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Michel Hansenne[*]
Virginie Christophe[*]

Further Evidences of the role of Personality on Affective Forecasting

Abstract: *While personality is strongly related to experienced emotions, few studies examined the role of personality traits on affective forecasting. In the present study, we investigated the relationships between extraversion and neuroticism personality traits and affective predictions about academic performance. Participants were asked to predict their emotional reactions two months before they will get their results for one important exam. At the same time, personality was assessed with the Big Five Inventory. All the participants were contacted by a text message eight hours after that the results were available, and they were requested to rate their experienced affective state. Results show moderate negative correlations between neuroticism and both predicted and experienced feelings, and that extraversion exhibits a weak positive correlation with predicted feelings, but not with experienced feelings. Taken together, these findings confirm that extraversion and neuroticism shape emotional forecasts, and suggest that affective forecasting interventions based on personality could probably enhance their efficiencies.*

Keywords: *Affective forecasting, personality, extraversion, neuroticism*

Introduction

Emotional reactions that individuals anticipate often significantly differ from those they actually feel towards affective stimuli and events, which is called the impact bias (Dunn & Laham, 2006; Gilbert & Wilson, 2009; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). Findings demonstrated globally that people frequently overrate how happy they will be after a future positive emotional event and how unhappy they will be after a future negative emotional event. This tendency, which is probably automatic, to overemphasize the intensity of emotional feelings is one of the most commonly observed forecasting error, and it is particularly deleterious since affective forecasting markedly influences many important life choices and decisions (Peters, Laham, Pachter, & Winship, 2014; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008), like agreeing to perform a diagnostic medical testing (Hoerger, Scherer, & Fagerlain, 2016; Rhodes & Strain, 2008), engaging in physical exercises (Ruby, Dunn, Perrino, Gillis, & Viel, 2011), and getting divorced (Lucas, 2005). Meaningfully, even if the overestimation of our positive feelings regarding a future positive event is not particularly prejudicial and even it could enhance the motivation of doing something, conversely, overrating our negative feelings towards a future negative event would induce some avoidance, and consequently not motivating the individual to do the right thing.

Interestingly, whereas the majority of the affective forecasting studies investigated the prediction regarding a specific event, a recent study examined the consequences that the discrepancy between expectations and realizations of subjective well-being exerts on its subsequent level (Bertoni & Corazzini, 2018). The results showed that participants were accurate in 26% of the cases, and that 43% had overestimated their subjective well-being, and 31% had underestimated it. In addition, the results showed a negative correlation between the level of life satisfaction in the future and the inability to reach life satisfaction expectations, whereas there was no correlation between going beyond one's expectations and life satisfaction. This suggests an asymmetric relationship between affective forecasting errors and future life satisfaction.

Despite the fact that personality is a strong predictor of experienced emotions (Rusting & Larsen, 1997), limited studies investigated the role of individual differences on affective forecasting, and this recent literature that has investigated how personality could modulate affective forecasting needs replication because mixed results were reported, or they come mainly from the same group.

[*] **Department of Psychology, PsyNCog, University of Liege, Belgium**

Corresponding author: Michel Hansenne, e-mail: michel.hansenne@ulg.ac.be

Indeed, while many data showed a direct link between personality and affective predictions (Hoerger & Quirk, 2010; Hoerger, Chapman, & Duberstein, 2015), some data reported a personality neglect effect occurring during affective prediction (Quoidbach & Dunn, 2010). Particularly, Hoerger and Quirk (2010) described significant relationships between both neuroticism (negative association) and extraversion (positive association) and experienced emotional reactions towards an emotional event (i.e., Valentine's Day). Interestingly, their findings also demonstrated similar relationships for forecasted emotional reactions for this future event, suggesting that personality is not only related to experienced feelings, but personality likewise modulated affective forecasting. The same group extended their results to psychopathological symptoms and various events like football games, birthdays and elections (Hoerger, Quirk, Chapman, & Duberstein, 2012; Hoerger et al., 2016). They found that individuals who were more introverted and neurotic predicted that they would feel more unpleasant emotional reactions regarding future events, whereas individuals who were more extraverted and less neurotic predicted that they would feel more pleasant emotional reactions. Moreover, it has been postulated that participants characterized by higher introversion do not behave more often like an extravert, because they underrate the beneficial and positive consequences of acting like extraverted people do (Zelenski, Whelan, Nealis, Besner, Santoro, & Wynn, 2013).

