

Surprise study pilot 13

Marjan Biria

2024-01-16

Study description

This study has the same version as pilots 10 and 11, however, we have now added bigger negative PE's once per judge. More specifically, we have replaced one negative PE per judge by subtracting 10 from the smallest negative PE we had before for each judge. So this is how the feedback was calculated before to have 2 positive, 2 negative, and 2 neutral PE's per judge (8 judges x 6 trials= 48 trials).

The Gorilla experiment is the following: <https://app.gorilla.sc/admin/project/119459> The task is the following: <https://app.gorilla.sc/admin/task/736716/editor>

Goal: we would like to see whether having a bigger range for PE's would influence the relationship between subj-PE and anxiety.

I will write this here as well for us to have, if we forget again:

Positive PE: we selected numbers from a normal distribution ranging from 12-20, added this number to the mean of the histogram.

Negative PE: we selected numbers from a normal distribution ranging from 12-20, subtracted this number to the mean of the histogram.

Big positive PE: Per judge, we added 10 to the biggest positive feedback we had generated before.

Big negative PE: Per judge, we subtracted 10 to the smallest negative feedback we had generated before.

Neutral PE: we added -1, 0, 1 to the mean of the histograms

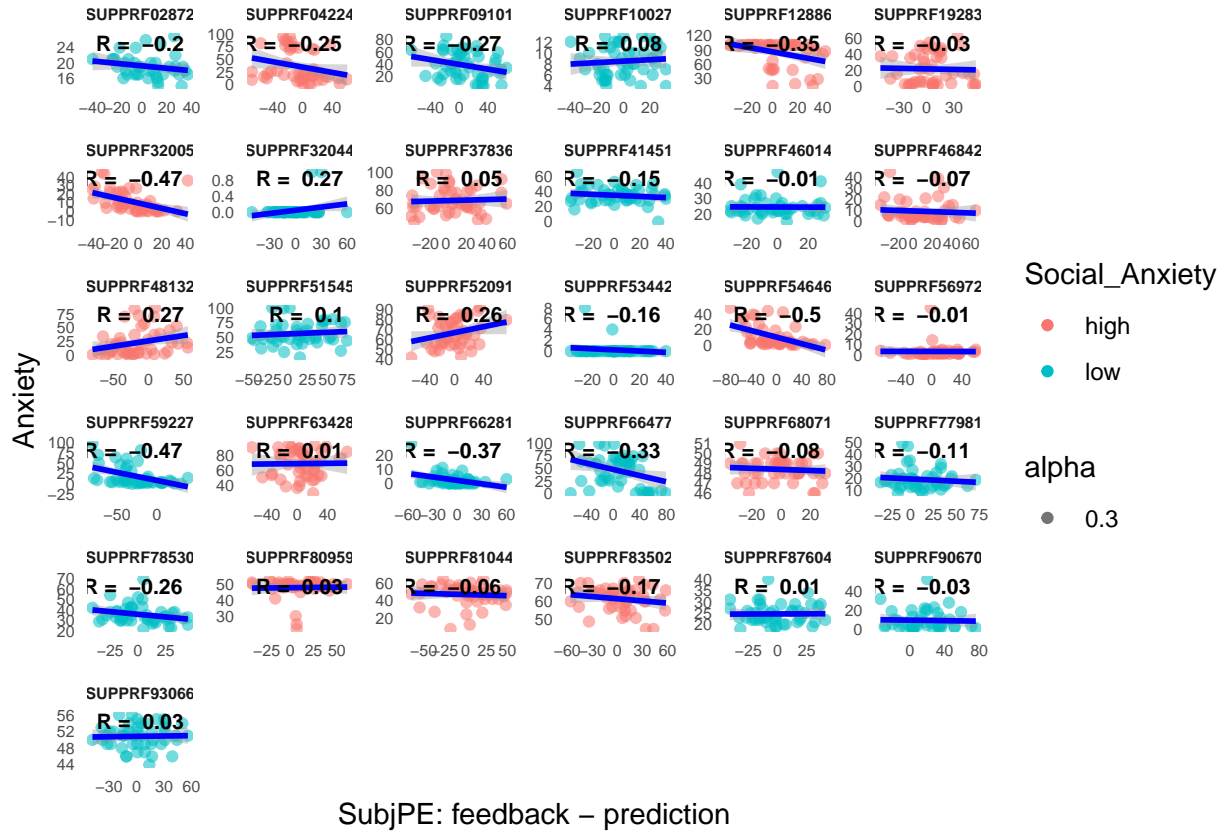
Notes: In this pilot, some people did the questionnaires but had technical difficulties so could not do the task, so we must remember to merge by ID's in the task rather than mini-SPIN/CES-D. Also, we start counting mood and anxiety from instructions and also BL, so we need to create a column naming the within experiment mood and anxiety "trials", the very first one "instructions", and the second one "BL", in the first one they are explained what they need to do, and in BL they are instructed to rate their anxiety and mood. It would be good to compare "instruction", "BL" and also the first ratings in the task using ICC, and also look at the relationship between questionnaires and each of these ratings.

```
## [1] "It seems everyone has done all the 48 trials, except subject SUPPRF02872 who has done 40 trials"
```

```
## # A tibble: 31 x 2
##   Random_ID Trial_Count
##   <chr>         <int>
## 1 SUPPRF02872      40
## 2 SUPPRF04224      48
## 3 SUPPRF09101      48
## 4 SUPPRF10027      48
## 5 SUPPRF12886      48
## 6 SUPPRF19283      48
## 7 SUPPRF32005      48
## 8 SUPPRF32044      48
## 9 SUPPRF37836      48
## 10 SUPPRF41451      48
## # i 21 more rows
```

