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Revisiting the Praise Paradox: An Action-Control Perspective on Negative Affect and Idea Generation

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Abstract
Building on personality-systems-interactions (PSI) theory, we analyze how individuals’ action control influences the originality of the ideas they generate when experiencing negative affect. We use a pre-test/post-test experimental design with 328 participants that captures dynamic effects between negative affect and idea generation. The patterns we identify provide a detailed understanding of how individuals’ action control determines the kind of feedback needed to increase originality. Thereby, we provide important new insights for research on the generation of original ideas that are necessary for entrepreneurs and organizations that aim to generate novelty and differentiate themselves from others.

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Abstract

Building on personality-systems-interactions (PSI) theory, we analyze how individuals’ action control influences the originality of the ideas they generate when experiencing negative affect. We use a pre-test/post-test experimental design with 328 participants that captures dynamic effects between negative affect and idea generation. The patterns we identify provide a detailed understanding of how individuals’ action control determines the kind of feedback needed to increase originality. Thereby, we provide important new insights for research on the generation of original ideas that are necessary for entrepreneurs and organizations that aim to generate novelty and differentiate themselves from others.
Introduction

Prior research has highlighted the important role of creative ideas as a stepping-stone for innovation and business venturing (e.g., Amabile et al., 1996; Oldham and Cummings, 1996; Baron and Tang, 2011; Vogel, 2016). Entrepreneurs and organizations that strive to be innovative aim to generate novelty and to differentiate themselves from other participants in the market (Frese et al., 2014). They are often advised to improvise to deviate from common practice (Baker and Nelson, 2005; Sarasvathy, 2001). Accordingly, if innovation is to be ground-breaking, individuals need to generate non-standard ideas (Janssen, 2003). Indeed, original ideas are often the precursor for breakthroughs to improvement, new products, and processes, and potentially deliver the greatest success and returns (Taylor and Greve, 2006). One outstanding idea can be worth more than a plethora of mediocre ideas (Girotra et al., 2010). Nevertheless, ideas that lead to ground-breaking innovation (rather than to smaller adaptations of existing solutions) may cut across traditional boundaries and hence be less likely to be immediately accepted (Isaksen et al., 2003). Therefore, before an idea turns into an opportunity that is subsequently pursued, it is continuously shaped and refined; this process takes time and ‘does not take place in isolation but is embedded in the social and environmental context’ (Vogel, 2016, p. 6). Based on this rationale, the generation of original ideas should be disentangled from idea implementation as an innovation, or the pursuit of ideas as a business opportunity that becomes implemented (Dimov, 2007). Accordingly, there needs to be a solid foundation of knowledge about how to generate something original (Lomberg et al., 2016).
One aspect that has received considerable attention in this regard in neighboring literature, such as psychology and creativity, is the relationship between affect\(^1\) and idea generation (cf. Davis, 2009 for a review). For original idea generation in particular, affect seems to be crucial (e.g., Baas \textit{et al.}, 2008). This is not surprising as goals with a focus on originality and uniqueness are difficult to pre-define, and prior research has shown that in rather uncertain settings, affect triggers strikingly different styles of information processing (e.g., Forgas, 2000; Schwarz, 2002; Baron, 2008). In fact, affective states can be seen as one of the most dominant factors influencing originality (e.g., Davis, 2009; Baas \textit{et al.}, 2008).

Whereas the influence of positive affect on originality has been demonstrated extensively by prior research (cf. Davis, 2009 for a review), most recent research on the broader aspects of creativity and work engagement points out that individuals need to experience a short episode of negative affect, which they must overcome to maximize their creativity (Bledow \textit{et al.}, 2013; Bledow \textit{et al.}, 2011; George and Zhou, 2007). This is based on the rationale that negative affect signals a discrepancy between a desired future outcome and the status quo that requires action to change the situation (Foo \textit{et al.}, 2009). Negative affect enables individuals to draw attention to the task at hand (George and Zhou, 2002) and allows them to focus, be persistent, and painstakingly analyze what needs to be done (Kuhl, 2000; De Dreu \textit{et al.}, 2008). Most notably, negative affect causes individuals to be more critical and discerning (George and Zhou, 2002). Because it takes longer to become satisfied with a solution when in a negative state, the generation of ideas that are particularly novel and unique might be facilitated when in an aversive affective state.

\(^1\) In considering individuals’ affective states, it is important to be clear about what type of affect is being studied. Following work in psychology (e.g., Damasio, 2001) and entrepreneurship (Baron, 2008; Cardon \textit{et al.}, 2009; Foo, 2011), we use affect as an umbrella term reflecting a broad and inclusive label that refers to emotions, feelings, and moods. In particular, we focus on an individual’s current state of negative affect, which refers to shifts in current subjective feelings produced by external events (Baron, 2008) or internal self-regulatory mechanisms (Kuhl, 2000).
However, negative affect also impedes goal-directed behavior (Simon, 1967) because it makes it more difficult to disengage from irrelevant concerns and thereby provokes a tendency to rumination (Koole and Jostmann, 2004). In other words, negative affect leads to a decoupling of intended behavior and actual action (Jostmann and Koole, 2006; van Dijke et al., 2013). Before action is possible again, negative affect has to be reduced (Kuhl, 2000; Bledow et al., 2013). However, individuals do not invariably engage in such a down-regulation of affect (Jostmann, et al., 2005).

Therefore, we do not suggest that the benefits of negative affect are an automated mechanism that leads to original ideas. In fact, we propose that the beneficial effects of negative affect only hold for certain individuals, namely those able to cope with negative affect. Conversely, for individuals unable to cope with negative affect, we suggest that external support is necessary for them to benefit from the initial negative affect. Otherwise, negative affect might be detrimental to their originality. Adding to the model from Bledow et al. (2013), we specify how high levels of negative affect can be reduced. That is, we add complementary insights from personality-systems-interactions (PSI) theory (Kuhl, 2000) and suggest that negative affect can be down-regulated in two ways: (1) via internal regulation (i.e., emotional self-regulation), and (2) via external stimuli (e.g., feedback). Accordingly, we look at internal and external origins of change in negative affect when seeking to answer the research questions: How do personality differences in action control (i.e., the ability to self-regulate affect) influence the relationship between (1) initial negative affect and originality in idea generation, and (2) feedback perception and originality in idea generation?

