

A Memory Based Positive Psychology Activity Intervention

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Introduction

- The field of Positive Psychology focuses on positive emotions, character traits, and techniques used to increase happiness (Seligman, Steen, Park, & Peterson, 2005).
 - This is commonly studied by testing how positive activity interventions (PAIs) effect scores on various measures of affect and well-being.
 - Previous research has demonstrated the effective use of some PAI techniques to reduce unhappiness and increase overall happiness (Seligman, Steen, Park, & Peterson, 2005).
- Sin and Lyubomirsky (2009) conducted a meta-analysis and found that although there are many factors that contribute to the success or failure of PAI's, there was an increase in well-being and a decrease in depressive symptoms overall.
- Studies have suggested that autobiographical memories are related to self-concept and well-being.
 - Positive autobiographical memories elicited positive self-evaluations and negative autobiographical memories elicited negative self-evaluations (Fitzgerald, Slade, & Lawrence, 1988).
 - The current study used a gratitude activity, a positive autobiographical memory retrieval activity and a neutral autobiographical memory retrieval control condition.
- There are important limitations to Positive Psychology research studies that are seldom discussed such as:
 - use of convenience samples of healthy, young adults, online research designs, placebo effects, and self-selection that may occur in much of the research.

The current experiment

- The current study is an ongoing exploration of PAIs on measures of depression, happiness, and mood. Measures of locus of control (LOC), spirituality, and other demographics were introduced and analyzed during the subsequent cohorts of the study.
- The purpose of this research is to investigate the effect of positive autobiographical memory retrieval on participants' long-term affect. The autobiographical memory intervention was predicted to be as effective as a gratitude based intervention used by Seligman, et al., (2005) both of which will be more effective than neutral autobiographical memory retrieval.
- LOC was included because previous research has shown that LOC predicts depression scores and may also predict other well-being measures.
- Participants signed up for one of two different experiments (Autobiographical Memory or Positive Psychology) which were identical with the exception of the title and one sentence in the instructions suggesting the activities may increase happiness in the positive psychology version).

Method

Participants

- Participants were 191 individuals enrolled in psychology courses at California State University, Fullerton. The resulting sample was 67% female and 20% male (13% failed to report), with an age range of 17 to 29 and a mean age of 19.9 ($SD = 2.7$).

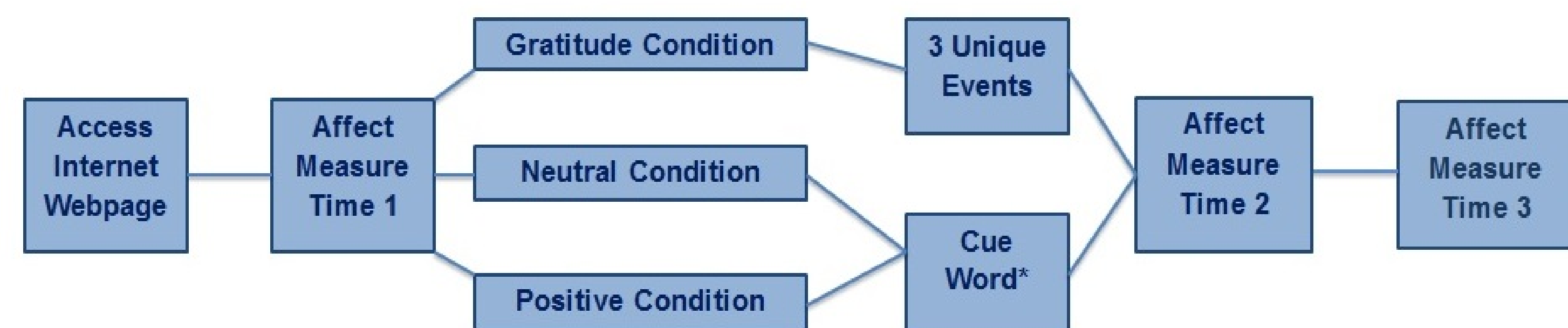


Figure 1. Experimental procedure.

- * In the memory conditions participants were presented with specific cue words (Barnier, Conway, Mayoh, Speyer, Avizmil, & Harris, 2007) to elicit memories specific to their assigned condition and were asked to write about them.
- Participants' affect was measured before and after the manipulations using depression, happiness, mood, and locus of control scales similar to those used by Seligman et al. (2005).