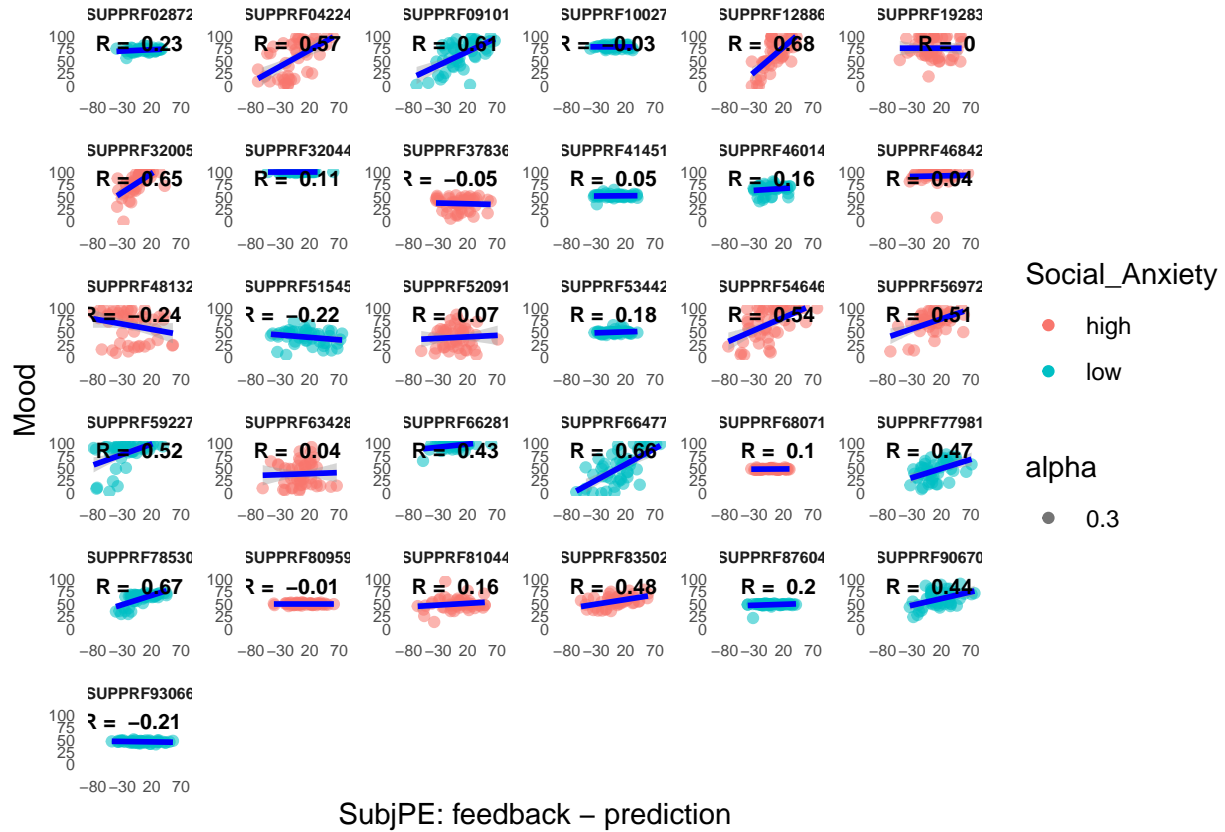
Relationship between Anxiety and SubjPE

[1] "average correlation between anxiety and SubjPE: -0.104554949994515"



