

WORK IN PROGRESS REPORT

Does Creativity Make You Happy? The Influence of Creative Activity on Hedonic and Eudaimonic Well-being

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The purpose of this study is to investigate if a change in psychological well-being can result from engagement in creative activity. In an online experimental study participants will be randomly assigned to solve either a creative or a non-creative task. Their experience of completing the task will be compared with their average daily well-being level. Involvement in a creative task is expected to boost both positive feelings (hedonic well-being) and good functioning (eudaimonic well-being). Personal characteristics, such as a need for closure, and task features, e.g. difficulty level, will also be tested for their moderating effects.

Keywords: happiness; well-being; creativity; hedonia; eudaimonia

Editor's Note

This work in progress report (WiP) was developed by the 2013–2014 cohort of the Junior Researcher Programme (JRP), a service supported by the European Federation of Psychology Students' Associations (EFPSA). During the course of the JRP calendar, the six research groups that are initiated via the European Summer School submit the WiPs of their research to the Journal of European Psychology Students (JEPS). The WiPs are short methodology papers that outline steps undertaken by research groups in developing and carrying out a research project in the context of low-resource, independent, student-driven, cross-cultural research. The WiPs are submitted prior to project completion to enable the authors to improve their research according to the comments resulting from the peer-review process. WiPs also support the dissemination of methods used by student-driven, independent research

projects, with the hope of informing others carrying out such work.

The 2013–2014 cohort was inducted into the JRP at the European Summer School 2013, held in Voeren, Belgium.

Introduction

Creativity is conceptualized as the generation of ideas, insights, or solutions that are both novel and potentially useful (Amabile, 1990). With the growth of positive psychology researchers became interested in the link between creativity and well-being. However, there is still a need for research which explains the experience of creativity not only in relation to "feeling good", but also "functioning well" (Vitterso, 2013). The main goal of this study is therefore to explore whether solving creative tasks can enhance well-being.

Recent attempts at reaching one cohesive definition of well-being have led to an ongoing debate about its constituent parts and measurement (see Kashdan, Biswas-Diener, & King, 2008, and the subsequent discussion). Followers of the hedonic approach conclude that well-being equates to a state of feeling good about one's life and it can be successfully measured by the experience of pleasure in a given moment (e.g., Kahneman, 2000). Despite the advantage of being easily defined and measured, many scholars consider the hedonic approach too simplistic and narrow (e.g., Huta & Waterman, 2013). They argue that well-being is characterized by experiences congruent with one's interests or values and prompted by participation in meaningful activities. However, empirical evidence shows that hedonia and eudaimonia may also operate together as elements of the same dynamic processes (e.g., Huta & Ryan, 2010). In the following study we will therefore consider both as co-dependent indicators

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contributing to well-being in a parallel and not mutually exclusive way.

Most researchers have investigated the relationship between creativity and well-being by focusing on feeling states and long-lasting moods. Two meta-analyses confirmed a connection between positive mood and enhanced creativity, with two different explanations leading to this conclusion. According to Davis (2009), the mood-creativity link depends on the context and relates specifically to the ideation phase of the creative process. Baas, De Dreu, and Nijstad (2008) suggest that the mood-creativity link depends on hedonic tone (if the mood is positive or negative), the level of activation (if the mood is activating or deactivating) and the regulatory focus (if the mood promotes action or prevents action). However, none of these findings account for the connection between eudaimonic well-being and the creative process.

Most of the studies have looked at the relationship between creativity and wellbeing from one direction, usually focusing on how well-being influences creativity. However, evidence suggests that the relationships between mood and cognitive processes are reciprocal and bidirectional (Bar, 2009). Chermahini and Hommel (2012) have suggested that divergent thinking can increase positive mood states, with convergent thinking having the opposite effect. Thus, in this study we conceptualise creativity as divergent thinking, rather than ingenious ideas or outcomes.

Creativity flourishes when exploration, independent work and originality are supported (Amabile, 1990). Therefore, creativity tests are built on the assumption that solving specially designed tasks can activate creative processes. In many tests creative behavior is assessed on the dimensions of fluency, flexibility and originality (Guilford, 1967). In the present study we assume that the same criteria can be applied to evaluate the extent to which a task activates creativity. Specifically, a task triggers fluent thinking when it has many different solutions. Flexible thinking is elicited by tasks which require participants to switch between distinct semantic categories. Finally, a task facilitates self-expression when it enables individuals to approach a problem in an original and uncommon way. Thus, the creative tasks in this study were designed to facilitate divergent thinking, characterised by features of flexibility, fluency and originality.

