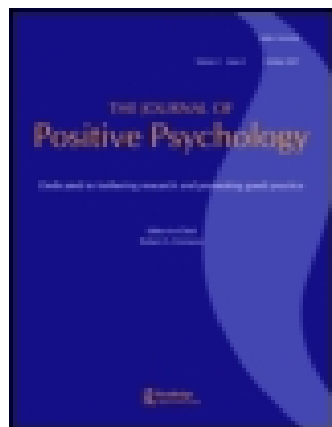


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Dispositional happiness and affective forecasting: General or specific effect?

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Recent findings suggest that dispositional traits can influence personal affective forecasting. In this study, we investigated the relationship between dispositional happiness and affective prediction about academic performance among undergraduate students. Participants were asked to predict their emotional reactions on a 7-point Likert scale in regard to an important exam's result two months prior obtaining their results. All the participants were contacted by SMS (Short Text Message) 8 h after the results were available and were requested to rate their actual emotional feelings on the same scale. According to their scores on the subjective happiness scale, participants were assigned into 'happy' and 'unhappy' groups. Results show no emotional prediction differences between the two groups for extreme results (i.e. good and bad results). In contrast, happy participants predicted less negative emotional feelings than unhappy ones for moderate results. No differences appear for the emotional feelings assessed the day they received their exam's scores. These findings support the idea that dispositional happiness is related to emotional prediction and, more particularly, indicate that happiness induces more positive feelings concerning moderate future events, but not for extreme ones. This study suggests that happiness induces a positive view about emotional coping for future intermediate accomplishments only and not a positive view of the future in general.

Keywords: affective forecasting; happiness; individual differences

Introduction

Prediction of future events is probably a distinctive ability of the human mind. From simple to important life choices, most decisions are based on people's predictions of how each outcome will make them feel in the future taking into account past experiences, leading to affective forecasts (Gilbert & Wilson, 2009; Kermer, Driver-Linn, Wilson, & Gilbert, 2006; Mellers & McGraw, 2001). Several lines of evidence suggest that emotional reactions people anticipate often differ markedly from those they actually experience in response to affective stimuli and events. Indeed, people frequently overestimate how happy they will be after positive events and how sad they will feel after negative ones, which has been named the impact bias (Wilson, Wheatley, Meyers, Gilbert, & Axson, 2000). This trend to overestimate the intensity of emotional responses is maybe the most commonly observed forecasting error. The main explanation of this bias is that people neglect, when they forecast an emotional experience, they will use several coping strategies when the event occurs. Coping mechanisms constitutes of the psychological immune system which is massively neglected during affective forecasting (immune neglect; Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998). This is particularly critical because affective forecasting significantly influences a range of important life choices

(Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008), such as decisions to pursue diagnostic medical testing (Rhodes & Strain, 2008), doing physical exercises (Ruby, Dunn, Perrino, Gillis, & Viel, 2011), and getting divorced (Lucas, 2005).

Despite the fact that personality strongly shapes our future behaviors, thoughts, and feelings, and that personality is related to emotions, the associations between personality and affective forecasting have received limited attention. Indeed, only few recent studies examined the influence of individual differences on affective forecasting, and an emerging body of evidence suggests that individual differences play an important role in affective forecasting. This is a critical issue. Based on the importance of affective prediction in many situations, such as engaging in a romantic relationship, changing job position, and pursuing medical diagnostics, an important question of future research is whether specific psychological interventions centered on dispositional traits could improve the effectiveness of affective forecasting and, more generally, decision-making in different contexts (Hoerger, Chapman, Epstein, & Duberstein, 2012).