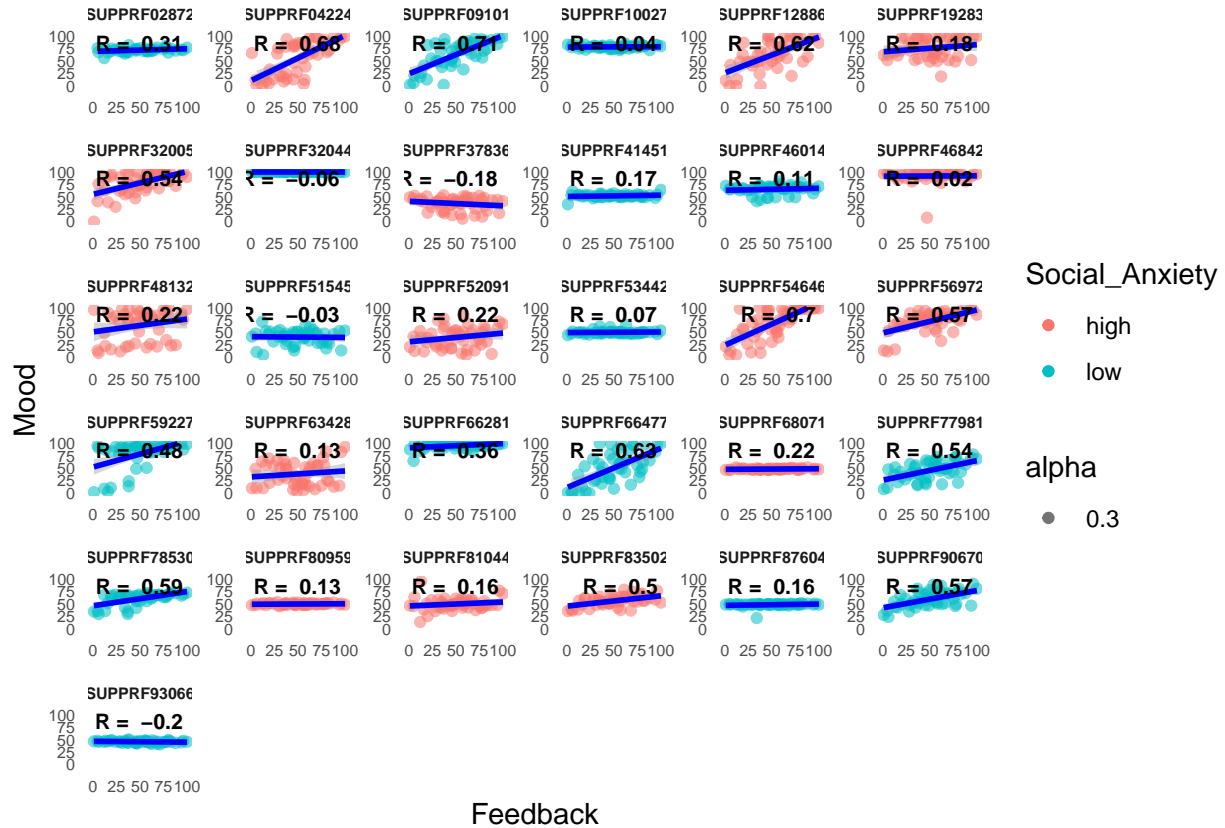
Relationship between Mood and SubjPE

[1] "average correlation between mood and SubjPE: 0.251218558358129"

