**Supplementary Material**

**How Negative Mood Hinders Belief Updating in Depression - Results from two Experimental Studies**

# Additional Results Study 1

**Baseline Differences** The three groups did not differ in age, *F*(2, 97) = 0.725; *p* = .487; *ɳ²p* = .015; 95% CI [0, .077], and depressive symptoms, *F*(2, 97) = 0.214; *p* = .808; *ɳ²p* = .004; 95% CI [0, .043]. The distribution of male and female participants was not significantly different across the three groups, *χ*² = .770; *p* = .681, nor was the distribution of education levels, *χ*² = 1.523; *p* = .467, employment status, *χ*² = 3.140; *p* = .535, or the diagnosis of a depressive episode, *χ*² = .554; *p* = .785. Further, the three groups did not differ in their initial task-specific expectations, *F*(2, 97) = 0.959, *p* = .387; *ɳ²p* = .019; 95% CI [0, .088], initial generalised expectations, *F*(2, 97) = 0.483; *p* = .619; *ɳ²p* = .010; 95% CI [0, .064], initial positive affect, *F*(2, 97) = 0.154; *p* = .857; *ɳ²p* = .003; 95% CI [0, .035], and initial negative affect, *F*(2, 97) = 0.148; *p* = .862; *ɳ²p* = .003; 95% CI [0, .033]. Importantly, the three groups did not differ in their actual TEMINT performance either, *F*(2, 98) = 0.823; *p* = .442; *ɳ²p* = .017; 95% CI [0, .082].

**Manipulation Check  
*Positive Affect***A Time by Condition two-factorial ANOVA with positive affect as the dependent variable indicated no significant main effect of Time, *F*(1, 97) = 1.175; *p* = .281; *ɳ²p* = .012; 95% CI [0, .086]. The main effect of Condition was significant, *F*(2, 97) = 4.517; *p* = .013; *ɳ²p* = .084; 95% CI [.004, .192]. Post-hoc comparisons showed that, overall, positive affect was lower in the negative mood induction condition than in the positive mood induction condition, *t*(65) = 3.099; *p* = .003; *d* = 0.758; 95% CI [0.258, 1.251] and the control condition, *t*(65) = 2.125; *p* = .037; *d* = 0.520; 95% CI [0.030, 1.005]. The difference between the positive mood induction group and the control group was not significant, *t*(66) = -0.782; *p* = .437; *d* = 0.190; 95% CI [-0.288, 0.665]. The Time by Condition interaction was significant, *F*(2, 97) = 29.728; *p* < .001; *ɳ²p* = .378; 95% CI [.224, .494]. Pairwise comparisons indicated that positive affect increased in the positive mood condition, whereas it decreased in the negative mood condition, *t*(65) = 6.781; *p* < .001; *d* = 1.647; 95% CI [1.096, 2.209], reflecting a very large difference between the two groups. The differences between the positive mood condition and control condition, *t*(66) = -2.222; *p* = .030; *d* = 0.539; 95% CI [0.053, 1.021], as well as the difference between the negative mood condition and the control condition, *t*(65) = 5.894; *p* < .001; *d* = 1.437; 95% CI [0.897, 1.975] were significant, too.

***Negative Affect***A Time by Condition two-factorial ANOVA with negative affect as the dependent variable indicated a significant main effect of Time, *F*(1, 97) = 41.311; *p* < .001; *ɳ²p* = .297; 95% CI [.155, .426], with overall higher values for negative affect before the mood induction (*M* = 39.59; *SD* = 17.48) than after (*M* = 33.24; *SD* = 17.11). The main effect of Condition was not significant, *F*(2, 97) = 1.074; *p* = .346; *ɳ²p* = .021; 95% CI [0, .093]. The Time by Condition interaction was significant, *F*(2, 97) = 8.557; *p* < .001; *ɳ²p* = .149; 95% CI [.035, .270]. Post-hoc analyses revealed that in comparison to the negative mood induction, the positive mood induction group, *t*(65) = -3.761; *p* < .001; *d* = 0.918; 95% CI [0.412, 1.420], and the control group showed a larger decrease in negative affect, *t*(65) = -3.252; *p* = .002; *d* = 0.794; 95% CI [0.294, 1.290]. The difference between the positive mood induction group and the control group was not significant, *t*(66) = 0.498; *p* = .620; *d* = 0.121; 95% CI [-0.356, 0.596].

