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# "Good things never last": Dampening positive emotions influences our optimism levels

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**Título:** Lo bueno dura poco": disminuir las emociones positivas influye en nuestros niveles de optimismo.
**Resumen:** A pesar del creciente interés en la comprensión de las estrategias de regulación emocional (RE) de las emociones positivas y su relación con la salud mental, la relación entre los diferentes estilos de respuesta al afecto positivo y estilos cognitivos como el optimismo aún no se ha probado empíricamente. El objetivo del presente estudio fue evaluar el efecto de las estrategias para regular emociones positivas (evaluadas por el cuestionario *Response to Positive Affect* -RPA) sobre el optimismo, y la posible mediación del afecto positivo en esta relación. 250 participantes completaron el cuestionario RPA, medidas de optimismo y afecto positivo, y realizaron un procedimiento de inducción emocional aplicado a través de Internet. Los resultados muestran que el afecto positivo no media la relación entre las estrategias de regulación emocional y los niveles de optimismo. No obstante, disminuir las emociones positivas (*"dampening"*) fue la única estrategia que predijo los niveles de optimismo después de la inducción. Se señala la necesidad de nuevos estudios con el fin de mejorar la comprensión de los mecanismos implicados en la regulación y el optimismo.
**Palabras clave:** Respuesta al afecto positivo; regulación emocional; disminución; inducción de estado de ánimo positivo; optimismo.

**Abstract:** Despite the increasing interest in understanding positive emotion regulation (ER)strategies and their relation with mental health, the relationship between responses to positive affect and cognitive styles such as optimism has yet to be tested empirically. Therefore, the objective of the present study was to empirically assess whether the effect of positive ER strategies (tested by the Responses to Positive Affect questionnaire -RPA) on optimism could be mediated by positive mood. Two hundred and fifty participants completed RPA questionnaire, measures of optimism and positive affect and received a positive mood induction (PMI) through Internet. Results show that induced positive mood did not mediate the relation between ER strategies and optimism levels. Nevertheless, dampening strategy was the only ER strategy that predicted the post-induction optimism level. Our findings point out the necessity of further studies in order to better understand the mechanisms involved in the emotional regulation and optimism.
**Key words:** Response to positive affect; emotion regulation; dampening; positive mood induction; optimism.

## Introduction

Optimism is a pattern of positive future-directed thinking (Carver, Scheier, & Segerstrom, 2010) which has proven to have a significant role in mental health. In this sense, there is wide evidence of the relationship between this construct and higher levels of subjective well-being, engagement coping and lower levels of avoidance coping, health-protective behaviors, better physical health, socioeconomic benefits, more persistence in educational efforts, and better social relationships (e.g. Carver et al., 2010; Conversano et al., 2010; Scheier, & Carver, 1985). Therefore, it seems that optimism exerts an indirect effect on the quality of life. On the other hand, several authors have suggested that optimism is mediated by the opportunity to experience positive emotions (Fredrickson, Tugade, Waugh, & Larkin, 2003), pointing out the relevance of these emotional experiences for the maintenance of this way of thinking. As sustained by the broaden-and-build theory (e.g., Fredrickson, 1998, 2001), positive emotions do more than simply feel good in the moment. People who experience more positive emotions are more likely to develop long-term plans and goals. Thus, experiencing positive emotions in the present also increase the probability that people will feel good in the future (Fredrickson et al., 2003). Moreover it has been demonstrated that positive emotions, together with plans and goals predicted greater well-being 12 months post-bereavement (e.g., Bonanno & Keltner, 1997; Fredrickson et al., 2003; Keltner & Bonanno, 1997; Stein, Folkman, Trabasso, & Richards, 1997). Hence, it could be reasonable to think that the specific way in which we regulate our emotions does not only affect our immediate experience of positive or negative affect but also could have an indirect impact in our optimism levels.