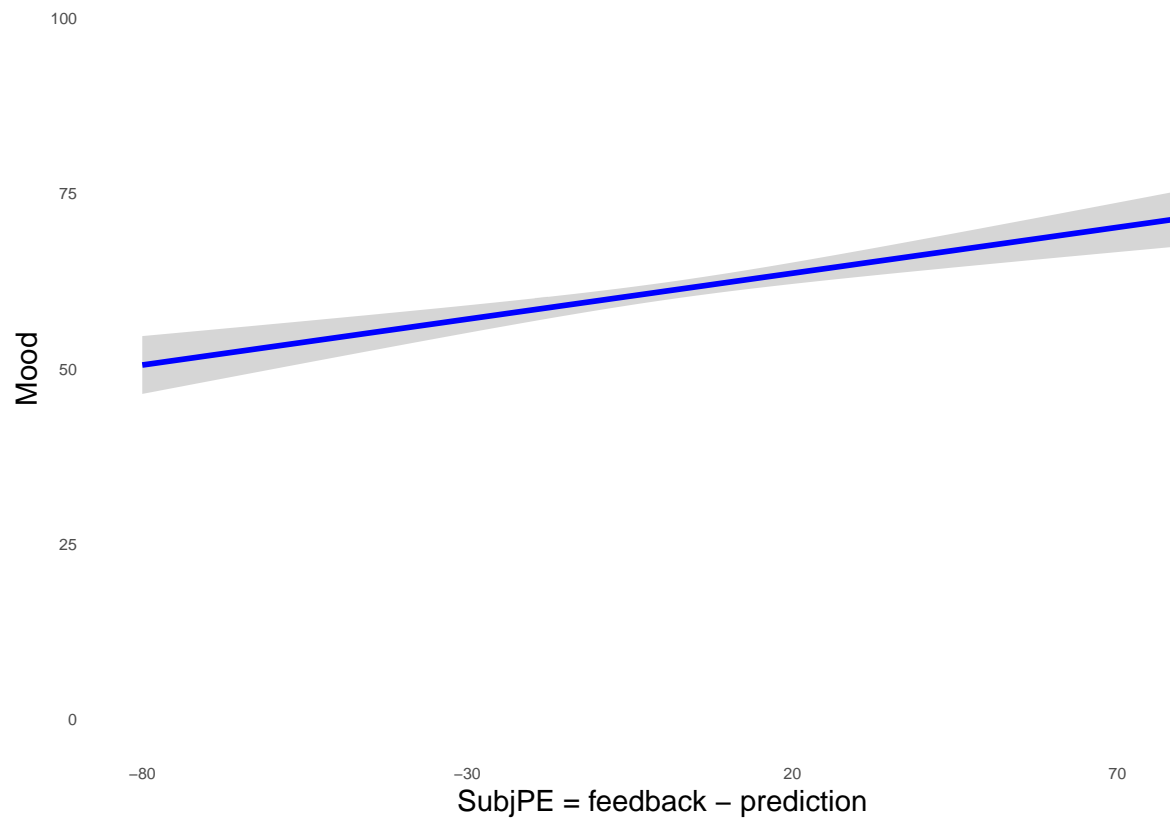


Relationship between Mood and feedback

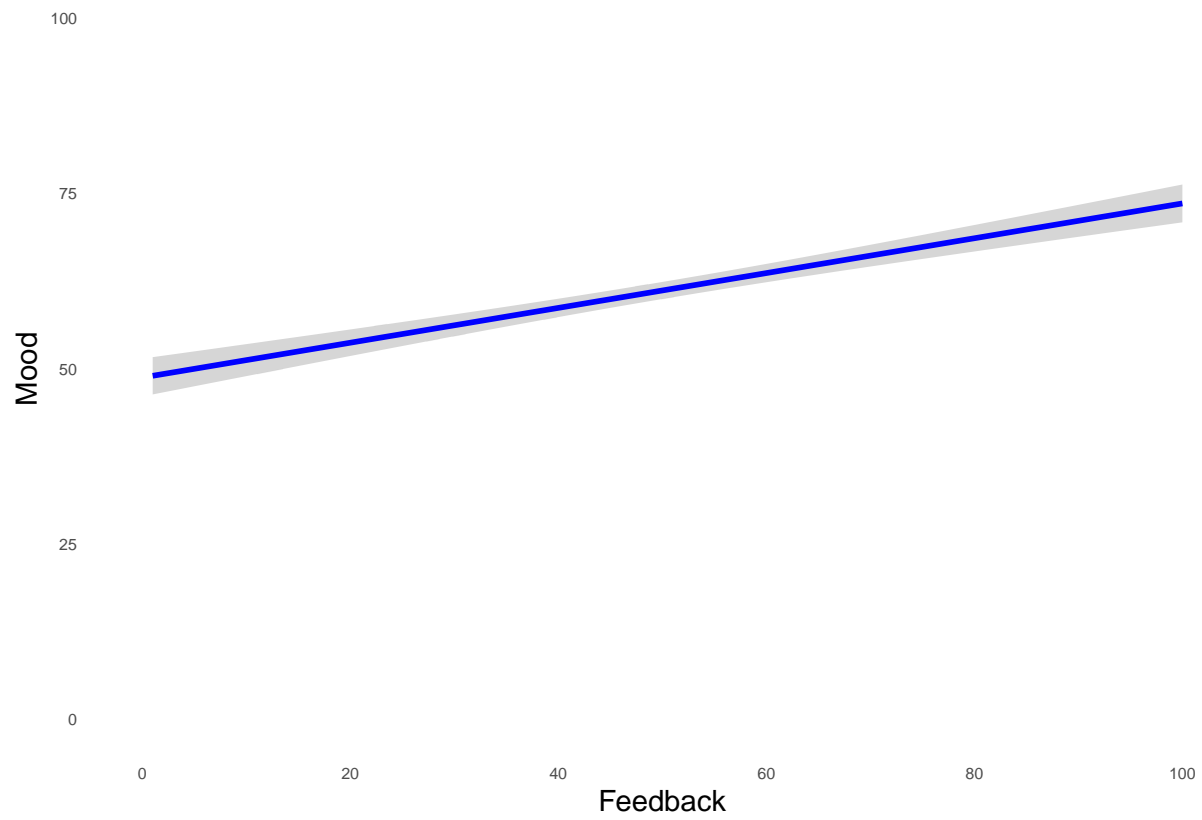
[1] "average correlation between mood and feedback: 0.295775403389545"