To address our focal research questions, we chose an experimental design with repeated measures, that is, a pre-test/post-test experimental design with 328 highly qualified, full-time
individuals working in an environment where original ideas are relevant. Importantly, our research design allows the capture of dynamic effects by analyzing repeated measures of original idea generation. Thereby, we contribute to a better understanding of the very early stages of the entrepreneurial process, on which there seems to be limited profound knowledge available (cf. Hill and Birkinshaw, 2010). Although research that examines the role of business opportunities has increased tremendously in recent years (cf., Short et al., 2010), entrepreneurship scholars have criticized the lack of distinction between the origins of the first idea and the antecedents of the opportunity that is ultimately implemented (e.g. Vogel., 2016; Dimov, 2007). We build on neighboring literature, such as psychology and creativity research, and we follow Vogel’s (2016) call for studies on idea generation that investigate ‘individual factors […] and external factors’ by using a ‘research design which is informed by creativity literature [that] might lead to promising insights for entrepreneurship research’ (p. 20). Specifically, we provide an understanding of how—based on differences in action control—individuals benefit best from different external activations of affective states in order to fully unfold their originality. In turn, this will help us arrive at a better understanding of this important stepping-stone for venture opportunities, and also for a plethora of other settings where original ideas are needed (e.g., corporate entrepreneurship and corporate innovation) and how they are triggered.

In the remainder of this paper, we will first outline the central tenets of PSI theory, including personality differences in action control. We then develop a set of hypotheses based on how these differences play out in the ability to generate original ideas in different situations that trigger different affective states. We describe the method and results of our empirical testing and discuss the findings in light of their contribution to research in entrepreneurship and neighboring literature, and we provide suggestions for managerial implications.
PSI Theory and Personality Differences in Action Control

PSI theory is a self-regulation theory that explains goal-related behavior (volitional action). It is based on volitional action control (Kuhl, 1984; 1994). The importance of volitional control has been stressed in pioneering works about entrepreneurship (e.g., Brazeal and Herbert, 1999; Bygrave and Hofer, 1991) as well as in recent studies (e.g., Van Gelderen et al., 2015) to explain the link between entrepreneurial intentions and the initiation of entrepreneurial action. Volitional action control refers to a set of cognitive control processes (such as the inhibition of unwanted or impulsive behavior and the self-regulation of emotions) that support the realization of intentions (volitional action) (Goschke, 2013; 2014; Kuhl and Goschke, 1994).

In contrast to other self-regulation theories that focus on rather stable cognitive content and behavior (e.g., self-efficacy), PSI explicitly emphasizes a dynamic interplay between affect, cognition, and behavior (Kuhl, 2000). More specifically, PSI theory assumes that a hierarchy of cognitive regulatory systems mediates the relationship between motivation and behavior (Koole et al., 2005). At the lower level of the hierarchy, behavior occurs through automatic programs and intuitive behavioral controls (e.g., reflex responses). At the higher level, complex behaviors are controlled by more sophisticated memory structures, which are responsible for analytic processing. Enacting complex cognitive tasks, such as original idea generation, requires a coordinated interplay between lower and higher levels of the hierarchy. Such coordination between the cognitive systems is controlled by intuitive state changes in affect (Kaschel and Kuhl, 2004; Kuhl, 2000).

PSI theory states that individuals differ in their ability to self-regulate affect (Kuhl, Kazén, and Koole, 2006). This difference is called action control. Individuals can be either action-oriented or state-oriented. An individual’s action control style has its roots in both
dispositional and situational factors (Kuhl, 1994). For example, in extreme (e.g., life-threatening) situations, almost everyone is bound to be state-oriented. We focus on dispositional action control, which is quite stable and based on prior experience when individuals have used their self-regulatory capacity to optimal effect.

Dispositional action control regulates how people cope with their initial affective responses (Kuhl et al., 2006; Kuhl and Koole, 2004). That is, the dispositional difference in action control determines how well individuals are able to regulate their emotions in different situations. Accordingly, individuals who are highly action-oriented are likely to be especially skilled at intuitive affect regulation, whereas individuals who are low on action-orientation—that is, state-oriented individuals—lack such intuitive-affect regulation skills. Indeed, action-oriented individuals have been shown to be more capable than state-oriented individuals in self-regulating affect (for a review, see Diefendorff et al., 2000).

Because of the modulatory role of affect, circumstances that influence an individual’s affective states have profound implications for volitional action such as idea generation. Affect can arise from purely cognitive or purely affective sources, or from both sources simultaneously (LeDoux, 1996). Although high levels of negative affect often naturally occur together with low levels of positive affect (and vice versa) and are often triggered by identical conditions (cf. Koole et al., 2005), the functional roles of positive and negative affect are different (cf. Ashby et al., 1999). Accordingly, PSI theory distinguishes between coping with a lack of positive affect and coping with negative affect (Baumann et al., 2005). As we are mainly interested in the impact of negative affect on idea generation, our particular focus is on differences in action control when coping with negative affect.
As a whole, PSI theory emphasizes behavioral outcome differences between individuals, based on the ability to regulate affective states. Most notably, PSI explains the causal order of how personality differences—with regard to cognitive control processes—determine the ability to regulate affective states that translate into behavior (Diefendorff et al., 2000; Kanfer, 1990; Kuhl and Beckmann, 1985; Kuhl et al., 2006; Kuhl and Koole, 2004). Furthermore, PSI states that the inability to cope with negative affect prompts a state of hesitation that prevents action. Therefore, the theory seems well-suited to our theoretical foundation. As affective states can arise through both self-regulatory mechanisms (Kuhl, 2000; Koole and Jostmann, 2004) and through external stressors, we add personality differences in self-regulating affective states to our model alongside the effects of external affective stimuli.

**Hypothesis development**

Recent findings in the creativity literature highlight that negative affect plays an important role in creative outcomes (Bledow et al., 2011). Although the presence of positive affect alone would allow for creative outcomes (Baas et al., 2008), a prior episode of negative affect unleashes the maximum ability to generate creative ideas by detecting and analyzing the task at hand, thereby eliciting progress (Bledow et al., 2013).

In PSI theoretical language, high levels of negative affect activate low-level cognitive system object recognition, while high-level cognitive system extension memory remains inactive (Kuhl, 2000). When low-level cognitive system object recognition is activated, individuals are disproportionately alert to discrepancies and contradictions. Object recognition further promotes an irrational approach to information processing that allows for object contextualization (Kaschel and Kuhl, 2004). Negative affect therefore seems to be helpful for radical innovation and problem solving that diverge from common contexts, solutions, and usages.
However, an increase in negative affect also deactivates high-level cognitive system extension memory. Extension memory provides a vast network of past experiences and implicit knowledge (Kuhl, 2000). When extension memory is deactivated, individuals cannot rely on prior routines and experience (Kuhl et al., 2006). Thus, access to extension memory is important to integrate the uncommon solution into the big picture. Yet, it is only when the negative-affect level decreases that extension memory becomes activated again (Jostmann and Koole, 2006). Consequently, the presence of negative affect alone, without the ability to down-regulate it, should impede originality as it hinders individuals from making sense of situations (Baumann and Kuhl, 2002). The detected anomaly would more likely be seen as a problem rather than a novel solution. Accordingly, initial negative affect should only result in more original ideas when reduced, again, either via self-regulation mechanisms or external conditions.

