Depression severity moderates the relation between self-distancing and features of emotion unfolding

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**A B S T R A C T**

Thinking about a negative event from a self-distanced (vs. self-immersed) perspective is associated with lower emotion intensity. However, it is unclear how self-distancing impacts emotion unfolding and whether individual differences in depression severity moderate this impact. We addressed this issue by examining the effect of self-distancing on emotion explosiveness (i.e., steepness of the emotion response at onset) and accumulation (i.e., intensification of the response after onset) in participants differing in levels of depression. Participants adopted a self-immersed or self-distanced perspective while reading and thinking about manipulated negative social experiences from a self-distanced perspective while reading and thinking about manipulated negative social experiences from a self-distanced perspective. Moreover, the effect of perspective taking on accumulation was especially outspoken for people with high levels of depression severity.

1. Introduction

People are inevitably confronted with negative events and emotions in their life. One way people deal with this is by reflecting on these negative experiences in order to make sense of them (Papageorgiou & Wells, 2001). However, despite that self-reflection has been shown to decrease the intensity of negative emotions (e.g., Wilson & Gilbert, 2008), the opposite has been found as well (e.g., Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008).

To account for these seemingly contradicting consequences, a distinction has been made between two types of perspectives one can adopt while self-reflecting: a self-immersed versus a self-distanced perspective (Ayduk & Kross, 2010). When adopting a self-immersed perspective, the event and associated emotions are (re-)experienced from a first person perspective, visualizing them through one’s own eyes (Nigro & Neisser, 1983). When adopting a self-distanced perspective, the event and associated emotions are (re-)experienced from a third-person perspective, visualizing them through the eyes of an external observer or “fly on the wall” (Robinson & Swanson, 1993).

In both healthy and depressed populations, self-distancing appeared to be associated with reduced levels of negative emotions (Ayduk & Kross, 2010). In particular, in contrast to adopting a self-immersed perspective, self-distancing led healthy individuals to experience decreased levels of emotional and physiological reactivity (Ayduk & Kross, 2008) as well as a reduced amount of intrusive ideation (Ayduk & Kross, 2010), and to be buffered against psychological stress (Denny & Ochser, 2014; Penner et al., 2016) and depressed affect (Kross & Ayduk, 2008). Similarly, people with major depressive disorder experienced reduced negative affect and depressogenic thought accessibility when reflecting on negative experiences from a self-distanced perspective (Kross, Gard, Deldin, Clifton, & Ayduk, 2012). Interestingly, the impact of self-distancing on negative emotions linearly increased with levels of depression severity (Kross & Ayduk, 2009), suggesting that especially people suffering from more severe forms of depression might benefit from adopting a self-distanced perspective.

Although self-distancing has been shown to be an effective way to influence negative emotions, so far almost all prior studies have examined this without considering a key component of emotional responses: time. Indeed, emotions are processes that unfold over time, and studying their dynamic nature is critical for a better understanding of them (Frijda, 2007; Verduyn, Van Mechelen, Tuerlinckx, Meers, & Van Coillie, 2009), as well as of their link with affective disorders and psychological wellbeing (Houben, Van Den Noortgate, & Kuppens, 2015). Moreover, time is at the heart of dominant models of emotion regulation (Gross, 2015; Koole, 2009) and it has been argued that the modulating potential of regulation strategies may change as the...
emotion unfolds (Kalokerinos, Résibois, Verduyn, & Kuppens, 2017). One notable exception of research on self-distancing taking a dynamic approach is a study by Verduyn, Van Mechelen, Kross, Chezzi, and Van Bever (2012), who found that adopting a self-distanced perspective shortens the duration of emotional experience. However, this study focused on emotion duration only and did not examine the influence of self-distancing on the pattern of emotion unfolding.

Research on emotion dynamics found that emotions unfold across two phases (Davidson, 1998; Koole, 2009) with two associated dynamic features (Kuppens & Verduyn, 2015; Résibois, Kalokerinos, et al., 2017; Résibois, Verduyn, et al., 2017): emotion explosiveness and accumulation. Emotion explosiveness (primarily coming to the fore during the onset stage of emotion unfolding) reflects whether the emotional episode has a steep versus a gentle start. Emotion accumulation (primarily coming to the fore during the offset stage of emotion unfolding) reflects whether emotion intensity increases over time versus goes back to baseline. As emotion explosiveness and accumulation have been found to be the dominant sources of variability in emotion unfolding (Résibois, Kalokerinos, et al., 2017; Résibois, Verduyn, et al., 2017; Verduyn et al., 2009; Verduyn, Van Mechelen, & Frederix, 2012), the impact of self-distancing on emotion dynamics can be best understood by examining how adopting a self-distanced (vs. self-immersed) perspective modulates these two key temporal features.