However, recent literature exploring the link between personality and affective forecasting is far from clear; some data show a direct link between personality and affective predictions, whereas other data report a

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personality neglect effect occurring during affective prediction. Hoerger and Quirk (2010) showed that neuroticism and extraversion are associated to experienced emotional reactions to an emotional event (i.e. Valentine's Day); they also reported the same associations for anticipated emotional reactions, meaning that personality modulates affective forecasting. The same group extended their results to psychopathological symptoms (Hoerger, Quirk, Chapman, & Duberstein, 2012). They found that individuals characterized by dysphoric states overrate their negative emotional reactions about Valentine's Day one month before. In the same vein, Wenze, Gunthert, and German (2012) reported that participants characterized by depressive symptoms exhibited stronger negative mood prediction biases and weaker positive mood prediction biases. Moreover, introverts perform an affective forecasting error when they were asked to imagine acting in an extraverted way (Zelenski et al., 2013); more particularly, introverts overestimate the negative feelings associated with their extraverted behaviors. All the aforementioned results suggest that neuroticism and negative relative traits (i.e. dysphoric and depressive symptoms) increase the impact bias in affective forecasting. In contrast, Quoidbach and Dunn (2010) reported that dispositional happiness was related to experienced feelings the day after a positive event among undergraduate students occurred (i.e. receiving academic grades) but was not associated to predicted feelings for this event. They found also that neuroticism and optimism were largely neglected when participants had to forecast their emotional reactions to Barack Obama's 2008 election; however, these traits were related to their real emotional reactions assessed the day after the election. These results suggested that because people forget the impact of their dispositional traits on future feelings; they inaccurately predict their emotional reactions, what Quoidbach and Dunn (2010) called personality neglect effect. For instance, neurotic individuals neglect their own inclination for distress, resulting in overestimating the happiness they would otherwise experience in response to a positive event.

Some reasons can clarify why the recent existing literature about the influence of individual differences on affective forecasting is inconsistent. One possible reason is that the nature of the event on which the affective forecasting is requested differs largely between the studies (e.g. Valentine's Day, extraverted behaviors, Barack Obama's election, and academic grades). Additionally, the delay between the event and the rating of actual feelings varies between studies, as well as the way in which the questions about the predicted and actual feelings are asked (i.e. the role of temporal focus; Buehler & McFarland, 2001). Finally, majority of studies consider the target event as positive or negative, whereas in many situations, an event maybe also neutral.

In order to clarify and extend the findings about the impact of dispositional traits on affective forecasting, the aim of this study was to investigate the relationship between dispositional happiness and affective prediction about academic performance among undergraduate students by considering academic performance on a three-point continuum (good, acceptable, and bad). Based on Quoidbach and Dunn (2010) findings, we tested if dispositional happiness would be related to experienced emotional reactions, but not to predicted ones. Alternatively, because happiness is related to positive forecasting, we expected that students exhibiting higher levels of happiness would predict more positive feelings about this specific future event. In addition, we tested whether happiness would induce a general effect (i.e. more positive feelings for all grade outcomes) or a specific one (i.e. more positive feelings for moderate and bad outcomes only).

Methods

Participants

The sample consisted of 105 undergraduate students (32 males) with a mean age of 23.3 years (ranging from 18 to 33 years, $SD = 3.77$). All the participants were enrolled into the second year of psychology bachelor and recruited into one important class (i.e. cognitive psychology). The ethical committee of the University of Liège Psychology Faculty approved the protocol, and the participants gave their informed consent to participate in the study.

Procedure

At the end of a cognitive psychology class, participants were asked to predict their emotional reactions for when they would obtain their results of the exam two months later. The affective reactions were assessed on a 7-point Likert scale, ranging from 1 (very bad) to 7 (very good). Participants should forecast their reactions for three possibilities: achieving bad (below 4/10), acceptable (between 5 and 6/10), or good results (higher than 7/10). According to a local convention, scores of 4.5 and 6.5 were turned to 5 and 7, respectively. These exam cutoffs correspond to local classification applicable for exam scores, unsatisfactory, acceptable, and distinction, respectively. Overall happiness was assessed using the subjective happiness scale (SHS; Lyubomirsky & Lepper, 1999). This well-validated instrument composed of four 7-point items provides a global, subjective assessment of whether an individual is a happy or an unhappy person, which encompasses both emotional and cognitive well-being. Participants were assigned to 'happy' and 'unhappy' groups on the basis of high and low scores for SHS, with high-scoring and low-scoring subjects selected as being above and below the median of the

score distribution, respectively. As scheduled, all the participants were contacted by SMS (Short Text Message) approximately at 08:00 PM (8 h after the exam scores were posted) and were requested to rate their current affective states on the same 7-point Likert scale. A total of 105 participants from the initial 154 (75%) completed the second assessment. All the participants completed the follow-up mood assessment within 1 h after having received the SMS.