According to PSI theory, state-oriented individuals lack the ability to cope with high levels of negative affect themselves (Kuhl, 2000). Thus, when experiencing high initial negative affect, state-oriented individuals are presumed to be in a state of rumination and unable to overcome this rumination by themselves (Koole, et al., 2005). Consequently, they are indecisive, hesitant to change, and ineffective at enacting their plans (Jostmann and Koole, 2006; van Dijke, et al., 2013). Indeed, prior studies have shown that state-orientation correlates positively with procrastination (Beswick and Mann, 1994; Blunt and Pychyl, 1998).

Conversely, action-oriented individuals are presumed to be highly skilled at coping with negative affect (Jostmann and Koole, 2006). In particular, when a task is a non-routine task that includes effective mental functioning, action-oriented individuals seem better able to ‘get a grip on their feelings,’ which enables them to overcome intrusive thoughts or indecisiveness, or to ignore distractions (Koole and Jostmann, 2004). Based on the ability to effectively down-
regulate negative affect, action-oriented individuals can effectively disengage from irrelevant concerns and stay focused until tasks are completed. Accordingly, even in situations that evoke high levels of negative affect, action-oriented individuals flexibly allocate their cognitive resources for the purpose of executing the tasks at hand by down-regulating their negative affect, which in turn leads to enhanced performance efficiency (Kuhl, 1994). Indeed, action-oriented individuals are usually better at effective decision-making (Stiensmeier-Pelster, 1994) and complex-task fulfillment (cf. Jostmann and Koole, 2006).

Adding this difference in action control to recent findings in the creativity literature (Bledow et al., 2013), we specify that only action-oriented individuals should benefit from initial negative affect. Initial negative affect allows them to experience the negative affect necessary for drawing attention to the task and undertaking analytical thinking, and—by self-regulating their affective states—also the positive effect of the down-regulated negative affect (Bledow et al., 2011). Conversely, we expect state-oriented individuals who experience an initial negative affect to remain inactive due to dwelling on intrusive thoughts, or hesitating. We postulate:

**Hypothesis 1:** Action control moderates the effect of initial negative affect on originality in such a way that negative affect:

a) decreases originality for state-oriented individuals

b) increases originality for action-oriented individuals

Affective states are not only provoked by self-regulation mechanisms. In fact, the external environment influences the affective state of individuals in many ways. The most direct instrument for provoking emotions is giving feedback to individuals. Positive affect occurs when external feedback matches or exceeds an individuals’ opinion about their own performance. Negative affect, however, occurs when individuals receive feedback that is worse than their own
evaluation of a task. In this regard, it is not surprising that prior research has shown that supervisor feedback strongly influences employees’ originality (e.g., Zhou, 1998).

As mentioned earlier, state-oriented individuals lack the ability to self-regulate negative affect (cf. Hypothesis 1). However, state-oriented individuals might benefit from emotional support in terms of positive feedback. Positive feedback should help state-oriented individuals to down-regulate negative affect and thereby overcome their state of hesitation and rumination, as suggested by PSI theory (Kuhl, 2000). Given that state-oriented individuals will benefit considerably from external support, they may be especially receptive to emotional support. In fact, research has shown that emotional support enables particularly state-oriented individuals to ward off feelings of self-doubt (Hetts et al., 1999). Therefore, while we assume that state-oriented individuals lack the ability to self-regulate their negative affect, we expect them to benefit from supportive feedback that helps them to down-regulate their negative affect.

Conversely, for action-oriented individuals, we suggest self-regulation of affective states (cf. Hypothesis 1). Therefore, positive feedback on already down-regulated initial negative affect would not influence their originality. In fact, positive-affective support might even undermine the positive influence of negative affect. However, as action-oriented individuals are presumed to be capable of down-regulating negative affects by themselves, they would, in turn, benefit from being brought back into a short episode of negative affect once their initial negative affect has been down-regulated. Consequently, whereas we expect state-oriented individuals to benefit from positive feedback in order to down-regulate negative affect, we expect action-oriented individuals to benefit from negative feedback in order to experience negative affect.

Accordingly, we postulate:
Hypothesis 2: Action control moderates the effect of feedback perception on originality in such a way that feedback perception:

a) increases originality for action-oriented individuals when perceived as negative

b) increases originality for state-oriented individuals when perceived as positive

Experimental design

We use a pre-test/post-test experimental control group design that we conducted online. We measured originality before and after treatment, that is, feedback on participants’ performance. The twofold measurement of originality enables us to analyze the effect of negative affect without external stimulus (i.e., feedback) and also to analyze the effect of externally induced affective states on originality. When analyzing the effect on originality after the treatment, we take into account the base level of originality by controlling for results from the creativity task before the treatment ($t_0$). The design thus permits the removal of consistent individual differences in participants’ creativity levels and isolates the treatment effect on originality.

Sample and procedure

The database for our study consists of alumni from a large business school ($N=1,575$). To ensure commitment, we contacted each person personally via e-mail. We provided information about the purpose of the study, the study’s duration, and contact information for feedback and questions, and we asked all those approached to confirm their willingness to participate in the study. In addition, we asked individuals whether they were currently working full-time in a job that requires creative ideas. People answering positively to all three questions received final
invitations to participate in the study, which included a link to the online experiment (N=1,481). Of the identified sample, 469 highly qualified practitioners working full-time in a creativity-relevant work environment participated in our study (response rate: 31.7%). Therefore, our sample constitutes a relatively homogenous group of people with regard to human capital and working environment, which increases the reliability of differences in idea-generation tasks being caused by the treatment and no other factors.

As our study was conducted online, we asked participants to avoid a priori potential interferences that may occur during the tasks. That is, before starting the experiment, we asked them to close their doors, mute their cell-phones, or re-direct their landline phones. After the tasks, we asked them whether any disturbances occurred. We excluded those indicating that they had been disturbed during the tests (N=57). For our final sample, we further excluded those participants who did not receive feedback (N=84). We based our analysis on 328 participants.