Extensive research has been done on the processes of ER and their relation with physical health and mental disorders (Gross, 1998); however, this research has primarily focused on the regulation of negative rather than positive emotions (Carl, Soskin, Kerns, & Barlow, 2013). Despite this, there is also empirical evidence about the effects of positive emotion regulation on mental health and well-being (Aldao, Nolen-Hoeksema, & Schweizer, 2009; Brown & Barlow, 2009).

On the one hand, people can use several ER strategies in order to maintain or maximize positive emotions. In this line, positive rumination is defined as the tendency to respond to positive affective states with recurrent thoughts about positive self-qualities (self-focused strategies) or positive affective experience (emotion-focused strategies). On the other hand, people can use ER strategies to diminish positive emotions. Dampening is a down-regulation strategy, which reduces the intensity and the duration of the positive mood state (Feldman, Joormann, & Johnson, 2008). Some studies have found relationships between low use of positive rumination and high use of dampening strategies with de-

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pression, low self-esteem, neuroticism, and anxiety (Aldao et al., 2009; Carl et al., 2013; Eisner, Johnson, & Carver, 2008; Olofsson, Boersma, Engh, & Wurm, 2014; Werner-Seidler, Banks, Dunn, & Moulds, 2013). However, to our knowledge, no studies have explored the relationship between ER of positive emotions and a well-being and positive thinking style indicator such as optimism.

For this reason, the aim of the present study is to test the role of the positive ER strategies on optimism when positive emotions arise. In order to do that, a positive mood induction (PMI) was used. Our hypotheses are (1) Styles of response to Positive Affect would influence the efficacy of a PMI procedure on optimism. Specifically: (1a) both emotion-focused and self-focused positive rumination styles would increase the effect of a PMI procedure on optimism; (1b) dampening style would decrease the effect of a PMI procedure on optimism. Besides, taking into account the already known relationship between positive affect and optimism, we hypothesize that (2) the relationship between the level of positive mood before the PMI and the level of optimism after the PMI would be mediated by the level of positive mood after the PMI; and (3) the intensity of the change in positive mood would influence the level of post-induction optimism.

## Method

### Participants

The sample was composed by 250 Spanish-speaking participants (82.4% women), between 17-66 years old ($M$ = 28.65, $SD$= 9.9). Other characteristics of the participants can be seen in Table 1.

**Table 1.** Sample characteristics.

| | |
|---|---|
| **Occupational status** | |
| Students | 48.8% |
| Employee | 38.8% |
| Unemployed | 11.2% |
| Retired | 1.2% |
| **Nationality** | |
| Argentina | 64% |
| Antilles | .4% |
| Chile | 2% |
| Colombia | .8% |
| Ecuador | .4% |
| Italy | .4% |
| Mexico | 2.4% |
| Romania | .4% |
| Spain | 28.4% |
| Venezuela | .8% |
| **Past psychological disorders** | |
| Yes* | 28.8% |
| No | 71.2% |
| **Past physical problems** | |
| Yes** | 20.4% |
| No | 79.6% |

* In most of the cases emotional disorders.
**For the majority fibromyalgia, allergies, and asthma

