As shown in Table 3 effort towards the intervention did significantly strengthen the influence of positive work reflection (PWR) upon positive affect ($\beta = 0.296$, $p = 0.039$). This effect was not apparent at the post-measure (T5) where the interaction effect was not significant ($\beta = -0.172$, $p = 0.607$). Moreover positive work reflection was not significantly related towards positive affect at that time ($p = 0.073$). For the frequency of execution similar findings are presented. The frequency of execution did significantly strengthen the influence of positive work reflection upon positive affect at T3, with the interaction effect being as strong as ($\beta = 0.396$, $p = 0.041$). At T5 this effect completely disappeared ($\beta = -0.161$, $p = 0.602$) and PWR lost its value as statistically significant predictor of positive affect ($p = 0,085$).

Table 3: PWR measured in week three (T3) and effort towards the intervention, including its interaction linearly regressed towards positive affect in week three (T3)

	Positive Affect at T3			
Model	F	R ²	ΔR ²	β
1) Add positive work reflection as a centered variable				
PWR at T3 (centered)				0.781**
	31.292	0.610	0.610	
2) Add effort as a centered variable				
PWR at T3 (centered)				0.830**
Effort towards PWR intervention (centered)				-0.124*
	15.701	0.623	0.013	
3) Add the interaction term				
PWR at T3 (centered)				0.918**
Effort towards PWR intervention (centered)				-0.154
Interaction between Effort towards the intervention and PWR				0.296*
	14.287	0.704	0.081	

*p < .05 ** p< .01 (tested two-sided)

Additional analyses to performing the intervention were also taken for the capitalization intervention. In this case the intervention was compared at T4 and T5, since the capitalization intervention was introduced in week 3 (T3) and evaluated during week 4 (T4). For this intervention effort did not significantly strengthen the influence of capitalization upon positive affect ($N = 19, \beta = 0.302, p = 0.248$). Neither did frequency of execution significantly strengthen the influence of capitalization upon positive affect ($N = 19, \beta = -0.104, p = 0.617$). More effort or attempts to capitalize did not result in better positive affect, not even when the intervention was just introduced.

Table 5 below presents the means of motivation on a 5-point Likert scale towards the interventions of capitalization and positive work reflection. These means significantly differ from each other in a paired sample t-test ($t(16) = 2.915, p = 0.10$). This significant difference in motivation towards the intervention could explain why effort and frequency does strengthen the influence of the positive work reflection but not the influence of the capitalization intervention. Motivation has been found to be beneficial for performing an intervention and can strengthen the effects of this performance upon positive affect (Sheldon & Lyubomirsky, 2006). This low level of motivation towards the capitalization intervention thereby not only limits the possibilities that the participants actively perform the intervention; it also weakens the possible strengthening influence of the intervention upon positive affect.

Table 5: Motivation towards the Positive Work Reflection (PWR) intervention and the Capitalization intervention

	Mean	SD	N
Motivation towards PWR intervention	2,94	2,28	17
Motivation towards Capitalization intervention	1,88	2,60	17

As a final analysis the positive work events intervention will receive additional attention. This intervention was initiated during the full length of this study. The motivation towards the intervention however steadily dropped, as depicted in Table 7. A closer analysis of the effort towards the intervention is presented in Table 8. In the third week the effort towards the intervention was higher than in week two (T2), ($t(19) = -1.993, p = 0.061$), and significantly higher than in week four (T4), ($t(16) = 2.634, p = 0.018$), as validated in a paired sample t-test. Despite this significant increase in effort, a strengthening influence upon positive affect could not be presented ($\beta = 0.334, p = 0.207$). Not in one of the weekly measures, nor at the post-measure.