Participants started the experiment by rating their initial negative affect and proceeded with the first idea-generation task (t₀) in which we asked them to develop as many original ideas as possible. After 120 seconds, the page switched automatically to the next page. Subsequently, participants were confronted with either negative or positive feedback. The feedback was randomly assigned to them. Participants proceeded with the second idea-generation task (t₁) in which they again had 120 seconds to produce original ideas. We then asked them to evaluate the perceived feedback. The sequence of tasks and measures in our experimental design is shown in Figure 1.

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Insert Figure 1 here
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Measures

For our dependent variable—original idea generation—we used a subtest of Torrance’s test of creative thinking (1974), asking the participants to mention unusual usage possibilities for a tin and a simple cord. This test has been found suitable for measuring divergent productivity as a crucial component within the creative process (e.g., Kim, 2006). The test is equally uncommon for all participants and independent from their daily jobs. Although all participants worked in an environment that requires creativity, the task was unusual for them. We chose this unusual task in addition to the prior announcement of participants being evaluated on the outcome after their performance to mirror the uncertainty inherent in entrepreneurial and/or innovation activities.

The instructions for the two idea-generation tasks were: ‘List as many unusual uses for an empty tin [a simple cord] as you can think of.’

We randomized the order of the tasks. For both tests, two independent coders rated each unique idea for originality. Originality was defined as ‘an idea or suggestion that is infrequent, novel, and original’ (from 1 = not original to 5 = very original) (cf. De Dreu et al., 2008). The raters are experts in research about creativity, but were not otherwise involved in the study. They were trained on a test sample (n =103, r\textsubscript{wg} = 0.91). For the final sample, raters had to evaluate 5,902 observations. Inter-rater agreement (r\textsubscript{wg} = 0.99) was very high (LeBreton and Senter, 2007). The raters discussed the few observations upon which they disagreed. For further analysis, we used the value they agreed on following discussion. Each respondent generated on average 6.5 valid ideas for the tin (SD = 3.07) and 10.1 valid ideas for the cord (SD = 4.06). As our dependent variable is originality, we selected the highest score of the generated ideas for each respondent. Considering learning and order effects, we standardized originality ranging from 0 to 1 for each test. This allowed us to aggregate the participants into two groups, which differed only in terms of the feedback received.
We measured negative affect with the negative affect part of the positive and negative affect scale (PANAS) (Watson et al., 1988). The scale consists of 10 adjectives that are rated on a 7-point unipolar response scale, ranging from (1) not at all to (7) extremely. Participants were asked to indicate ‘How do you feel right now, that is, at the present moment’ before the first creativity task to determine the effect of the current affective state on their originality. The mean values of the items ranged from 1.1 to 5.9. Cronbach’s Alpha was 0.86, indicating high reliability. The feedback given after each of the two tests was either negative or positive. We randomly assigned participants to one of the experimental conditions, which resulted in a 2x2 (feedback x test order) in-between subject design with repeated measures. We adapted the comments for feedback conditions from previous studies (e.g., Oettingen et al., 2012; Zhou, 1998) and modified them to fit the purpose of the present study. The positive feedback (negative feedback in parentheses) reads as follows: ‘Out of a possible score of 30 points, you have received 27 (3) points. You are in the 90th (10th) percentile of the population. Your creative potential is far better than (way below the) average.’

For our independent variable action control, we divided participants into state vs. action-oriented individuals using the Demand-Related Subscale of Kuhl’s Action Control Scale (Kuhl, 1994; Diefendorff et al., 2000). The scale is based on 12 implicit self-representations. That is, each item describes a situation and a state-oriented and action-oriented way to respond. We asked the participants to indicate how they would react in the given situations. An exemplary item is: When I have to solve a difficult problem (a) I usually don’t have a problem getting started on it (b) I have trouble sorting things out in my head so that I can get down to working on the problem. In this case, answer (a) refers to action-orientation and answer (b) to state-orientation. We coded action-oriented responses as 1, and state-oriented responses as 0 and
summed them. Consequently, the scores for each dimension have a range of 0–12 points. The higher the score, the stronger the participants’ disposition toward action-orientation. As instructed by Kuhl (1994), we created a dichotomous variable. Scores ≥8 in the summed index indicate action-orientation (N=206) and scores <8 indicate state-orientation (N=122) (see also Jostmann and Gieselmann, 2014). The action control scale has sufficient reliability (Cronbach’s Alpha = 0.87) and adequate construct validity (see also Dieffendorf et al., 2000, for psychometric information).²

In addition, we asked participants for their perception of the received feedback. To check whether the participants accepted the feedback as an appraisal of their performance, we calculated the mean feedback valence with three items on a 5-point Likert scale anchored with negative, unpleasant, and demotivating (-2) and positive, pleasant, and motivating (2). Mean values range from -2 to 2. The perception of feedback has sufficient reliability (Cronbach’s Alpha = 0.85).

In addition to these measures, we recorded gender (coded 0 for females and 1 for males), and age as control variables.

Results

Feedback perception

In a first step, we measured participants’ perceptions of the feedback given. An ANOVA analysis reveals that those who received positive feedback—compared to those who did not receive positive feedback—scored significantly higher in their perception of feedback received (positive feedback: M = 3.5, SD = 0.6; negative feedback: M = 2.6, SD = 0.5; p >0.000). Thus, the

² We checked whether our results were robust when action control was treated a continuous variable. Regarding the dependent impact of negative affect (Hypotheses 1a and 1b), we find, as expected, no major effect of negative affect. The significant positive interaction coefficient of negative affect and action control confirms our results—namely, that negative affect is moderated positively by action-orientation (p < 0.05).
randomized provision of feedback to participants had the intended effect. As participants’ perceptions of the situation can be seen as their representations of the feedback presented and more immediately reflect the situation from participants’ perspectives, we used this perception of feedback for further analysis.

As a further check, we tested whether the control and treatment groups are comparable, except for their perception of feedback (cf. Table 1). As shown in Table 1, the two groups are similar as expected for age, originality test t₀, originality test t₁, and negative affect t₀, while there are some differences in the distribution of men and women. However, since gender is insignificantly correlated with originality performance in both t₀ and t₁, we do not see this as a threat to the results and we can perceive the treatment as successful.