### Measures

- *Responses to Positive Affect questionnaire (RPA;* Feldman et al., 2008). The RPA assesses cognitive responses to positive affective states. It has 17 items rated on a 4-point scale (1="*almost never*", 4="*almost always*"). Participants are asked to respond how they usually think when they feel happy, enthusiastic, or excited. The original measure consists of three factor-analytically derived subscales: "Dampening" (e.g.: "Think I don't deserve this") with 8 items, "Self-focused positive rumination" (e.g.: Think: "I am achieving everything") with 4 items, and "Emotion-focused positive rumination" (e.g. Think about how strong you feel) with 5 items. Initial psychometric results with the original English version show adequate reliability and validity for the subscales. The findings about acceptable internal consistency of the measure (dampening α= .79, self-focused positive rumination α= .71, and emotion-focused positive rumination α= .69) has been replicated in two consecutive studies (Feldman et al., 2008). RPA has been validated also in Dutch (Raes, Daems, Feldman, Johnson, & Van Gucht, 2010) and Chinese (Yang, & Guo, 2014). In the current sample, internal consistency coefficient was high for each subscales, being dampening α= .82, self-focused positive rumination α= .84, and Emotional-focused positive rumination α=.75.
- *Visual Analogue Scale* (VAS): It is the most widely used instrument for measuring different emotions in mood induction research (Bates, Thompson, & Flanagan, 1999; Brosse, Craighead, & Craighead, 1999; Segal et al., 1999; Watkins, 2008; Williams Barnhofer, Crane, & Beck., 2005). Several studies have concluded that VAS is a valid and reliable strategy to assess current mood (McCormack, Horne, & Sheather 1988). In this study, a variant of the Gross and Levenson (1995) measure was applied: participants were asked to quantitatively assess (*1 = "not at all" to 7 = "totally"*) the degree to which they experienced two emotions (joy, and vigor/energy). This scale was applied before and after the PMI procedure. A global mean was calculated from the scores of both emotions, called Positive Mood Mean (PMM). In order to test the change in PMM, a subtraction of the post measures minus the pre measures was calculated.
- *Life Orientation Test-revised (LOT-R, Scheier, Carver, & Bridges, 1994; Spanish version: Perczek, Carver, Price, & Pozo-Kaderman, 2000).* LOT-R is the revised version of the original test realized by Scheier and Carver (LOT, 1985). This is the most used self-report instrument to assess individual differences in generalized optimism, and it includes 10 items (including 4 filler items) to be responded in a 5-point scale (*0="strongly disagree",* to *4="strongly agree"*). Cronbach's alpha for the entire six items (removing filler items) was .78, suggesting an acceptable level of internal consistency (Scheier et al., 1994).

### The Positive Mood Induction (PMI) Procedure

Emotion elicitation through films is one of the mood induction procedures more widely used, especially because it meets central requirements to guarantee the success of an elicitation procedure: the capacity to recreate "real life", its easiness to be replicated, and the compliance of ethical conditions (Gross & Levenson, 1995; Rottenberg, Ray, & Gross, 2007). For this experimental design, we chose a fragment of the film *500 days of Summer (Director Marc Webb, Fox Searchlight Pictures),* to induce Joy. This fragment was selected because it showed to be effective in eliciting joy in a previous study (Bednarski, 2012). The clip is available in the website "moviesclips.com".

### Procedure

The sample was recruited online. A link to the study was published in different forums and social networks that served as a platform to disseminate the information of the study. It was explained that the study was addressed to investigate the different ways to regulate our emotions. All participants were informed that participation was voluntary and confidential and gave informed consent of their willingness to participate. Before the survey was administered, demographic data and information regarding history of psychological problems and physical illness were collected. Pre-induction survey included RPA, VAS scale and LOT-R. Then the PMI procedure was used: they were instructed to watch a positive validated film (Bednarsky, 2012). Afterwards, post-induction survey was administered including VAS scale and the LOT-R.

### Data analyses

All analyses were carried out using SPSS v 22.0. In order to analyze the use of the different positive ER strategies measured through RPA questionnaire, corrected means of the subscales were calculated (taking into account the number of items that compose each one so they could be comparable). Then, an analysis of variance (ANOVA) was used in order to analyze if there were significant differences among them.

A *t* student for related samples was used in order to analyze the efficacy of the PMI, using pre and post-induction positive mood measures. Furthermore, an analysis of frequency was used to establish which proportion of participants augmented, diminished or maintained their PMM scores after the PMI.