Table 7: The motivation towards the positive work events intervention following the duration of the research

	Mean	SD	N
Motivation towards Positive work events intervention at week 2 (T2)	3,08	2,25	25
Motivation towards Positive work events intervention at week 3 (T3)	2,619	2,38	21
Motivation towards Positive work events intervention at week 4 (T4)	2,0526	2,7	19

Table 8: The initiated effort towards the positive work events (PWE) intervention

	N	Minimum	Maximum	Mean	SD
Effort towards PWE intervention at week 2 (T2)	17	1	4	3,53	0,87
Effort towards PWE intervention at week 3 (T3)	18	1	5	3,21	1,08
Effort towards PWE intervention at week 4 (T4)	22	3	5	3,82	0,59
Effort towards PWE intervention at week 5 (T5)	25	1	4	3,32	0,9

Discussion

The aim of this study was to develop a positive psychology intervention aimed at increasing positive affect and work performance. Participants were provided with three exercises as interventions, i.e. a positive work events exercise, a positive work reflection exercise and a capitalization exercise, which varied in the formally prescribed duration. Partial support was found for the effectiveness of the interventions in enhancing positive affect. This finding can be explained by the fact that the interventions attempt to direct the attention upon the positive experiences at work: by sharing those, triggering those and reflecting upon those. This allows the participants to appreciate positive aspects of work as such. This enhanced attention towards positive experience in turn allows for more positive affect by countering humans tendency to focus upon the negative (Taylor, 1991).

The interventions boosted positive affect (and subjective happiness), although this effect was not statistically significant. The intervention was also found to be effective towards a work-related outcome, i.e. contextual performance. Changes of subjective happiness over time within the intervention group were significantly related towards contextual performance. This significant relationship was not found for the control group, where the change in subjective happiness was highly insignificant towards contextual performance. This finding shows that the changes in happiness contribute towards performance-related outcomes whenever one is stimulated towards happiness. The interventions thereby seem to make the participants aware of positive aspects of their environment, such that this appreciation translates into pro-social behavior. In addition the participants' in the intervention group could have become more aware in how to optimally process positive work events, such that more positive affect is extracted and increased. Another explanation is that the changes in happiness allow for a broader repertoire of actions and thought processes to react upon stimuli at work, in accordance with the broaden and build theory (Fredrickson, 2001). This is contradicting the common belief, and literature, that the broaden and build theory is foremost beneficial for creativity. Contextual performance could benefit to a similar extent from this 'broaden and build' process, by allowing the buildup of resources and stimuli that shed the working environment in a positive light. This broadened view to observe and experience positive stimuli which possibly influences employees' helping behavior or other activities that provide value to the organization (e.g. social environment). Thereby enhanced happiness strengthens contextual performance by lowering the barrier to identify and react upon perceived possibilities to reach a helping hand towards co-workers or the organization. For task

performance a significant positive effect for changes in subjective happiness was found in both groups. Therefore this effect cannot be ascribed towards the intervention. It remains interesting that happiness stimulated task performance in this sample. This could possibly be explained by sample characteristics whereas over 50% is working in innovation sectors, healthcare and education. In these sectors task performance is interpreted more widely as opposed to sectors where routine work is the standard. The benefits of enhanced cognitive processing, due to positive affect, are possibly especially relevant in these working sectors.

For creative performance no results are found. During the prior analysis, before performing the repeated measure ANOVA and the various regressions, an independent sample t-test showed that the level of creative performance significantly differed between the intervention- and the control group prior to the interventions. The intervention group was initially higher in creative performance ($M = 3.55$, $SD = 0.75$) than the control group ($M = 2.97$, $SD = 0.77$). Therefore both groups were not equal in their level of creative performance prior to participation in this study, such that this aspect of performance is not assessed.

The results did not confirm that the positive work reflection intervention increased the process of reflection. A closer look at the data shows that the intervention group was already high on reflective behavior ($M = 3.74$ on a 5-point Likert scale, $SD = 0.99$). In the control group, there was still room for increases in reflective behavior because of a lower mean of positive work reflection ($M = 3.29$, $SD = 0.97$). A ceiling effect therefore limited the possibility to increase reflective behavior in the intervention group. The intervention however does seem to contribute towards positive affect. As presented in the additional analyses section, when the intervention is frequently executed, and effort is exerted towards the intervention, the positive relationship of positive work reflection upon positive affect is strengthened. In addition frequency of execution and effort towards the intervention only strengthened the significant relationship of positive work reflection and positive affect in the week the intervention was performed. This indicates, in combination with the measured frequency score during the entire study, that the intervention was only actively performed by the participants during the intervention week, but not anymore thereafter. Combined with the finding that during this week the intervention showed a strengthening influence upon the relationship between positive work reflection and positive affect, the importance of actively reflecting upon work is confirmed.