Statistical analyses

All the statistical analyses were performed with Statistica (10.1) for Windows. In order to compare current and predicted emotional states; only data on predictions for the grade obtained were analyzed. A 2 groups (happy vs. unhappy) \times 3 grades obtained (good results vs. acceptable results vs. bad results) \times 2 times (predicted vs. real) repeated-measures analysis of variance (ANOVA) on affective state was conducted, with groups and grades as between-subjects factors and time as within-subject factor. Correlational analyses between happiness and participants' predicted and actual emotional reactions, split by grades of the exam, were also computed.

Results

Among the participants, the percentages of bad, acceptable, and good results were 35% ($N=37$), 27% ($N=28$), and 38% ($N=40$), respectively. Repeated-measures ANOVA shows a significant time \times grade interaction ($F_{2,99} = 25.65$, $p < 0.001$), meaning that predicted emotional feelings are overestimated as compared to experienced ones. Tukey post-hoc comparisons show that participants predicted higher positive feelings ($M = 6.5$; $SD = 0.5$; 95% $CI = [6.3, 6.7]$) than experienced ones ($M = 5.7$; $SD = 1.0$; 95% $CI = [5.3, 6.0]$) for good results ($p < 0.001$, $d = 0.96$, 95% $CI = [0.79, 1.30]$) and predicted lower positive feelings ($M = 1.8$; $SD = 0.7$; 95% $CI = [1.5, 2.0]$) as compared to experienced ones ($M = 3.0$; $SD = 1.3$; 95% $CI = [2.5, 3.4]$) for bad results ($p < 0.001$, $d = 1.14$, 95% $CI = [0.72, 1.37]$). In contrast, no difference appears for moderate results ($p = 0.92$, $d = 0.15$, 95% $CI = [-0.26, 0.72]$) (Figure 1). A significant time \times group interaction ($F_{1,99} = 3.95$, $p = 0.04$) reveals that happy participants predicted more positive feelings than those experienced, and the opposite pattern is observed for unhappy participants. Post-hoc comparisons indicate a tendency to significance between groups for predicted feelings ($p = 0.09$, $d = 0.16$, 95% $CI = [-0.46, 0.72]$), but not for experienced feelings ($p = 0.87$, $d = 0.05$, 95% $CI = [-0.37, 0.54]$).

Despite a lack of significant group \times grade \times time interaction, separate group \times grade ANOVAs for pre-

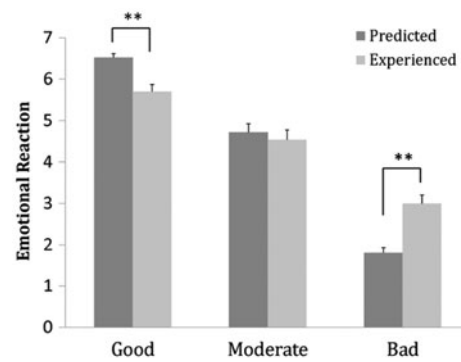


Figure 1. Differences between predicted and experienced emotional reactions as regards grades of the exam for all the participants ($* = p < 0.001$).