Four mediation analyses were carried out to test the first and second hypotheses, using the macro PROCESS for SPSS, version 2.15 (choosing "model 4"), following the procedure described by Hayes (2009). Since some participants showed post-induction PMM levels that indicated the PMI was not effective (they reported a small increase or even a decrease in PMM), all participants who did not achieve level "3" ("*a little*") in the post-induction VAS scales of joy or energy were removed from the analyses (as a result, a total of 228 participants were included in the four mediation analysis). To test the first hypothesis, the three ER strategies (self-focus, emotional focus and dampening) were included as independent variables, post-induction level of PMM was included as mediator variable, and post optimism level was included as dependent variable. Pre-induction level of optimism, age, sex and nationality were included as covariates. Subsequently, to test the second hypothesis, a mediation analysis was performed including pre-induction level of PMM as independent variable, post-induction level of PMM as mediator variable, and post-induction optimism level as dependent variable. Pre-induction level of optimism, age, sex and nationality were also included as covariates. In order to test the adjustment of the different proposed models, the indirect effect (*ab*), direct effect (*c'*) and/or total effect (*c*) were examined. Confidence intervals of 95% were used (with a maximum of 5000 iterations), which should not include the zero in order to consider the indirect effect as significant. We did not test the association between the independent and dependent variable before the mediation test due to some authors recommend to abandon this requirement to examine the indirect effects if there are theoretical reasons (Hayes, 2009; Rucker, Preacher, Tormala, & Petty, 2011).

Lastly, to test the third hypothesis, we calculated the intensity of the PMI (*Intensity of the PMI = post-induction PMM* minus *pre-induction PMM*). In order to explore the relationship between PMM and optimism after the PMI, a partial correlation analysis between post-induction PMM and post-induction optimism was conducted (with the whole sample), controlling for the effect of the pre-induction optimism level.

## Results

### Strategies used by participants

Data collected through the Responses to Positive Affect questionnaire (RPA; Feldman et al., 2008) show that participants used more emotion-focused positive rumination ($M$=2.84; $SD$=.67) and self-focused positive rumination ($M$= 2.26; $SD$= .77) than dampening strategies ($M$=1.84; $SD$=.65). An ANOVA analysis showed that these differences were significant ($F_{(2,248)} = 129.43$, $p < .001$).

### Induction efficacy

To test the PMI efficacy a t student for related samples was conducted with PMM and optimism scores measured before and after the PMI procedure. Results indicated significant increases in both PMM and optimism after mood induction with small effect sizes (see Table 2).

**Table 2.** Positive Mood Induction outcomes.

| Variable | PRE *M*(*sd*) | POST *M* (*sd*) | *t* | *p* | *Cohen's d* |
|---|---|---|---|---|---|
| Positive Mood Mean | 3.94 (1.32) | 4.22 (1.31) | -5.536 | <.001 | -0.213 |
| Optimism | 22.1 (4.51) | 22.53 (4.55) | 3.199 | <.001 | -0.100 |

Cohen (1988) defines as $d$ <.2 are regarded as a "small" effect size, $d$ = .5 as "medium," and $d \geq .8$ as "large."

Analysis of frequency showed that 47.2% (n = 118) of participants increased their PMM score, 24.4% (n = 61) of the participants decreased it, and 28.4% (n = 71) maintained their PMM scores after the PMI.

### Mediation analyses

To test the first hypotheses, a mediation analysis using bootstrapping procedures was carried out. Self-focus strategy was included as independent variable, post-induction PMM was included as mediator variable, and post-induction optimism was included as dependent variable. Pre-induction optimism, age, sex and nationality were included as covariates. Bias-corrected bootstrap 95% confidence interval for the indirect effect (*ab* = .01) did not include zero (-.01 to .04), meaning that there was not an indirect effect of the use of self-focus strategy on post-induction optimism through post-induction PMM (see Figure 1).

In the second mediation analysis, emotion-focus strategy was included as independent variable, post-induction PMM was included as mediator variable, and post-induction optimism was included as dependent variable. Pre-induction optimism, age, sex and nationality were included as covariates. Bias-corrected bootstrap 95% confidence interval for the indirect effect (*ab* = .02) did not include zero (-.01 to .05), meaning that there was not an indirect effect of the use of emotional focus strategy on post optimism through post level of PMM (see Figure 2).