**Influence of Depressive Symptoms and State Mood on Task-Specific Expectations**A linear regression analysis indicated that state negative affect (*β* = .227; *p* = .045) had significant effects on the adjustment of task-specific expectations. State positive affect (*β* = .074; *p* = .484) and depressive symptoms (*β* = -.047; *p* = .660), by contrast, did not have significant effects. Taken together, the three predictors explained 4.1% of the variance in differences in revising task-specific performance expectations (*p* = .248).

**Analysis of the Diagnostic Status**As with generalised expectations, we examined whether the presence of a diagnosed depressive episode moderates the effects of the mood induction on the adjustment of task-specific expectations. In this moderation analysis, we found that neither the group factor (*t* = .574; *p* = .567; 95% CI [-.739; 1.341]), nor the diagnosis of depressive episode (*t* = .687; *p* = .494; 95% CI [-2.255; 4.641]), nor the product term condition by diagnosis (*t* = -.744; *p* = .459; 95% CI [-2.134, 1.007]) had significant effects. That is, there was no significant moderation.

**Examining gender differences**Repeating the Time by Condition ANOVA with gender as an additional between-subject factor revealed a non-significant trend of the main effect of gender on expectation updating, *F*(1, 95) = 3.007; *p* = .086; *ɳ²p* = .031, pointing to somewhat lower expectations for male participants than for female participants. Moreover, there was a non-significant trend of the Time by Condition by Gender interaction, *F*(2, 95) = 2.508; *p* = .087; *ɳ²p* = .050, suggesting that there was a somewhat reduced upate in male participants in the positive mood condition (from *M* = 10.66, *SD* = 3.05 to *M* = 9.33, *SD* = 5.03) compared to female participants (from *M* = 7.42, *SD* = 2.41 to *M* = 9.00, *SD* = 2.80).

# Additional Results Study 2

**Baseline Differences**The positive mood induction condition did not differ from the negative mood induction condition concerning age (*F*(1, 79) = 2.314; *p* = .132; *ɳ*²p= .028; 95% CI [0, .131]), depressive symptoms (*F*(1, 79) = 0.525; *p* = .471; *ɳ*²p= .007; 95% CI [0, .081]), initial task-specific expectations (*F*(1, 79) = 0.217; *p* = .643; *ɳ*²p= .003; 95% CI [0, .066]), initial generalised expectations (*F*(1, 79) = 2.592; *p* = .111; *ɳ*²p= .032; 95% CI [0, .137]), and initial positive (*F*(1, 79) = 0.001; *p* = .970; *ɳ*²p= .001; 95% CI [0, .001]) or negative affect (*F*(1, 79) = 3.78; *p* = .055; *ɳ*²p= .046; 95% CI [0, .160]). Importantly, the two conditions did not differ in their actual TEMINT performance (*F*(1, 79) = 0.016; *p* = .898; *ɳ*²p= .001; 95% CI [0, .033]). As with Study 1, the distribution of male and female participants (*χ*² = 0.102; *p* = .800) as well as the distribution of education levels (*χ*² = 0.874; *p* = .981) and employment status (*χ*² = 8.075; *p* = .448) was not significantly different across the experimental groups. Both groups did differ, however, in the distribution of the specific affective diagnoses (*χ*² = 8.530; *p* = .022). Specifically, in the positive mood induction group, there were more people diagnosed with a recurrent depressive disorder than with an episodic depressive disorder (28:10), whereas the opposite pattern was found for the negative mood induction group (16:20). The two conditions did not differ in the distribution of the comorbid diagnoses, *χ*² = 9.260; *p* = .321.