The aim of this study is to investigate how solving a creative task can influence well-being. It is hypothesised that participants who engage in a creative task will have increased levels of both positive feelings (hedonic) and functional (eudaimonic) well-being. It is also assumed that the impact of the creative task will be moderated by personal characteristics (such as personal growth orientation or neuroticism), as well as by task characteristics such as the perceived level of difficulty of the creative task.

Method

The online study is being conducted in six European countries (Austria, Italy, Ireland, Poland, Sweden and the UK). The experiment takes the form of a 2x3 design with two

groups (experimental and control) and three tasks (easy, medium and difficult). Stable personal characteristics that are known to influence momentary emotions (e.g., neuroticism) are measured first. Participants' well-being level is pre-tested with reference to the previous day. Those randomly assigned to an experimental condition solve a task designed to facilitate creative processes. A control group completes an equivalent non-creative task. Within conditions participants choose one task to complete, based on their personal preference, from a selection of three tasks with different levels of difficulty. This choice is given to maximize the likelihood that participants will engage in a task that matches their skills and interests. Post-test questionnaires enable us to detect any changes in well-being (outcome variable) following engagement in the task. Questions about participants' involvement in the task, perceived difficulty level, self-assessed creativity and satisfaction from the result will all serve as an experimental control.

Experimental tasks

We adapted three tasks commonly used in creativity tests. In the easy version participants are presented with a cartoon style picture and asked to list as many titles for the picture as possible (Sternberg, 2006). The medium difficulty task is a modified version of Guilford's Alternative Uses task (Guilford, 1967). Participants are presented with both a word and a picture of a rubber-band and asked to list possible uses for it. The most difficult version was inspired by Torrance's product improvement task (Kim, 2006). Participants are presented with a picture of a table and asked to list possible modifications to it in order to improve its functioning for a target population (individuals with a visual impairment).

For the control condition we modified and restricted the tasks to make them non-creative. In the easy version participants are instructed to spot the differences between the two cartoon slides. In the medium version participants read a narrative and answer a number of questions about it. In the difficult version participants write assembly instructions for a chair based on graphic illustrations provided.

Validation study

A validation test was conducted to confirm the distinguishing criteria between creative and non-creative tasks. We asked 30 psychology or social sciences students and graduates to be our competent judges (5 per country). They rated the six tasks on the creativity criteria (fluency, flexibility and originality) and estimated their difficulty level. They also judged if tasks were engaging, understandable and manageable. On average the creative tasks were perceived as more imaginative than the non-creative tasks, $t(166) = -9.49, p < .001$. All experimental tasks were judged as being more creative than the corresponding control tasks. Furthermore we found a significant effect of difficulty, $F(2, 176) = 58.00, p < .001$. The easy and medium tasks were rated as less challenging than the difficult tasks. However, there was no difference between the easy and medium tasks. Most judges (83%)

Variables measured	Scale based on	Reference
<i>Personal characteristics</i>		
Motives for activities	Hedonic and Eudaimonic Motives for Activities Scale	Huta & Ryan, 2010
Neuroticism	Abbreviated Form of the Revised Eysenck Personality Questionnaire (EPQR-A)	Francis, Brown, & Philipchalk, 1992
Extraversion	EPQR-A	Francis et al., 1992
Personal Growth	Personal Growth Initiative Scale	Robitschek et al., 2012
Need for closure	Brief Need for Closure Scale	Roets & Van Hiel, 2011
<i>Hedonic well-being components</i>		
Positive and negative affects	Basic Emotions State Test	Vitterso & Dahl, 2013
<i>Eudaimonic well-being components</i>		
Mindfulness	Mindful Attention Awareness Scale	Brown & Ryan, 2003
Basic psychological needs satisfaction	Basic Psychological Needs Scales at Work Scales	Deci et al., 2001
Energy level	State Level of Vitality Scale	Ryan & Frederick, 1997

Table 1: List of questionnaires used in the study.

rated the creative tasks as engaging, compared to 51% for the non-creative tasks. Moreover, almost all judges (92%) thought that the tasks were understandable and 83% considered them to be manageable. The results of the validation study confirmed that the tasks were suitable for the experiment. Only minor modifications were necessary, for example the difficulty level of the medium non-creative task was adjusted to match the medium creative task.