The aforementioned results suggest that personality is not only associated to experienced feelings, but also to predicted emotional reactions: neuroticism leads to negative forecasting and extraversion to positive ones. This is particularly interesting, because attempts to reduce the impact bias affecting important decisions should probably consider the personality of the participant. Nevertheless, Quoidbach and Dunn (2010) found that dispositional happiness was, as predicted, positively associated with experienced feelings when undergraduate students got their academic results, but in contrast, forecasted feelings for this event were unrelated to the dispositional trait. Similar results were reported in a following study, in that personality traits neuroticism and optimism were not correlated to forecasted emotional reactions regarding Barack Obama's 2008 election. Conversely, as expected, neuroticism and optimism traits were associated to emotional feelings the day after the election. Quoidbach and Dunn (2010) concluded that people ignore the impact of their personality on their future feelings, and that is why they are wrong when they envisage their future emotional reactions, what they have named personality neglect effect. For instance, neurotic individuals overestimate the pleasure they would experience in response to a future positive event because they neglected their disposition for anxiety.

In order to clarify and extend the findings about the impact of dispositional traits on affective forecasting, the aim of the present study was to explore the relationships between personality traits and affective forecasting about academic performance. Based on previous findings (Hoerger & Quirk, 2010; Hoerger et al., 2016), we expected that extraverts should predict and experience more positive feelings about the future event, and that neurotics should forecast and feel fewer positive feelings. Alternatively, based on Quoidbach and Dunn (2010) findings, personality could be only associated to experienced feelings but unrelated to predicted feelings.

Methods

A total of 105 undergraduate students (mean age 23.3 years old, $SD = 3.77$; 73 females) participated in the study. They were enrolled into the psychology bachelor of the University of Liège, Belgium, and they were recruited into one important class (i.e., neuropsychology). The study was approved by the ethical committee of the Psychology Faculty, and written informed consent was requested to participate in the study. Just after a neuropsychology class, the design of the study was explained to the students, and they were invited to forecast their happiness for the day they would obtain the result of the exam two months later. The predicted affective feeling was evaluated on a Likert scale ranging from 1 (very bad) to 7 (very good). On the same time, personality was measured with the French version of the Big Five Inventory (BFI; Plaisant, Courtois, Réveillère, Mendelsohn, & John, 2008), which provides reliable measures of neuroticism ($\alpha = .82$), extraversion ($\alpha = .82$), openness to experience ($\alpha = .74$), agreeableness ($\alpha = .75$), and conscientiousness ($\alpha = .80$) of the big five traits of personality. In the second part of the study, the participants received a text message on their phone eight hours after that the results were posted (around 08:00 PM), and they were asked to tell how they felt right now on the same Likert scale that was used for the prediction step. They did the follow-up affective rating within one hour after having got the text message. From the whole sample composed of 154 participants, 68% (N = 105) finalized the second part. Spearman correlations were carried out to assess the relationships between personality traits with predicted and experienced emotional reactions separately. Following Hoerger et al. (2016), only results for extraversion and neuroticism were reported here.

Results

Correlation analyses show that neuroticism exhibits significant moderate negative correlations with predicted ($r = –.45$, $p < .001$; 95% $CI = [–.29, –.68]$) and experienced feelings ($r = –.33$, $p = .01$; 95% $CI = [–.15, –.54]$), and that extraversion shows a significant but low positive correlation with predicted feelings ($r = .21$, $p = .03$; 95% $CI = [.02, .41]$), but not with experienced feelings ($r = .15$, $p = .12$; 95% $CI = [–.04, .35]$) (Table 1).

Since the percentage of participants dropping from the first to the second part of the study was relatively high (32%), we investigated the relationships between the decision to drop from the study and personality traits. Analyses show that participants who didn't respond to the second assessment exhibit no significant differences

Table 1. Study variables' means, standard deviations and inter-correlations

		M	*SD*	2	3	4
1	Extraversion	3.16	.80	–.27**	.21*	.15
2	Neuroticism	3.25	.79		–.45**	–.33**
3	Predicted feelings	4.38	2.18			.72**
4	Experienced feelings	4.43	1.67			

* $p < .05$, ** $p < .01$.

in neuroticism ($t = .29$, $p = .77$), extraversion ($t = 1.82$, $p = .09$), and predicted feelings ($t = –.18$, $p = .85$), suggesting that attrition is random.

Discussion

The results of the present study confirm that personality traits extraversion and neuroticism are good predictors of affective forecasting. More particularly, neuroticism is negatively associated with both predicted and experienced feelings about academic performance, meaning that individuals who were more neurotic predicted and experienced fewer positive feelings than participants who were less neurotic. In addition, extraversion is positively correlated with predicted feelings, showing that extraverts predicted more positive feelings than introverts.

Since the affective predictions were each time asked before that participants fulfilled the personality questionnaire, we can assume that the results reported are immune from the order in which questions (affective feelings and personality traits) are presented to the participants. Indeed, since context effects have largely illustrated that the order of the questions matters (Tourangeau & Rasinski, 1988), assessing the personality before asking the prediction would have bias the affective forecasting.