Descriptive statistics and correlations

Our final sample consists of 218 (66%) men and 110 (34%) women, with ages ranging from 23 to 65 years (M = 32.4, SD = 6.8). Table 2 summarizes the descriptive statistics for the total sample and for the sub-samples of state-oriented and action-oriented respondents. Table 3 shows correlations for the dependent, independent and control variables. It reveals a significantly positive correlation between the two originality tests at t₀ and t₁ (r = 0.18; p < 0.01), a positive correlation between action control and originality test at t₀ (r = 0.16; p < 0.01), and a negative correlation between action control and negative affect t₀ (r = -0.14; p < 0.05). None of the remaining correlations were significant at p level < 0.05.
Hypotheses testing

In order to test our hypotheses, we applied stepwise linear regression models. For Hypotheses 1a and 1b, we applied the cross-sectional information and predicted originality at $t_0$, while for Hypotheses 2a and 2b, we applied the lagged data predicting originality at $t_1$, simultaneously controlling for originality at $t_0$. Given that we predicted a desirable outcome (originality) as opposed to an undesirable outcome (e.g., car accident or human disease), we report one-tailed 0.10 p values as being marginally significant. These marginally significant results related to our hypotheses should be interpreted with caution. First, in Table 4, we report results from the stepwise linear regression models for the full sample, finding no linear effect, but a marginal curvilinear effect of negative affect at $t_0$ on originality ($\beta = -0.092$; n.s.; squared term: $\beta = 0.017$; p < 0.10). Hypotheses 1a and 1b were then tested on the sub-samples of state-oriented and action-oriented respondents, respectively (cf. Table 4). We find a non-significant impact of negative affect at $t_0$ on originality in the state-oriented sample (model 5) and a significant positive effect of negative affect on originality at $t_0$ for the action-oriented sample in model 8 ($\beta = 0.037$; p < 0.05). The latter effect shows an interesting pattern. Given our scale range from (1)—corresponding to full disagreement with experiencing negative affect—to (7)—corresponding to full agreement with experiencing negative affect—those responding in the range of (1) to (4) essentially disagreed with being in a negative affective state. Therefore, the expected influence of negative affect on originality should only be prevalent within a score of (5) and higher. To capture this inherent curvilinear effect of the variable, we added the squared term of the negative affect in a model. As shown in model 9 ($\beta = -0.184$; p < 0.10; squared term: $\beta = 0.036$; p < 0.05) and graphically illustrated in Figure 2, the effect of negative affect is not linear, and the positive impact of negative affect is not prevalent before a certain level of negative affect. Together, this suggests a rejection of Hypothesis 1a and support for Hypothesis 1b.
Before testing Hypotheses 2a and 2b, we reported how feedback perception affects originality $t_1$ for the full sample (cf. Table 5), namely, finding no linear effect, but a marginal curvilinear effect ($\beta = -0.005$; n.s.; squared term: $\beta = 0.031$; $p < 0.10$). Hypotheses 2a and 2b were then tested in Models 6 and 9, respectively (cf. Table 5). In order to capture both the negative and positive range of feedback perception, we used the squared term of perceived feedback. The range from 0 to -2 denotes negative feedback perception, while the range from 0 to 2 denotes positive feedback perception. After controlling for originality $t_0$, and as illustrated in Figure 3, positive feedback perception has a marginal positive impact on originality $t_1$ for state-oriented respondents ($\beta = 0.053$; $p < 0.10$; squared term: $\beta = 0.054$; $p < 0.05$), whereas negative feedback perception has a positive impact on originality $t_1$ for action-oriented respondents ($\beta = -0.062$; $p < 0.05$; squared term: $\beta = 0.039$; $p < 0.10$). This provides marginal support for Hypothesis 2a and support for Hypothesis 2b.

Insert Tables 4 and 5 here

Insert Figures 2 and 3 here

Discussion

Our findings empirically establish differences in individuals’ action control and its impact on the relationship between affect and original idea generation. More specifically, our results indicate that only action-oriented individuals can generate original ideas when experiencing initial negative affect. Conversely, only state-oriented individuals can increase their originality when they receive external support in the form of positive feedback. That is, positive feedback is only beneficial for state-oriented individuals. Although our results only show a marginal effect, that
result shows a contrast with action-oriented individuals, because for them, positive feedback has no positive effect. However, as expected, negative feedback has a positive effect on action-oriented individuals’ originality. This can be explained by the fact that negative feedback brings action-oriented individuals back to experiencing an episode of negative affect.

Therefore, our results show that individuals might need markedly different external stimuli for idea-generation tasks. Consequently, our results offer an explanation as to how individuals differ in their ability to handle their initial affective states and feedback reactions, thereby specifying different sources for experiencing an episode of negative affect, as suggested by the prior literature on the affective shift model (Bledow et al., 2013).

**Contribution and implications for research**

Our findings have a number of key implications for research on idea generation in the context of new venture creation and corporate entrepreneurship, but also for broader (innovation-related) research domains, and for managerial practice.

**Original idea generation in the context of nascent entrepreneurship**

Although it is often mentioned that identifying an opportunity worth pursuing is the first stage of any entrepreneurial activity (McMullen and Shepherd, 2006), it is a long way from an initial idea through to the incubation process where the initial idea is shaped into a business opportunity (Dimov, 2007). Accordingly, original ideas do not automatically represent a viable venture opportunity—‘they may or may not lead to a creative product or service as they are explored, modified, transformed, extended, or even rejected on the basis of additional exploratory thought processes’ (Ward, 2004, p. 179). Although not a sufficient condition for a venture opportunity to emerge, original ideas that deviate from common practice form a necessary condition for an
venture opportunity, and it is necessary to analyze how individual factors and external factors shape the venture’s idea-generation process (Vogel, 2016).

We already know that both the entrepreneurial process and the ideation process are affect-laden (e.g., Baron, 2008). We also know that for creative achievements, a short episode of negative affect maximizes performance (Bledow et al., 2011, 2013; George and Zhou, 2007). Given that negative affect causes individuals to be particularly critical and discerning (George and Zhou, 2002), an episode of negative affect should be even more beneficial for generating original ideas, which do not need to be potentially useful at first sight, but are important for radical innovations and problem solving (Girotra et al., 2010).

Negative affect occurs when an individual experiences threats or an unexpected event. Unexpected situations occur often in activities that are characterized by undefined information and uncertainty. Venture creation is typically a non-linear process filled with obstacles, drawbacks, and uncertain future developments and outcomes (Dimov, 2007). Hence, the entrepreneurial context not only requires original ideas and solutions, but also frequently triggers negative affect. However, we know less about how individuals can decrease the important occurrence of negative affect. In this regard, our approach adds to our current knowledge by theoretically explaining and empirically testing the different effects of negative affect, depending on individuals’ personalities. More specifically, based on the tenets of PSI theory, we show that differences in action control among individuals play a key role in handling negative affect in the idea-generation process. We further show that the different reception of emotional support in the form of feedback depends on an individual’s action control.