Questionnaires

Two sets of questionnaires are being employed in the study (see **Table 1**). Control measures of personal characteristics are provided just once, before the experiment. These include: stable tendencies to experience positive and negative emotions (e.g., I'm a worrier), generalized motives for activities (e.g., I'm seeking fun), intentional engagement in personal growth (e.g., I take charge of my life), and the tendency to avoid uncertainty (e.g., I dislike unpredictable situations). Well-being components are measured twice (pre and post-test). Before the task, average daily well-being is assessed by means of the Daily Reconstruction Method (DRM) (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). In reference to episodes from the preceding day, participants report their affect (e.g., feeling joyful or angry), activation (e.g., feeling energetic), awareness and functioning levels (e.g., feeling autonomous, engaged and competent). In the post-test questionnaires participants rate their experience using the same items: affect, activation and functioning. Experimental manipulation is controlled by asking participants how creative, difficult, engaging and familiar they found the task to be.

Participants

We aim to recruit 600 participants (100 per country) using a convenience sample. A meta-analysis revealed that the average number of participants in the mood-creativity research is 81 (Baas, De Dreu, and Nijstad, 2008). Therefore, we assume that a 100-person sample will be required for analyses within countries. Potential participants are contacted via personal messages, social networks, university research participation sites and workplace contacts. Due to our recruitment strategy we anticipate that our sample will predominantly comprise of students and young adults who are familiar with an online context.

Proposed analysis

Data will be analyzed by means of the Analysis of Covariance (ANCOVA). This method allows testing for differences between groups when other variables affect an outcome. The baseline measurement (average well-being level from the previous day) and control variables (e.g. personality traits, perceived difficulty adjusted according to the difficulty level of a solved task) will be included as covariates. This strategy was shown to have more power than repeated measures ANOVA (i.e., change from the baseline) when groups are assigned at random (van Breukelen, 2006). Analyses will first be conducted with respect to nationality clusters, and the measurement invariance of scales used will be tested using multi-group confirmatory factor analysis. In case of measurement invariance violation, the effects of site (country) will be controlled for in the combined analysis. Furthermore, extensive evaluation is planned through Structural Equations Modelling to analyze multi-method data obtained

for well-being outcomes (Crayen, Geiser, Scheithauer, & Eid, 2011).

Ethics

All collaborators are affiliated with their Universities; therefore ethical issues were addressed within institutional ethical committees. Ethical approval was granted in the UK, Italy, Sweden, Austria and Poland. In Sweden the study is a part of a comprehensive project regarding creative work and its consequences for well-being. The project was approved by the Regional Ethical Review Board in Stockholm. The ethical application fee was funded by the Stockholm Stress Center.

Practical

Data collection

Data is being collected and stored using the online survey tool Qualtrics. Where possible, we used the culturally-adapted and officially validated versions of a scale. Otherwise the scales were double-translated into German, Swedish, Polish and Italian by the researchers, and then reviewed by another native speaker.

Group work

During the European Summer School 2013, we subdivided the group into the debate and the methodology club. The former is led by the Project Manager and focuses on reviewing the literature, writing argumentations and overseeing publications. The latter is guided by the Lead Analyst and deals with methodological issues, for instance the design of the study, the procedure, the online experiment, data storage, security and analysis. The Supervisor is the facilitator and advisor for general research questions. She is supported by the Communications Officer (CO) in maintaining the time schedule, managing resources, tracking the progress of both subgroups and ensuring efficient communication between the group and external figures. Each role has a vice candidate who takes over responsibility in the case of absence.

Skype and Teamspeak are used for weekly subgroup or whole group meetings. The project board Trello is used for discussing ideas, organizing tasks and tracking changes in both subgroups on a daily basis. The whole group, with the exception of one person, met in Stockholm at the end of November. This helped to strengthen the group's commitment and to make important decisions about the validation study and further work plans.

Prospective discussion

Data collection is ongoing. Based upon the validation study and in accordance with the literature review, we expect creative tasks to be more interesting and engaging, hence resulting in higher levels of well-being. If this is confirmed, our analyses will focus on possible moderators of this relationship. A possible limitation of the study may include the lack of a representative sample. This issue is further exacerbated by the use of an online context, which makes it difficult to control participants' recruitment as demographic information might be questionable. Furthermore, in an online context it is not possible to moni-

tor participants' focus on the experiment and control for confounding environmental factors. Hence, it is recommended that further research is undertaken in an offline setting. It is anticipated that our results will contribute to knowledge about positive interventions (actions undertaken to enhance one's psychological well-being), and will help in understanding drivers and consequences of creative work.

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