The present findings globally support and confirm those reported by Hoerger and his colleagues (Hoerger & Quirk, 2010; Hoerger et al., 2016) showing that extraverts anticipated higher positive mood after an event, and that neurotics, in contrast, expected lower positive mood. Globally, our results confirm the fact that dispositional traits are not only linked to experienced feelings but also to the way individuals realize affective predictions (Hoerger et al., 2012; Wenze, Gunthert, & German, 2012). This study extends also previous findings showed that personality traits shape the way people think about their future (Fortunato & Furey, 2011; MacLeod & Salaminiou, 2001), and is also in agreement with robust findings associated extraversion to motivation (Depue & Collins, 1999).

Interestingly, the correlations reported for the predicted feelings are globally higher that those observed for the experienced feelings. We can argue, following recent works empathizing the role of situation in personality assessment (Rauthmann, Sherman, & Funder, 2015; Ziegler & Horstmann, 2015), that since the assessment of experienced feelings was carried out by a text message after the event, it could be highly probable that the participants were not alone, suggesting that the situation shared by the participants could reduce the effect of personality. Indeed, it is reasonably to postulate that when a bad prognostic is given to a patient after a genetic screening the situation matters: being alone or being supported by a loved one will change considerably the affective feelings at this time. In the present study, we can speculate that neurotic individuals were less influenced by their personality traits when they reported their current feelings because the situation had probably decreased the influence of their personality. However, we have not assessed the situation where the participants were when they responded to the text message, so future studies should be conducted to address whether the situation could really decrease the impact of personality on experienced emotions.

Conversely, the results reported in the present study do not support the proposition given by Quoidbach and Dunn (2010) claiming that participants neglected the role of their dispositional traits when predicting their future feelings regarding their overall grades of the term, but that dispositional traits, on contrary, significantly affected their actual feelings. Moreover, in their study 2, results revealed that neuroticism and optimism were unrelated to affective forecasts regarding Obama's victory but were significantly associated with their actual happiness following the election. We can advance that two methodological differences could be responsible for the conflicting results. Firstly, the events selected were different: the global term grade versus the grade of one major exam. We can suppose that having good or bad full-term grades is more significant than achieving or not one important exam only. This raises the issue of the diversity of the affective events assessed in affective forecasting studies (e.g., academic performance, Valentine's Day, election, and football), and also the urge to propose a typical protocol. Nevertheless, by using different events, we can examine affective forecasting in a large range of situations, allowing to determinate whether the impact bias can be considered as general, or if it is more specific to certain events. Secondly, the moment where participants were requested to rate their actual feelings was largely different: eight hours in the present study, in comparison to a two weeks period in the study of Quoidbach and Dunn (2010). Therefore, immediate emotional effect was measured in the present study in contrast to an enduring emotional state in the study of Quoidbach and Dunn (2010).

Extraversion and neuroticism traits are not considered as fully independent, and it turns on that four categories emerge from the relationships between these two traits, in which individuals who are higher on extraversion and lower on neuroticism are called "happy" and those who are lower on extraversion and higher on neuroticism are called "unhappy" (Costa & McCrae, 1980). The combination of neuroticism and extraversion traits could induce larger contribution of personality on forecasted emotions. Individuals higher on extraversion and lower on neuroticism are those who predict the more positive feelings about future events, whereas individuals higher on neuroticism and lower on extraversion are those who forecast the less positive feelings about future events. Consequently, their motivation to engaging in healthy behaviors for instance, based on their predictions, is strongly impacted by their personality. Considering the role of affective predictions in various situations, like moving to another country, doing sport, quitting smoking, following chemotherapy treatment, or making medical screening, it would be interesting to address in future studies whether psychological interventions aiming to improve the effectiveness of affective forecasting, and more generally decision-making in different context, would be more efficient if they specifically consider personality differences. Indeed, since affective forecasting interventions showed small but consistent effect on behavioral outcomes (Ellis et al., 2018), introducing interventions based on personality could probably enhance their efficiencies.

Since the second phase of the study was conducted two months after the initial assessment, a limitation of the study is to not having asked the participants about the occurrence of potential shocks occurred during the time interval between the two phases, as for instance the outcome of other exams or some personal events. The participants responded only to a general question about their current affective state. Therefore, we cannot exclude that some participants have experienced negative or positive personal events that could have affected their affective states. Future studies should control the occurrence of significant events between the predicted and the current affective states.

In conclusion, the present study provides additional supports of the role of individual differences on affective forecasting, more particularly extraversion and neuroticism personality traits. Personality is therefore definitively a good predictor of forecasted emotions about future events, neuroticism inducing a negative view about emotional reactions of future events, and extraversion producing a positive sight of the future.

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