Effort in participating in an intervention and maintaining eagerness to repeat the associated tasks is of thereby very important in making the intervention work, as confirmed in previous research (Fordyce, 1977, 1983; Lyubomirsky et al., 2005; Seligman et al., 2005; Sheldon and Lyubomirsky, 2006). The intervention is thereby deemed to be effective, provided that participants invest enough effort. Although the lack of voluntarily continuation after the prescribed period could indicate that the intervention is perhaps not suitable for the long term, the measured motivation towards the intervention ($M = 2.94$ on a 5-point Likert-scale, $SD = 2.28$) does indicate possibilities in sustained execution.

The results did not demonstrate that the capitalization exercise enhanced the sharing process, nor when effort was taken into account. This could be explained by the lack of excitement the participants had towards this intervention, the participants were not eager to perform the intervention. This is reflected in the motivation to perform this intervention, on the lower side with a mean of ($M = 1.88$, $SD = 2.60$) on a 5-point Likert scale, which is significantly lower than the participants motivation towards the positive work reflection intervention. The low motivation and effort towards the intervention seems to indicate that it is hard to enhance the process of capitalization. Confirming the statement of Gable et al. (2004) that capitalization is a natural tendency, and thus is hard to influence. The lack of motivation towards this intervention, and statements by individuals such as “capitalization is an attribute that not suits me at all” indicate that this intervention is likely to be ineffective whenever it has to be executed ‘on demand’, especially over a prolonged time-frame. To conclude, the capitalization intervention does not seem to be beneficial to stimulate positive affect.

The positive work events intervention that was developed to stimulate the frequency of positive affect by means of increasing the number of positive work events was not effective. Neither the frequency, nor the intensity of positive work events was affected. This intervention was developed upon positive work events that were found to frequently occur and elicit positive affect in previous studies. This fostered expectations that these occurrences would be increased whenever the participants were stimulated towards undertaking these occurrences. The intervention however had a negative effect, since the frequency and intensity of positive work events for the control group increased and those values decreased for the intervention group. The intervention thereby seems to be counter effective. This could be related to the steady decreases in motivation of the participants found to perform the intervention. This indicates that the participants that kept on performing the intervention felt

more and more obliged to perform the intervention, as opposed to internally motivated. This force to continue participation can negatively impact participants' ability to benefit from the intervention, since meaning and purpose to undertake these activities are strained (Lyubomirsky et al., 2011). Furthermore this intervention explained what kind of positive work events are most likely to occur, thus could therefore be triggered more frequently. This information provides the participants with building blocks to increase positive experiences in life, which negatively contributes to the irrationality of the experience. This labeling and structuring of good events at work could make the participant feel less happy with a positive experience (Lyubomirsky et al., 2006). Although recognition of positive events is not detrimental per se, the increased awareness of how the event occurred could be detrimental. The participants are thereby provided with an equation to increase positive work events, without being assured that these positive work events truly occurred as such, or are just fabricated towards their own effort. This could be detrimental for the perception of these positive work events, which can explain the experienced decrease in frequency and intensity of positive work events during the course of the study for the intervention group. The positive work events intervention thus seems not to be suitable to increase positive work events, nor in frequency nor in intensity. The steadily decrease in motivation towards performing the intervention also indicate that in the long-term this intervention should not contribute towards happiness since one is not eager to undertake the associated activities.

This research design did not allow to systematically analyze the contribution of each of the interventions towards the boosted impact upon positive affect. The data and its associated conclusions however provide some indications. The positive work reflection intervention seems to have the strongest empirical base to be a contributor to the increase in positive affect, since the performing of this intervention indicated strengthening influences upon positive affect. The capitalization intervention and positive work events intervention were less pronounced in their effects. Clear strengthening influences upon positive affect were not found; moreover the motivations towards the intervention were either relatively low or decreasing over time. Provided that only the positive work reflection intervention depicted some true possibilities for long term increase in positive affect, and associated work-related outcomes, than how did the intervention group boost his positive affect? One explanation could be the initiation of a so-called shotgun approach, by providing the participants with three interventions (although not simultaneously), such that possible beneficial elements from parts of the interventions could be self-selected. Without strictly following the guidelines