The aim of this study is thus to examine the impact of perspective taking on emotion explosiveness and accumulation. As emotion regulation strategies are assumed to mainly influence the later rather than the earlier stage of emotion unfolding (Koole, 2009), we expect self-distancing to especially lead to lower levels of accumulation and to a lesser extent to lower levels of explosiveness. Moreover, as the impact of adopting a self-distanced perspective on emotion intensity has been found to be especially strong amongst people suffering from more severe degrees of depression (Kross & Ayduk, 2009), we expect that the impact of perspective taking on emotion unfolding will be especially strong for people with higher levels of depression severity.

To test these hypotheses, we induced negative emotions using a negative social feedback paradigm, and asked people to read and think about the presented feedback while adopting a self-immersed or self-distanced perspective. Similar to Verduyn and colleagues (Kalokerinos et al., 2017; Résibois, Kalokerinos, et al., 2017; Verduyn et al., 2009; Verduyn, Van Mechelen, & Frederix, 2012), we made use of the intensity profile tracking approach to collect data on emotion unfolding. This procedure, originally developed by Frijda and colleagues (Frijda, 2007; Sonnemans & Frijda, 1994), consists of having people draw profiles reflecting changes in the intensity time course of recently experienced emotions.

2. Method

2.1. Participants

Participants were 70 (46 females and 24 males) native Dutch-speaking KU Leuven students (mean age: 22.57 years, SD = 4.27) who provided written informed consent prior to the start of the study and received 15 Euros as compensation for their participation. The number of participants was based on a previous study examining the effect of spontaneous emotion regulation on the temporal features of emotion intensity, where 74 participants were shown to be sufficient to detect meaningful effects (Résibois, Kalokerinos, et al., 2017).¹ The study was approved by the ethics committee of KU Leuven.

2.2. Materials

2.2.1. Center for Epidemiologic Studies Depression (CES-D) scale

We measured participants’ depressive symptoms that occurred during the week prior to the study by calculating the mean score (α = 0.85, Mean = 0.60, SD = 0.36) on a Dutch translation of the CES-D scale (Radloff, 1977), which consists of 20 items (e.g., “I thought my life had been a failure”) rated using a 4-point Likert scale, ranging from 0 (rarely or none of the time (< 1 day)) to 3 (most or all of the time (5–7 days)).

2.2.2. Social feedback

Emotions were induced using a social feedback procedure (Bushman & Baumeister, 1998; Eisenberger, Inagaki, Muscatell, Byrne Haltom, & Leary, 2011) on an earlier performed task. The feedback consisted of a table of ratings on desirable traits (social, interesting, and honest), undesirable traits (stubborn, superficial, and naive) and a general item reflecting whether the judge would like to have the participant as a friend. The negative feedback involved low scores on desirable traits and the item reflecting the wish of the judge to have the participant as a friend, and high scores on undesirable traits. Neutral feedback involved ratings close to the neutral scale midpoint for all feedback items. In total, participants received eight sets of negative, and eight sets of neutral feedback. Feedback appeared in one of two pre-specified orders with a maximum of two negative trials following each other. Feedback order was not related to either explosiveness (p = 0.70) or accumulation (p = 0.20), nor did controlling for feedback order alter any of the reported conclusions.

2.2.3. Emotion intensity profile tracking method

Participants reported on changes in negative affect by drawing an intensity profile with a computer mouse on a two-dimensional grid. Time was represented on the X-axis, with coordinates having a resolution of 780 pixels and being divided into two main parts. The first part, occupying one-third of the screen, represented the 30-second “reading the feedback” period, whereas the second part, occupying two-thirds of the screen, represented the 60-second “thinking about the feedback” period. The intensity of participants’ negative affect was represented on the Y-axis, with coordinates having a resolution of 510 pixels and being divided into seven intervals ranging from ‘none’ to ‘very high’.

2.3. Procedure

Similar to Study 1 in Résibois, Kalokerinos, et al. (2017), the experiment consisted of four phases. In Phase 1 (duration: 20 min), participants wrote short texts on pre-specified topics reflecting their life goals (e.g., “Describe what you would like to achieve in the next 10 years”). They were made to believe that these texts would be read by four judges, who would independently try to estimate their personality from these texts. Participants were further explained that the (supposed) judges would be deceived in thinking that each text was written by someone else, which would (supposedly) allow the experimenters to study the stability of the judges’ first impressions.

In Phase 2 (duration: 20 min), participants completed a number of questionnaires including the CES-D while the judges were supposedly estimating participants’ personality based on their texts. In addition to the CES-D questionnaires measuring emotion regulation, personality and well-being were assessed (see Supplementary Information for the full list of questionnaires). Controlling for all these additional variables did not alter any of the conclusions we will further report and we will therefore leave these questionnaires aside in the remainder of the paper.

In Phase 3 (duration: 45 min), participants were exposed to social feedback and were asked to read and think about it for 1 min. The first eight feedback screens were preceded by an instruction to adopt a self-

¹ According to a formal a priori power analysis (Faul, Erdfelder, Lang, & Buchner, 2007) (df = 0.58, alpha = 0.05, power = 0.80), a sample of at least 26 participants could be needed for a paired-sample t-test (self-distanced vs. self-immersed). The effect size estimate η² = 0.58 is based on a meta-analysis of Webb, Miles, and Sheeran (2012).
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