**Manipulation Check**   
***Positive Affect***We conducted a Time by Valence by Induction Method three-factorial ANOVA with positive affect as the dependent variable, which revealed a significant main effect of Time (*F*(1, 77) = 4.907; *p* = .030; *ɳ*²p= .060; 95% CI [.001, .183]), with overall higher values for positive affect before the mood induction (*M* = 48.85; *SD* = 19.528) than after (*M* = 45.57; *SD* = 22.21). Also, there was a significant Time by Valence interaction (*F*(1, 77) = 23.549; *p* = .001; *ɳ*²p= .234; 95% CI [.087, .379]), and pairwise comparisons indicated that positive affect increased following the positive mood induction, whereas it decreased in the negative mood induction condition (*t*(79) = 4.801, *p* = .001, *d* = 1.069; 95% CI [0.599, 1.533]) (see Figure S3a in the supplement). The main effects of Valence (*F*(1, 77) = 3.38; *p* = .070; *ɳ*²p= .042, 95% CI [0, .156]) and Induction Method (*F*(1, 77) = 0.084; *p* = .773; *ɳ*²p= .001, 95% CI [0, .044]) were not significant, nor was the Time by Induction Method interaction (*F*(1, 77) = 0.332; *p* = .566; *ɳ*²p= .004; 95% CI [0, .074]) and the three-way interaction Time by Valence by Induction Method (*F*(1, 77) = 1.172; *p* = .282; *ɳ*²p= .015; 95% CI [0, .105]).

***Negative Affect***The Time by Valence by Induction Method ANOVA with negative affect as the dependent variable indicated a non-significant main effect of Time, *F*(1, 77) = 0.978; *p* = .326; *ɳ*²p= .013; 95% CI [0, .099]. The main effect of Valence was significant, *F*(1, 77) = 10.124, *p* = .002; *ɳ*²p= .116; 95% CI [.016, .255], pointing to overall higher values in negative affect across time points in the negative mood induction group (*M* = 54.71; *SD* =21.57) than in the positive mood induction group (*M* = 41.26; *SD* = 18.95). In addition, there was a significant Time by Valence interaction, *F*(1, 77) = 23.549; *p* = .001; *ɳ*²p= .234; 95% CI [.087, .379], indicating that negative affect increased in the negative mood induction condition, whereas it decreased following positive mood induction, *t*(79) = -9.793; *p* = .003; *d* = -2.180; 95% CI [-1.623, -2.729], as depicted in Figure S3b in the supplement. The main effect of the Induction Method (*F*(1, 77) = 0.297; *p* = .587; *ɳ*²p= .004; 95% CI [0, .073]) was not significant, nor was the Time by Induction Method interaction (*F*(1, 77) = 0.179; *p* = .674; *ɳ*²p= .002; 95% CI [0, .065]), or the three-way interaction (*F*(1, 77) = 1.014; *p* = .317; *ɳ*²p= .013; 95% CI [0, .100]).

**ANCOVA to Control for Differences in the Distribution of Diagnoses**In addition to the main analysis (time by valence by induction method ANOVA), we also ran an additional analysis of covariance with the specific affective diagnosis of the participants as the covariate, in order to control for the – coincidental – non-equal distribution of diagnoses across conditions. Doing so revealed no significant unique effect of the specific diagnosis on the update of generalised expectations (*F*(1, 76) = 0.023; *p* = .879; *ɳ²p* < .001; 95% CI [0, .013]), nor did it change the significance of any of the main and interaction effects presented in the main document. **Influence of Depressive Symptoms and State Mood on Task-Specific Expectations**   
A linear regression analysis indicated that state negative affect (*β* = .274; *p* = .044) had significant effects on the adjustment of task-specific expectations. State positive affect (*β* = .077; *p* = .540) and depressive symptoms (*β* = -.112; *p* = .389), by contrast, did not have significant effects. Taken together, the three predictors explained 4.8% of the variance in differences in revising task-specific performance expectations (*p* = .250).

**Examining gender differences**Repeating the Time by Condition ANOVA with gender as an additional between-subject indicated neither a main effect of gender on expectation updating, *F*(1, 73) = 1.249; *p* = .267; *ɳ²p* = .017, nor a significant Time by Condition by Gender interaction, *F*(3, 73) = 0.974; *p* = .410; *ɳ²p* = .038.