In the third mediation analysis, dampening strategy was included as independent variable, post-induction PMM was included as mediator variable, and post-induction optimism was included as dependent variable. Pre-induction optimism, age, sex and nationality were included as covariates. Bias-corrected bootstrap 95% confidence interval for the indirect effect (*ab* = -.00) did not include zero (-.01 to .00), meaning that there was not an indirect effect of the use of dampening strategy on post optimism through post level of PMM (see Figure 3).

To test the second hypothesis, pre-induction PMM was included as independent variable, post-induction PMM as mediator variables, and post-induction optimism as dependent variable. Pre-induction level of PMM, age, sex and nationality were also included as covariates. Bias-corrected bootstrap 95% confidence interval for the indirect effect (*ab* = .02) did not include zero (-.23 to .33), meaning that there was not an indirect effect of the pre-induction level of PMM on post-induction optimism level through post-induction level of PMM (see Figure 4).

### Partial Correlation

There was not found a significant relationship between post-induction positive mood and post-induction optimism, controlling the effect of pre-induction optimism, $r$ (241) = -.01, $p$ = .83.

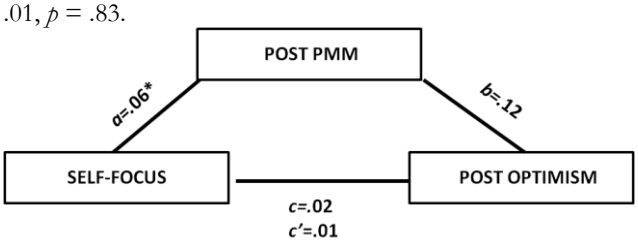


**Figure 1.** Post PMM mediation on the relation between self-focus strategy and post-induction optimism
*Note.* All values are beta coefficients; $c$ = total effects; $c'$ = direct effect; * $p$< .05.

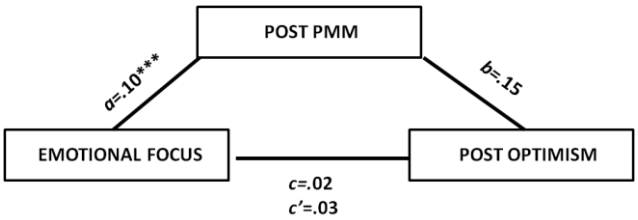


**Figure 2.** Post PMM mediation on the relation between emotional-focus strategy and post-induction optimism
*Note.* All values are beta coefficients; $c$ = total effects; $c'$ = direct effect; *** $p$< .001.

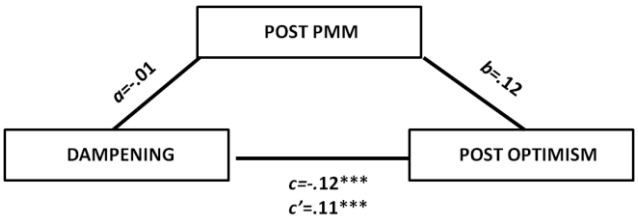


**Figure 3.** Post PMM mediation on the relation between dampening strategy and post-induction optimism
*Note.* All values are beta coefficients; $c$ = total effects; $c'$ = direct effect; *** $p$< .001.

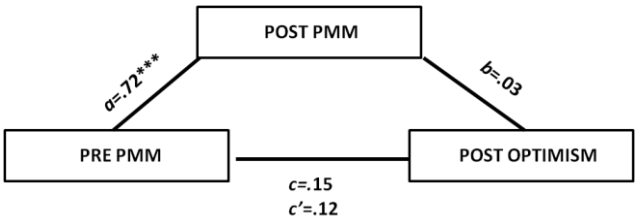


**Figure 4.** Post PMM mediation on the relation between pre PMM and post-induction optimism
*Note.* All values are beta coefficients; $c$ = total effects; $c'$ = direct effect; *** $p$< .001.