Method Continued

Measures

- Scale of Positive and Negative Experience (SPANE).** The scale is designed to assess subjective feelings of well-being and ill-being (Diener & Diener, 2009). This is a 12-item questionnaire that includes six items to measure positive feelings and six items to measure negative feelings with a scale of 1 (very rarely or never) to 5 (very often or always).
- Subjective Happiness Scale (SHS).** This scale is a 4-item scale of global subjective happiness. Two items ask respondents to characterize themselves using both absolute ratings and ratings relative to their peers. The final two items describe happy and unhappy individuals and asks respondents the extent to which each characterization describes them. The items are on a 7-point scale (Lyubomirsky & Lepper, 1999).
- Center for Epidemiologic Studies Depression Scale (CES-D).** This scale is a 20 item self-report scale designed to assess depressive symptomatology (Radloff, 1977). The scale items lists ways in which an individual might have felt or behaved. The scale ranges from 1 (Rarely or none of the time) to 4 (Most or all of the time). Higher scores indicate the presence of more symptomatology.
- Levenson Multidimensional Locus of Control Inventory (LOC).** This scale is a 24-item, self-report questionnaire comprised of three subscales that assess how an individual believes events are caused internal factors, powerful others, and chance Levenson, H. (1974). The inventory is scored on a 6-point scale, where respondents indicate the extent to which they agree or disagree with statements.

Results

Importantly, participants from the two experiments did not significantly differ from each other on several baseline measures (CESD, SHS, SPANE [positive and negative subscales], LOC [own actions, powerful other, and chance subscales], or age, all t 's < 1.3, all p 's > .22 suggesting that self-selection alone may not be a problem in the current study.