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3 As compared to accidental discoveries (Vogel, 2016).
It is worth noting, however, that action-oriented individuals do not invariably self-regulate more effectively than state-oriented individuals. The difference plays out when negative affect is present, for example, when a situation is non-routine. The entrepreneurial process is often non-routine, but in other—less uncertain—situations, state-oriented individuals perform as well as their action-oriented counterparts (Baumann et al., 2005; Koole and Jostmann, 2004), and they might even outperform their action-oriented counterparts. Our research highlights the benefits for action-oriented individuals in situations when emotional support is lacking. The finding opens up research to examine boundary conditions for this effect and to investigate beneficial effects of state-orientation during the entrepreneurial process (cf. future research suggestions).

Our results further underline the relevance of including affect in ongoing efforts to investigate emotions in the context of entrepreneurship (Cardon et al., 2012; Patzelt and Shepherd, 2011; Baron et al., 2012) but also in corporate settings.

**Original idea generation in the context of corporate entrepreneurship/innovation**

While several researchers have examined why individuals leave employment to start their own ventures (e.g., Douglas and Shepherd, 2000, 2002), less attention has been paid to why individuals participate in corporate entrepreneurial activities. Likewise, scholars have long been interested in explaining the corporate environmental factors that encourage organizational members to act entrepreneurially (for two reviews, see Dess et al., 2003; Zahra, Jennings, and Kuratko, 1999). A fair amount is also known about firm-level conditions for corporate entrepreneurial behavior. Nevertheless, we know surprisingly little about the individual-level mechanisms that motivate and enable employees to participate in corporate entrepreneurial activities and generate creative ideas. Organizations can provide resources, formal approaches
and tools that encourage creative behavior within the organization; however, the source of innovation within organizations remains a function of individual effort (Bharadwaj and Menon, 2000; Dunlap-Hinkler et al., 2010). Among other key activities, the most essential tasks of corporate entrepreneurship can be seen in creating new knowledge and ideas that can be transformed into marketable products and services (Ardichvili et al., 2003; McGrath and MacMillan, 2000; Shane and Venkataraman, 2000). Therefore, employees contribute to organizational innovation by generating original and potentially valuable ideas concerning products, services, and processes (Zhou and George, 2001).

Our findings suggest that affect has a major influence on originality and thus on individuals’ primary ability to act entrepreneurially. The observed difference between action- and state-oriented individuals plays out when negative affect is present, for example, when a situation is non-routine. This is often the case in corporate entrepreneurship activities that are inherently uncertain. Hence, it is important to consider affective self-regulation when looking at the individual level of corporate entrepreneurship. Our results might therefore add to the small but growing number of studies that investigate individual-level factors in corporate entrepreneurship (cf. Brundin et al., 2008; Monsen et al., 2010; Shepherd and Krueger, 2002; Baron and Tang, 2011) by discovering the benefits for action-oriented individuals in uncertain situations and by providing an explanation of how employees can be encouraged to generate original ideas based on their action control. Increasing original ideas in a company might serve as a first vital step toward acting entrepreneurially.

Our results are also in line with the growing consensus that micro-level factors in the form of individual motivation and ability are related to macro-level factors such as firm performance (e.g., Ciavarella et al., 2004). The prior literature has already shown that creativity
is positively related to firm-level innovation (Baron and Tang, 2011; Amabile, et al., 1996; Oldham and Cummings, 1996). Analyzing the magnitude of positive influence on dispositional positive affect, Baron Tang, and Hmieleski (2011) have shown a curvilinear relationship between dispositional positive affect and innovation, and sales growth rate. Hence, after a certain level, further increments of positive affect might even have a negative influence. Original ideas, in particular, can be related to solving an existing problem, or to new practices, procedures, products, or services (Shalley and Perry-Smith, 2008). As such, original ideas can ultimately lead to inventions and innovations. By emphasizing the crucial role of individual differences in coping with negative affect for generating original ideas, and by demonstrating how individuals’ action control regulates the way in which affect influences their originality, we are able to explain why individual behavior varies despite the same (given and perceived) feedback, or the same initial affective state. The explanation of differences in the ability to self-regulate affect offers not only a fruitful explanation for why only some people can be motivated, but also for why some individuals with the same degree of motivation do not perform equally. Our work can therefore extend prior studies by adding a potential explanation for the empirical phenomenon that, despite strong motivation, performance differences abound.

**Managerial implications**

Our findings suggest that not every individual has the same ability to come up with a big idea that might lead to the next radical innovation. As a result, organizations need to be aware of the fact that the originality of their employees is not equally shared between them. While this might not be very surprising, our results further suggest that, in particular, the ability to self-regulate negative affect is vital to original idea generation. When employees can handle negative affect by themselves (i.e., when they are action-oriented), organizations should not try to interfere with
this ability. Supportive positive feedback might undermine their originality in the short term. Organizations should instead ensure that their action-oriented employees are given feedback that provokes a short episode of negative affect. This is in line with recent developments in creativity literature (Bledow et al., 2013), but counterintuitive to what the leadership literature has indicated to date (Mumford et al., 2002). Moreover, this might be a tricky endeavor, as feedback in the long term should not be perceived as destructive (Cannon and Witherspoon, 2005). Alternatively, supervisors could try triggering the effect that an episode of negative affect creates, that is, by indicating that the status quo could be better and that improvements are needed (cf. George, 2007; Kaufmann and Vosburg, 1997). This could also be achieved by encouraging action-oriented employees to be alert to shortfalls, to focus on the current state of affairs rather than on pre-existing assumptions, and exerting high levels of effort to improve the current state (e.g., George and Zhou, 2002; Schwarz, 2002). Hence, our findings suggest a powerful way to enhance employees’ short-term ability to generate original ideas.

Knowing that affective support facilitates self-regulation by creating access to higher cognitive systems, other corporate tools might likewise activate relevant self-regulatory systems, either through mediating the affective states of employees, or even directly. Consequently, beyond feedback as a leadership tool, the awareness of differences in regulating affective states opens up a wide spectrum of options for designing a work environment that provides different external stimuli according to the needs of employees.