## Discussion

The aim of this study was to investigate whether the effect of positive ER strategies on optimism could be mediated by

positive mood. Therefore two hundred and fifty participants were asked to complete RPA questionnaire and were assessed in terms of optimism and positive affect before and after a positive mood induction procedure. Firstly we hypothesized that response to Positive Affect styles would influence the efficacy of a PMI procedure on optimism. Specifically we expected that both emotion-focused and self-focused positive rumination styles would increase the effect of a PMI procedure on optimism, whether dampening style would decrease the effect of a PMI procedure on optimism. Secondly, we hypothesized that the relationship between the level of PMM before the PMI and the level of optimism after the PMI would be mediated by the level of PMM after the PMI; and that the intensity of the change in positive mood (pre-induction minus post-induction PMM) would influence the level of post-induction optimism.

Our first hypothesis did not find a confirmation. The PMM did not mediate the relation between none of the response to Positive Affect styles and optimism. Nevertheless, our results showed that only dampening style predicted the level of post-induction optimism.

Results did not confirm our second hypothesis: the level of post-induction positive mood did not mediate the relationship between pre-induction positive mood and post-induction optimism. Lastly, our findings cannot support our third hypothesis: data has shown that the intensity of changes in positive affect induction did not correlate with optimism.

Considering the result on the relationship between dampening style and optimism, it could be suggested that increasing our positive mood, focusing our attention on the feelings and sensations derived by a positive experience (emotion-focused positive rumination), or focusing on positive judgments about ourselves (self-focused positive rumination) may not be enough to alter our overall positive perception about the future (optimism). However, using an emotional regulation style characterized by decreasing positive emotions (dampening) can negatively influence our optimism.

But, why dampening strategy behaves differently from the other ER strategies? Dampening style has several shared characteristics with optimism. Optimism refers to a positive future thinking tendency, meanwhile dampening strategy includes a negative way of perceiving the future (*"these feelings won't last"*), the present (*"this is too good to be true"*) and the self (*"I don't deserve this"*). Therefore, we could hypothesize that this strategy can influence optimism because it could affect two central elements of it: the positivity and the future focus. Further studies should address this issue and explore possible explanations for this finding in both general and clinical populations. This result should be taken in consideration when planning an intervention addressed to improve optimism levels.

This study presents several limitations. Regarding the composition of the sample, there is an unbalance in the proportion of males and females. Although this limitation is common in different studies (e.g. MacLeod, 1996), it would be recommended to replicate the study including a more equalized sample. In relation to the PMI procedure, it was brief (46 sec.) and not repeated following the first exposure. Future studies could also include a multiple and/or prolonged mood induction, in order to assess if the mediation role of the response styles would be higher on mood. Moreover, it is worth to mention that it was an online delivered video. Although its characteristics (online delivering and video format) have great advantages (great accessibility and dissemination), they impede a more profound control of some variables (for instance, to what extent were the participants paying attention to it) that could only be controlled in a laboratory study. Hence, these factors might have influenced some of the results. Concerning the measures used in this study, well-validated measures were used. In the case of positive emotion regulation strategies (RPA, Feldman et al., 2008) and optimism (LOT-R, Scheier, Carver, & Bridges, 1994), they are general questionnaires that assess trait-like more than state-like characteristics. It is possible that this type of assessment is not sensitive enough to test changes before and after a mood induction procedure.

Nevertheless, these findings make an important contribution to the understanding of positive emotions regulation strategies. Further studies are needed in order to see if this pattern is also present in clinical populations. It could guide the efforts in this field, being relevant in the training of emotion regulation in clinical and non clinical populations. Finally, we think that it could be relevant to compare both responses to positive and negative affect. Exploring and understanding the influence of emotion regulation processes - in this case filling the gap in the research of positive emotion regulation processes- is highly relevant, given its role over well-being and mental health of individuals.

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