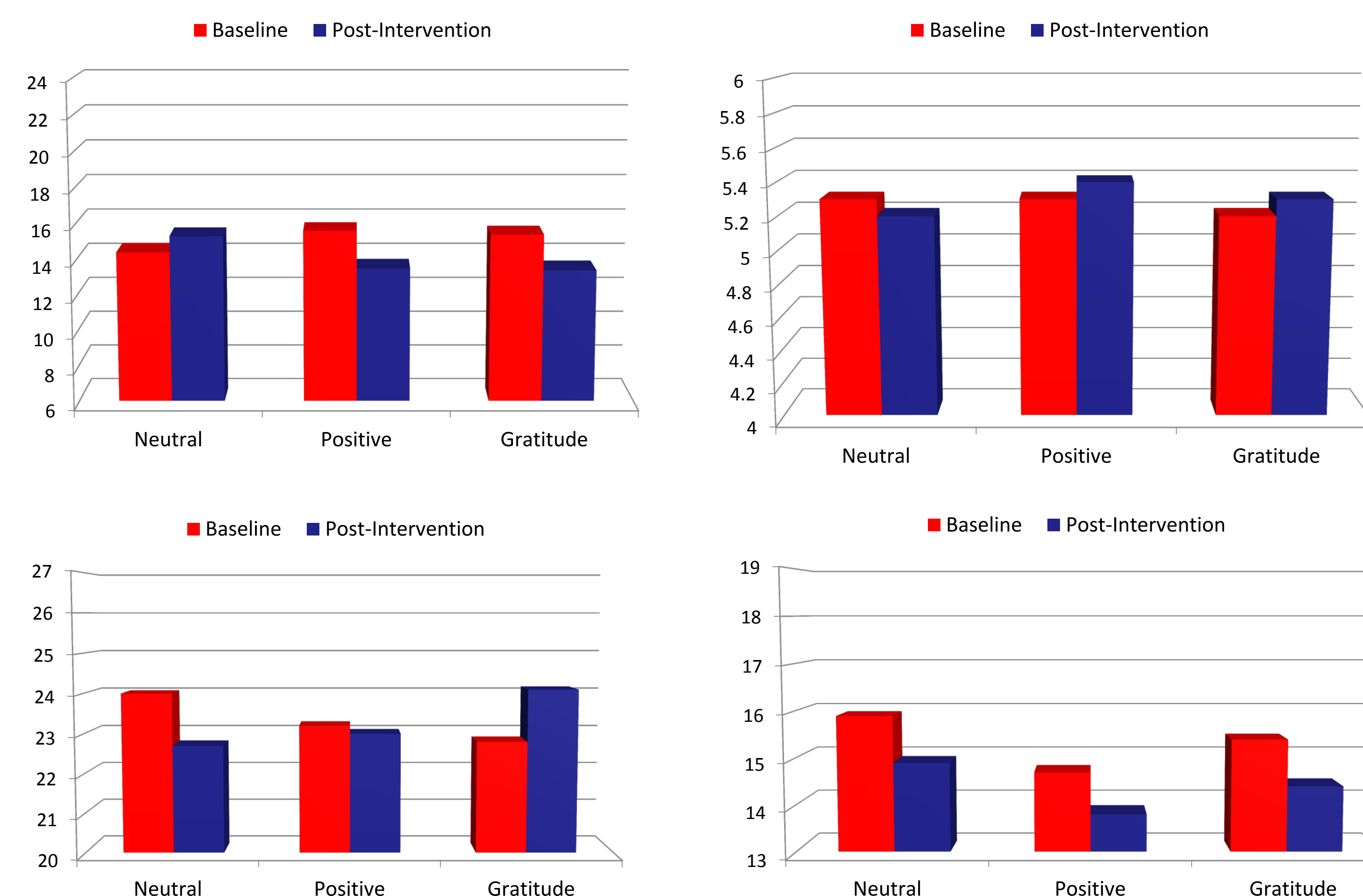


Figure 2. Mean baseline and post-intervention scale scores by condition for the CESD, SHS, and negative and positive SPANE (clockwise from top left). The range of the y-axes are approximately one standard deviation above and below the overall mean score.

Results and Discussion

- Figure 2 shows that the overall trend was for mean scale scores to change in the predicted directions. These trends were not statistically significant for the SHS (all F 's < 1). For the CESD there was a trend for an interaction [$F(2,141)=2.15$, $MSE=30.821$, $p=.12$, $\eta_p^2=.03$] with both interventions decreasing over time, but not the control. The positive affect subscale of the SPANE showed a significant interaction [$F(2,112)=5.71$, $MSE=5.922$, $p<.01$, $\eta_p^2=.09$] with scores decreasing for the control, increasing for the gratitude group, and remaining stable for the positive memory group. Scores on the negative affect subscale decreased for all groups [$F(1,116)=5.47$, $MSE=8.685$, $p=.02$, $\eta_p^2=.05$].
- To test whether our conditions were different as intended, we ran t -tests comparing participant ratings of the memories they reported. The primary indicator was that valance ratings (-3 to +3) were lower for the control group (neutral memories, $M=.51$) than the two intervention groups (positive memories, $M=2.03$; gratitude, $M=1.68$).

- As noted earlier, there are concerns over self-selection and placebo effects in positive psychology research. Self-selection and knowledge of hypotheses may effect many factors such as, time spent, effort put forth, and the expectations of the participant.

- Two questions were tested with a series of hierarchical regressions. First, would a participant's locus of control predict scores on the CESD at time 2 (post-intervention) for both experiments? Second, would an index of intervention completion add predictive power after accounting for LOC (step 1) and CESD scores at time 1? The answers seem to depend on which experiment is being analyzed.

Experiment	Regression Step		
	LOC	CESD 1	Intervention
Autobiographical Memory	$R^2 = .31$, $p = .003$	$\Delta R^2 = .15$, $p = .002$	$\Delta R^2 = .02$, $p = .224$
Positive Psychology	$R^2 = .22$, $p = .052$	$\Delta R^2 = .23$, $p = .002$	$\Delta R^2 = .13$, $p = .006$

- We also ran the regressions above after removing participants in the control condition. As can be seen in Table 2, this did not alter results much, but p values increased due to the loss of power.

Experiment	Regression Step		
	LOC	CESD 1	Intervention
Autobiographical Memory	$R^2 = .26$, $p = .142$	$\Delta R^2 = .13$, $p = .080$	$\Delta R^2 = .04$, $p = .346$
Positive Psychology	$R^2 = .19$, $p = .314$	$\Delta R^2 = .17$, $p = .063$	$\Delta R^2 = .14$, $p = .071$

- It is interesting to note that the LOC subscales contributing to predictive power differed across experiment. As one would expect, internal LOC was negatively related to CESD scores ($\beta = -.4$) for the Positive Psychology group. In contrast, for the Autobiographical Memory group external LOC was the strongest predictor of CESD scores ($\beta = .56$).

- An additional question we had was how much the changes in scores were simply due to regression to the mean.

Condition	Depression Group	Time 1	Time 2	Change
Neutral Memory				
	High	23.53 (1.32)	23.24 (1.84)	.29
	Low	7.88 (1.11)	9.71 (1.55)	-1.83
Positive Memory				
	High	26.14 (1.45)	19.57 (2.03)	6.57
	Low	9.48 (1.11)	9.96 (1.55)	-.48
Gratitude				
	High	23.50 (1.03)	19.21 (1.44)	4.29
	Low	9.27 (.89)	8.97 (1.25)	.30

- Although extreme scores seem to play a role, positive change was only present in the intervention conditions [$F(2,138)=2.85$, $MSE=28.817$, $p=.06$, $\eta_p^2=.04$]. Effects on other scales were as expected.
- A possible limitation is the use of the internet to complete the interventions. Participants may have been influenced by external factors while attempting to complete the daily activities.
- Another limitation of the study is the characteristics of the sample. The sample was limited in age range and they came from a restricted participant pool. Therefore, the results may not generalize to all populations. Future studies should focus on a more representative sample.