**Limitations and outlook on future research**

When interpreting the results of our study, we have to bear in mind several limitations. First, we manipulated our participants by giving them randomly assigned feedback on their performance. Although feedback is a common tool to provoke affective reactions, it may be restricted to rather
short-lived changes in affect. Provoking short episodes of affect changes was intentional in our study. Nevertheless, future research should explore whether the same effects occur for longer-lasting affect induction and for longer-lasting tasks.

Second, although we find different effects between action- and state-oriented individuals from initial negative feedback and positive perception of feedback, we can only assume that such a difference is caused by a shift in affective states. While perfectly in line with theory and prior empirical research (e.g., Bledow et al., 2011, 2013), future research should establish this shift by measuring not only performance, but also manifold affective states. In this regard, the method and timing of measurement should be carefully considered as affective self-regulation happens before a task is conducted. That is, asking about the affective states of participants before a task is given and then again before a task is approached, might not work well. However, asking them after the task has been performed might not work either as the task itself can induce affective reactions. Future research might be able to overcome such difficulties by measuring physical or neurological reactions rather than by surveying participants.

Third, manipulation in the form of the feedback given was divided into types of valence. This is in line with general practice in leadership research (cf. Shalley, Zhou and Oldham, 2004 for a review). However, this breakdown is somewhat simplified. There are a few studies that focus on specific areas of leadership behavior, such as a leader’s tendency to provide supportive, non-controlling supervision (Oldham and Cummings, 1996) in carrying out the work. Future research could refine our findings in line with specific types of support provided by leaders.

Likewise, affect was only measured by its hedonic valence. PANAS is probably the most frequently used inventory for measuring affect. Nevertheless, the content of this scale has been criticized. Although PANAS has been shown to be a robust measurement, clearly
distinguishing between the hedonic valence of affect, the inventory cannot account for the complexities of affect as a whole, because it only covers positive and negative feelings that are high in activation (e.g., being upset), and it excludes those that are low in energy expenditure (e.g., feeling a little ‘blue’). We have decided to use the NA part of the PANAS inventory as it has been shown to be a particularly good fit model for measuring affective states (as compared to a more trait-like measurement of affect) (Schmukle et al., 2002). Future research should examine the validity of our findings in a broader context by using more complex measures (such as Russell’s circumplex model of affect; Russell, 1980, 2003), or in a narrower context by using discrete negative emotions (such as anger).

In addition, and as already stated, this study only focuses on the idea-generation process at the individual level. Evidently, originality is of utmost importance at this stage. Prior research has established a direct positive effect between individual ideas and firm-level outcomes (Baron and Tang, 2011). Therefore, the generation of original ideas seems to be necessary for innovation activities—that is, original ideas represent the starting point from which innovation outcomes can arise (Shalley and Perry-Smith, 2008)—and for entrepreneurial opportunities (Vogel, 2016). However, generating original ideas might not be sufficient. Before reaching further outcomes, such as entrepreneurial opportunities that become implemented, firm-level innovations, and so on, ideas need to be evaluated and refined, and the necessary resources to be provided (Dimov, 2007, Knudsen and Levinthal, 2007; Perry-Smith and Coff, 2011). To meet these goals, original ideas ultimately need organizational resources and support to ensure they are implemented. These steps throughout the innovation process require different skills and occur at different levels, that is, within a team or within organizational constraints (Foss, Klein, Kor, and Mahoney, 2008). Furthermore, the implementation of ideas in organizations is a highly political
and social process (Shalley and Perry-Smith, 2008). We deliberately disentangled the generation of original ideas from processes that follow as this is the only part of the innovation/entrepreneurial process that is solely based on the individual. Future research could investigate later stages, such as idea evaluation and implementation.

In this regard, future research might also look at stages throughout the innovation process in which the benefits of state-orientation might play out more strongly. The fact that state-oriented individuals lack flexible coping mechanisms in demanding conditions may also turn out as advantageous situations for them. We know from the self-regulation literature that state-oriented individuals are rigid and inflexible, resist adaption, can bear longer periods of negative affect, and keep their attention focused on potential threats (Koole et al., 2005). This might be helpful during the evaluation phase of original ideas, but also throughout innovation processes. More specifically, state-oriented individuals might, for instance, stick with an original plan for a longer period and be less likely to change track if environmental conditions deteriorate, despite experiencing temporary frustration. In other words, once state-oriented individuals have started an innovation project, they may show greater patience in pursuing their original idea in the face of any implementation problems.

Prior research has also shown that state-oriented individuals show a preference for supporting relationships that help to overcome their problems and frustrations, as well as actively seeking support (Koole et al., 2005). Such help-seeking behavior, in turn, increases the ability to obtain social support as it motivates others to help when people are open about their problems (Kuhl, 2000). In the long term, such behavior might be fruitful for becoming connected in a social network, which might influence access to resources (Rooks et al., 2016) and subsequently entrepreneurial and innovation performance (Rauch et al., 2016), whereas action-oriented
individuals’ lack of ability/need to express states of helplessness might be disadvantageous, especially if it is perceived as arrogant (Koole et al., 2005).

**Conclusion**

The present study shows that action control differences among individuals play a key role in handling negative affect in the idea-generation process. The patterns we identify provide a detailed understanding of how the ability to self-regulate negative affect determines the kind of emotional support individuals should receive to bolster their originality. Original ideas are important for new ventures, as well as for larger organizations. The current emphasis that many firms place on enhancing creativity and entrepreneurial behavior can act as a key to new venture creation, and also to organizational effectiveness and competitive advantage (Amabile et al., 1996). It is a strong impetus for research on dynamic psychological processes on the individual level, and we encourage our colleagues to further investigate this important line of research.
References


Jostmann NB, Gieselmann A. 2014. When you have to climb downhill to reach the top: The effect of action versus state orientation on solving a goal-subgoal conflict in the tower of Hanoi task. Experimental Psychology 61: 394-401.