associated with each of the interventions, the individuals could have determined what they found to be most important thereby fabricating their own way to happiness with input from the interventions. Individual tailored interventions have already been proven to be successful (Gordon, Demerouti, Le Blanc, Bakker, Bipp, & Verhagen, 2014), and Fordyce program (1983) also indicates that whenever presented with several pathways to influence happiness, not each pathway was found to be equally popular nor effective between the individuals. Another possible explanation is that these interventions solely increased one's awareness about happiness and possible triggers, thereby countering hedonic adaptation towards happiness stimuli at work regardless of the content of the interventions. The interventions combined could have allowed more focus upon positive aspects thus reducing the attention given to negative occurrences, thereby providing more positive affect (Taylor, 1991).

Theoretical contributions

This study contributes towards the empirical literature on positive psychology intervention by studying three types of interventions which have not been developed and tested yet. Previous studies found that positive psychology interventions indeed can stimulate positive affect. This study also confirms that the effectiveness of interventions is dependent upon the effort the participant invests in performing the intervention. The research design did not allow to single out the effects of each of the components of the intervention on the boost in positive affect.

More revealing however is the finding that the changes in subjective happiness initiated by these interventions are found to have an impact on contextual performance. Positive psychology interventions studies focusing on performance outcomes are scarce and the findings of this study provide a good starting point. Insight has been obtained in the possible underlying mechanism of the intervention effects: awareness of the working environment their co-workers, insight in optimally processing positive work events and a broader repertoire of actions and thought processes to identify and react upon stimuli from the working environment.

Regarding the interventions' effectiveness positive marginal significant effects have been found upon positive affect and subjective happiness. Relating this effect towards the success criteria for interventions mentioned earlier in this study can confirm the importance of providing alternatives (pathways) to stimulate happiness and the focus upon the positive aspects of work and the experiences. This study also confirms the importance of original

interventions, which one is motivated to undertake. It seems that the capitalization intervention did not interest, nor fit the individuals as such based on the low motivation towards the exercise. This is reflected in its lack on enhancing regarding positive affect. Overall not each part of the intervention fitted with the interests of the participants, which can limit the effectiveness (Sheldon, Kasser, Smith and Share (2002). Insight is thereby obtained in possible strengths and weaknesses of (this) interventions and to avoid the stimulation of processes that are personality bound and one's natural tendency, thus hard to change (i.e. capitalization). The literature upon positive work reflection and capitalization, especially in a work-related context, is scarce. Moreover interventions aimed at those constructs are either very limited or non-existent. This study contributes to the positive work reflection literature by showing how positive work reflection could be linked towards positive affect and work-related outcomes. The finding that an intervention aimed at this type of cognitive processing of work-related experiences, whenever persistently performed (frequently and with effort), can boost positive affect confirms the importance of positive work reflection.

Regarding capitalization this study confirms the statement of Gable et al. (2004) that capitalization is hard to influence since it is one's natural tendency. This study also contributes to the literature by showing that capitalization is not a feasible construct to stimulate by a positive psychology intervention.

Future research

There are several points of interest for future research. Foremost future research should be designed such that the unique contributions of each of the interventions towards positive affect can be disentangled. This will allow for identification of the strengths and limitations of each intervention, and designing an optimal approach for implementing this type of interventions in the working environment. Moreover this future research should be performed using with a larger samples, increasing statistical power and allowing to make stronger contribution to the field.

Future research could also be extended towards designing a study in which several alternatives to enhance positive affect are provided. Such a study should offer the participants numerous possibilities to boost positive affect, among which some of the interventions research in this study. This can allow the participant to motivate himself in several activities stimulated by an intervention (Lyubomirsky et al., 2011). This will allow to gain insight into

the attractiveness of different types of interventions and to individually tailor positive psychology interventions.

Future research should also be aimed at further exploring the impact of positive psychologically interventions on work-related performance measures. This research showed some preliminary evidence regarding the effects of changes in subjective happiness on contextual work performance. This relationship should be further investigated, within a larger data-set such that more insight can be obtained which of the proposed underlying mechanisms seems to be the primal cause. Among others insight could be obtained to what extent the broaden and build theory seems to contribute within this relationship.