dicted and experienced feelings show a significant group \times grade interaction for predicted feelings ($F_{2,99} = 2.90$, $p = 0.05$), but not for experienced feelings ($F_{2,99} = 1.27$, $p = 0.28$). Post-hoc comparisons show that happy participants predicted higher positive feelings ($M = 5.2$; $SD = 0.8$; 95% $CI = [4.7, 5.7]$) for moderate results as compared to unhappy ones ($M = 4.2$; $SD = 1.1$; 95% $CI = [3.6, 4.9]$) ($p < 0.001$, $d = 0.99$, 95% $CI = [0.53, 1.57]$), but not for bad ($M = 1.8$; $SD = 0.6$; 95% $CI = [1.5, 2.2]$, ($M = 1.7$; $SD = 0.7$; 95% $CI = [1.3, 2.1]$) ($p = 0.98$, $d = 0.18$, 95% $CI = [-0.15, 0.52]$) or good results ($M = 6.6$; $SD = 0.6$; 95% $CI = [6.3, 6.9]$, ($M = 6.4$; $SD = 0.5$; 95% $CI = [6.2, 6.6]$) ($p = 0.99$, $d = 0.30$, 95% $CI = [0.02, 0.51]$) (Figure 2, left). Concerning experienced feelings, no differences appear between happy and unhappy participants for any grades (good, $M = 5.8$; $SD = 0.9$; 95% $CI = [5.4, 6.3]$, $M = 5.5$; $SD = 1.2$; 95% $CI = [5.0, 6.0]$, $p = 0.94$; moderate, $M = 4.5$; $SD = 1.2$; 95% $CI = [3.7, 5.3]$, $M = 4.5$; $SD = 1.3$; 95% $CI = [3.8, 5.2]$, $p = 0.99$; bad, $M = 2.7$; $SD = 1.2$; 95% $CI = [2.0, 3.3]$, $M = 3.2$; $SD = 1.3$; 95% $CI = [2.6, 3.8]$, $p = 0.75$; $d = 0.32$, 95% $CI = [-0.10, 0.83]$, $d = 0.01$, 95% $CI = [-0.68, 0.66]$, $d = 0.44$, 95% $CI = [-0.17, 1.01]$, respectively) (Figure 2, right).

Correlation analyses showed no significant correlations between happiness on the SHS and both predicted and real emotional reactions for bad ($r = 0.04$, $p = 0.81$; $r = -0.14$, $p = 0.41$), moderate ($r = 0.27$, $p = 0.16$; $r = 0.09$, $p = 0.65$), and good ($r = 0.18$, $p = 0.25$; $r = 0.01$, $p = 0.97$) grades on the exam.

Discussion

The main result of this study is that dispositional happiness influences affective forecasting among undergraduate students when they predict how they will feel about the result of an important exam, supporting the emerging literature which reports that individual differences are of interest in the domain of affective

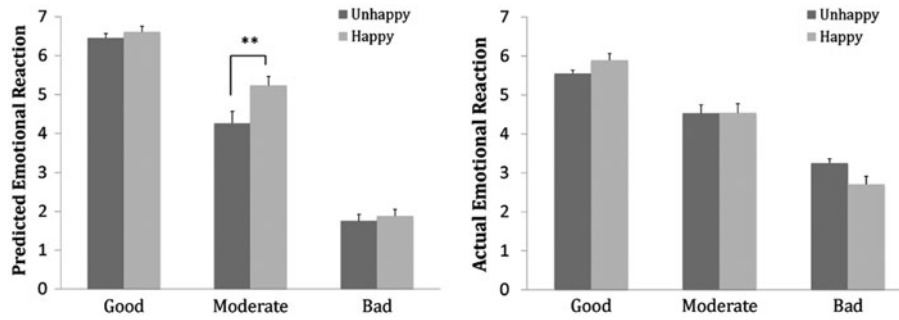


Figure 2. Differences between happy and unhappy participants as regards grades of the exam for predicted (left) and actual (right) emotional reactions ($* = p < 0.001$).

forecasting research. Indeed, whereas most research on affective forecasting has examined whether people mispredict their emotions on average, this study is one of the very few to examine whether individual differences moderate this effect. Regardless of grade outcomes, results show that happy participants overestimate how they will feel after getting an exam's result and that unhappy participants underrate how they will feel, meaning that happiness contributes to the impact bias. The findings are similar to those of Hoerger and Quirk (2010) who showed that extraverts predicted higher positive feelings after a positive event and that neurotics estimated lower positive ones. More largely, our results confirm the idea that personal dispositions are related to the way people made affective forecasts (Hoerger, Quirk, et al., 2012; Wenzel et al., 2012).