### Figure 1: Sequence of tasks and measures in the experiment.

<table>
<thead>
<tr>
<th>Affect</th>
<th>Momentary negative affective state (Watson <em>et al.</em>, 1988)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity test (t₀)</td>
<td>Torrance’s test of creative thinking (1974)</td>
</tr>
<tr>
<td>Feedback</td>
<td>Randomly assigned (cf. Oettinger, Marquardt, Gollwitzer, 2012; Zhou, 1998)</td>
</tr>
<tr>
<td>Creativity test (t₁)</td>
<td>Torrance’s test of creative thinking (1974)</td>
</tr>
<tr>
<td>Feedback perception</td>
<td>5-point Likert-scale from (-2) (negative) to (2) (positive)</td>
</tr>
<tr>
<td>Demographics and Action control</td>
<td>Age and gender Action control scale (Kuhl, 1994; Diefendorff <em>et al.</em>, 2000)</td>
</tr>
</tbody>
</table>
Figure 2: Curvilinear effects of negative affect.
Figure 3: Curvilinear effects of feedback perceptions.
Table 1: Comparison of randomized groups receiving positive vs. negative feedback

<table>
<thead>
<tr>
<th></th>
<th>Group 1: Positive feedback</th>
<th>Group 2: Negative feedback</th>
<th>ANOVA (Two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>0.72</td>
<td>0.61</td>
<td>*¹</td>
</tr>
<tr>
<td>Age</td>
<td>38.38</td>
<td>38.45</td>
<td>n.s.</td>
</tr>
<tr>
<td>Originality test $T_0$</td>
<td>0.52</td>
<td>0.50</td>
<td>n.s.</td>
</tr>
<tr>
<td>Originality test $T_1$</td>
<td>0.50</td>
<td>0.55</td>
<td>n.s.</td>
</tr>
<tr>
<td>Negative affect $T_0$</td>
<td>2.94</td>
<td>3.11</td>
<td>n.s.</td>
</tr>
<tr>
<td>Feedback perception</td>
<td>3.52</td>
<td>2.56</td>
<td>**</td>
</tr>
</tbody>
</table>

Notes: ¹ $p<0.1$; ² $p<0.05$; ** $p<0.01$
¹: Chi² test
<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
<th>State-oriented sample</th>
<th>Action-oriented sample</th>
<th>ANOVA (two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (male)</td>
<td>0.66</td>
<td>0.73</td>
<td>0.63</td>
<td>*(^1)</td>
</tr>
<tr>
<td>Age</td>
<td>38.4</td>
<td>37.6</td>
<td>38.9</td>
<td>n.s.</td>
</tr>
<tr>
<td>Originality test T(_0)</td>
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<td>0.45</td>
<td>0.55</td>
<td>**</td>
</tr>
<tr>
<td>Originality test T(_1)</td>
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<td>0.52</td>
<td>0.53</td>
<td>n.s.</td>
</tr>
<tr>
<td>Negative affect T(_0)</td>
<td>3.02</td>
<td>3.19</td>
<td>2.92</td>
<td>**</td>
</tr>
<tr>
<td>Feedback perception</td>
<td>3.06</td>
<td>3.04</td>
<td>3.06</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Notes: \(p<0.05\); ** \(p<0.01\)

\(^1\): Chi\(^2\) test
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Originality test T₀</td>
<td>0.51</td>
<td>0.29</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Originality test T₁</td>
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<td>0.29</td>
<td>0.18**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Action control</td>
<td>0.63</td>
<td>0.48</td>
<td>0.16**</td>
<td>0.01</td>
<td>1.00</td>
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<tr>
<td>4. Negative affect T₀</td>
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<td>0.96</td>
<td>0.04</td>
<td>-</td>
<td>-0.14*</td>
<td>1.00</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Feedback perception</td>
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<td>0.76</td>
<td>0.02</td>
<td>0.01</td>
<td>0.01</td>
<td>-0.09</td>
<td>1.00</td>
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<td>6. Age</td>
<td>38.4</td>
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<td>0.05</td>
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<td>-0.06</td>
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<td>1.00</td>
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<tr>
<td>7. Gender (male)</td>
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<td>0.47</td>
<td>0.03</td>
<td>0.06</td>
<td>-0.11</td>
<td>-0.08</td>
<td>0.06</td>
<td>0.11</td>
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Notes: p<0.05; ** p<0.01
### Table 4: Linear regression predicting originality $T_0$

<table>
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<th>Full sample</th>
<th>State-oriented sample</th>
<th>Action-oriented sample</th>
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<td></td>
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<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td>Constant</td>
<td>0.405**</td>
<td>0.335**</td>
<td>0.512**</td>
</tr>
<tr>
<td></td>
<td>(0.103)</td>
<td>(0.120)</td>
<td>(0.182)</td>
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<td>0.000</td>
<td>-0.000</td>
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<tr>
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<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.002)</td>
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<td>0.032</td>
<td>0.026</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
<td>(0.034)</td>
<td>(0.034)</td>
</tr>
<tr>
<td>Action control</td>
<td>0.098**</td>
<td>0.103</td>
<td>0.105</td>
</tr>
<tr>
<td></td>
<td>(0.033)</td>
<td>(0.033)</td>
<td>(0.033)</td>
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<tr>
<td>Negative affect $T_0$</td>
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<td>-0.003</td>
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<td>(0.017)</td>
<td>(0.087)</td>
<td>(0.026)</td>
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<tr>
<td>Negative affect $T_0^2$</td>
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<td>0.036*</td>
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<tr>
<td></td>
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<td>(0.020)</td>
<td>(0.019)</td>
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<tr>
<td>R square</td>
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<tr>
<td>R square change</td>
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<td>0.003</td>
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</table>

Notes: $^*$ $p<0.1$; $^* p<0.05$; $^{**} p<0.01$ (One-tailed for independent variables). Standard errors are reported in brackets.
<table>
<thead>
<tr>
<th></th>
<th>Full Sample</th>
<th>State-oriented sample</th>
<th>Action-oriented sample</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Model 3</td>
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<td>0.627**</td>
<td>0.605**</td>
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<td></td>
<td>(0.184)</td>
<td>(0.184)</td>
<td>(0.184)</td>
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<tr>
<td>Age</td>
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<td>0.002</td>
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<td>0.020</td>
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<td>(0.34)</td>
<td>(0.034)</td>
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<td>-0.012</td>
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<tr>
<td>Originality $T_0$</td>
<td>0.175**</td>
<td>0.174**</td>
<td>0.175**</td>
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<tr>
<td></td>
<td>(0.056)</td>
<td>(0.056)</td>
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<tr>
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<td>-0.161†</td>
<td>-0.155†</td>
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<tr>
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<td>(0.087)</td>
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<td>0.021</td>
<td>0.020</td>
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<td>(0.013)</td>
<td>(0.013)</td>
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<tr>
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<td>0.052†</td>
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<tr>
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<td>(0.021)</td>
<td>(0.021)</td>
<td>(0.033)</td>
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<tr>
<td>Feedback Perception$^2$</td>
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<td>(0.020)</td>
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<tr>
<td>N respondents</td>
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</tr>
<tr>
<td>R square</td>
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<td>R square change</td>
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Notes: † p<0.1; * p<0.05; ** p<0.01 (One-tailed for independent variables). Standard errors are reported in brackets.