Presented with the possible benefits of the positive work reflection intervention a follow-up study could be devoted towards this intervention in particular. In the present study the duration of the intervention was limited, and future research should be aimed at performing this intervention over a longer time-frame. Thus yielding insight into its long(er) term effects.

Regarding the capitalization intervention, our results did not hold much promise regarding its possible benefits within the working environment. Future research could assess if a similar intervention, aimed at one's social relationships and environment, might prove to be promising to rule out possible favorable influences for capitalization interventions.

Strengths and Limitations

The main limitation of this study is that the boost in positive affect was not statistically significant. However provided with the limited number of participants in this study these results still provide a strong indication of the possibility of this type of interventions to enhance positive affect. Related to this limitation of the findings regarding positive affect is that the post-measure was assessed only a month after the start of the intervention. Though this allows some inferences regarding the intervention's long-lasting impact upon positive affect, a more long-term post-measure is preferable to provide indications in the ability to sustainable influence happiness by participating in the intervention. Moreover since the requested behaviors (i.e. reflection, sharing) might not have been internalized yet a follow-up measure might show a stronger effects than reflected now in the post-measure (Ouweneel, Le Blanc & Schaufeli, 2013a).

The major limitation however seems to be the sample size. This limitation in sample size did not allow to generalize the findings to other work sectors. Moreover this sample size forced the research design to be adapted. This decision had to be made to make sure that there was sufficient statistical power to detect differences between a control group and an intervention group. As opposed to a research design with intervention groups to individually assess each intervention, which requires a significant larger amount of data. Therefore the effect of each of the interventions could not be studied separately. This limits the information on successful elements of each intervention. In addition, in hindsight, the positive work reflection should have been formally prescribed due a longer period. This intervention seemed to be more effective than any of the other two interventions, although the positive work events intervention has been given the most attention. This intervention was executed during the full duration of this study due to the centrality of the affective events theory framework which states the importance for positive work experiences upon positive affect.

Despite the sample-size, and the relatively high drop-out rate based (which was expected based on previous studies), some significant results were found. The design furthermore allowed to make clear comparisons between control- and intervention groups, using longitudinal data. This allowed to not only compare the pre-and post-measure, but also to relate the data to the pattern over the intermediate weeks. Another strength of this research is that the variables of which relatively little is known are addressed, thereby increasing the possibility to contribute to the industrial and organizational psychology field. As a final remark the quality of the data, based on the sample characteristics, is strong. Whereas some see it as a limitation to not be able to make a statement regarding certain work sectors, this could actually be beneficial. The heterogeneity of the sample population allows one to be more general in the findings regarding the effectiveness of the intervention upon the average worker.

Conclusions and practical implications

This study investigated the relationship between interventions aimed at three work-related entities (i.e. positive work events, positive work reflection and capitalization), positive affect and work-related performance measures. Positive affect is likely to be enhanced by these interventions, although in the present study the increase was not statistically significant. Regarding the effectiveness of these interventions, no evidence was found that these interventions significantly increased the purpose (the extent of capitalization, positive work reflection or occurrence of positive events) for which they were primarily developed.

However the positive work reflection intervention did strengthen the influence of positive work reflection on positive affect whenever actively executed (i.e. with directed effort and motivation). Moreover certain elements of each of the interventions seem to have contributed towards the boost in positive affect experienced by the intervention group. A significant positive relationship was even found between the increase in happiness due to the interventions and the level of contextual performance. The results of this study, although limited in generalizability due to the sample size ($N = 40$), do seem to indicate that this type of interventions have the potential to contribute towards positive affect and indirectly towards work-related outcomes.

The increase in contextual performance, associated with the intervention group due to their change in happiness, is relevant for any sector since contextual performance benefits any organization. Among others by reducing employee's turnover (Van Scotter, 2000) and influencing overall performance of an individual by 12-34% (Motowidlo & Van Scotter, 2004). In addition to this, a happier workforce is beneficial in itself because of its influence upon pro-social behavior upon the work floor. Companies and co-workers thereby benefit from interventions aimed at enhancing positive affect, and presenting those to employees, can allow both organizations to flourish and individuals to enhance their subjective well-being. The happy worker is thus a productive worker, and a chance to remain happy should not be neglected. Thus be grateful for the good and appreciate what happens to you, because not everything comes around twice.

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