The present findings are not in agreement with the results of Quoidbach and Dunn (2010) who reported that students neglect the impact of their dispositional level of happiness in predicting their emotions concerning their overall grades of the term. In contrast, dispositional happiness played an important role in shaping their actual emotional experiences. In contrast, our results show that dispositional happiness influences predicted feelings, but not experienced ones. Some methodological discrepancies could explain the divergent results. Firstly, the event selected in Quoidbach and Dunn's study was the global term grade, whereas in this study, the event was the grade of one major exam. Therefore, consequences of good or bad full-term grades are more important than succeeding or not an important exam. This difference raises the question about the various emotional events examined in affective forecasting research (e.g. academic performance, Valentine's Day, election, and soccer) and the need to develop a typical protocol. However, the diversity of emotional events allows us to consider affective predictions in a full range of situations in order to identify general or specific effects. Secondly, participants in our study were asked to report how they

felt 8 h after receiving their results, whereas a period of two weeks was chosen in the study of Quoidbach and Dunn. Consequently, we assessed the immediate emotional effect, and not an enduring emotional state. The immediate emotional effect was a better choice in our study, because emotional reaction about one exam's result decreases more rapidly than affective reaction concerning global term grades.

Interestingly, in this study, results show that people with happy personalities tend to overestimate their future happiness compared to less happy people, but only for relatively mundane events (i.e. a moderate result). In contrast, both happy and unhappy individuals made similar forecasts for extreme events (top grades and poor grades, respectively). In other words, unhappy participants predict accurately their feelings on moderate results, meaning that happiness induces a specific impact bias limited to moderate events, rather than a general one. Despite significant results, correlation analyses suggest the same outcomes since the correlation between predicted feelings and happiness for moderate results is the only one approaching the statistical significance level ($p = 0.16$). The findings suggest that happiness does not modulate the classical impact bias for extreme outcomes, but only for moderate ones. For good and bad results, happy and unhappy participants do the same forecasting error. In these extreme situations, the dispositional traits are not strong enough to modify the situational influence; predictions concerning a positive event are higher than those experienced, and predictions for bad results are lower than those felt regardless happiness. For extreme results, individuals ignore their personal dispositions focusing only on the event, leading to what Quoidbach and Dunn (2010) termed "the personality neglect." However, the positive impact of happiness plays a role for intermediate results. This finding could be interpreted as regards the depressive realism theory (Allan, Siegel, & Hannah, 2007) suggesting that depressed subjects perform more realistic judgments due to the lack of

normative positivity biases in particular contexts, such as evaluating oneself or estimating the possibility of future events. Normative biases are probably stronger for extreme outcomes preventing the effect of happiness. However, it should be acknowledged that the effect reported in this study is relatively small, and future studies must be conducted to replicate the idea that happiness colors only less significant events.

The present results contrasting routine vs. extreme events may also help to understand mixed results supporting a personality neglect effect in affective forecasting. Indeed, one interesting avenue for future researches is to investigate affective forecasting for events considered on a continuum, and not only as a positive or negative outcome. For a moderate event, participants (even if the effect is small) seem to account for their dispositional happiness, rather than overlooking it when making predictions. This means that potential avenues to improve effective forecasting must emphasize both dispositional traits and consequences of the event. Instead of viewing personality as a devil that alters affective forecasting, it may have beneficial effects, such as enabling realistic judgments. It must be acknowledged, however, that in this study, conflating a happiness measure with personality seems to miss some of the nuances between the two, and future researches must focus on personality dimensions.

Finally, the present findings confirm the general impact bias when people forecast their emotional feelings about future events (Dunn & Laham, 2006; Wilson et al., 2000). Nevertheless, this bias is observed only for extreme results (i.e. good and bad), but not for intermediate results, meaning that misjudgment concerns merely important events. When people are confronted to predict their feelings for less important events, or neutral ones, the estimations are rather good, even if this study shows that dispositional happiness leads an overrating of moderate event. Again, it is very important when conducting future researches on affective forecasting to investigate both relevant and ordinary events.

In conclusion, the study provides additional evidences of the importance of individual differences on affective forecasting. More particularly, dispositional happiness plays a little role as a positive factor swaying emotional prediction about academic performance among undergraduate students for moderate results, suggesting that happiness could induce a positive view about emotional coping of future intermediate accomplishments only, and not a general positive view of future.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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