The group plot for the relationship between Mood and SubjPE

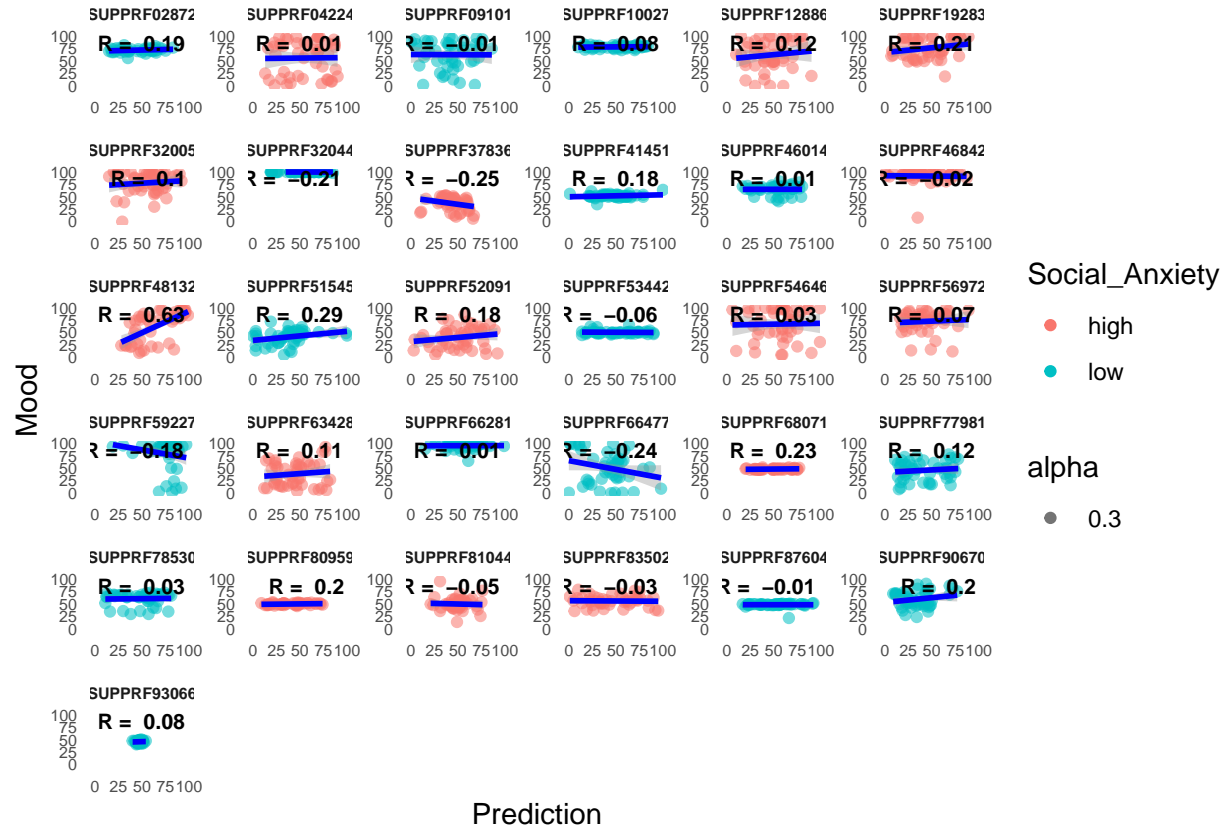


The group plot for the relationship between Mood and feedback



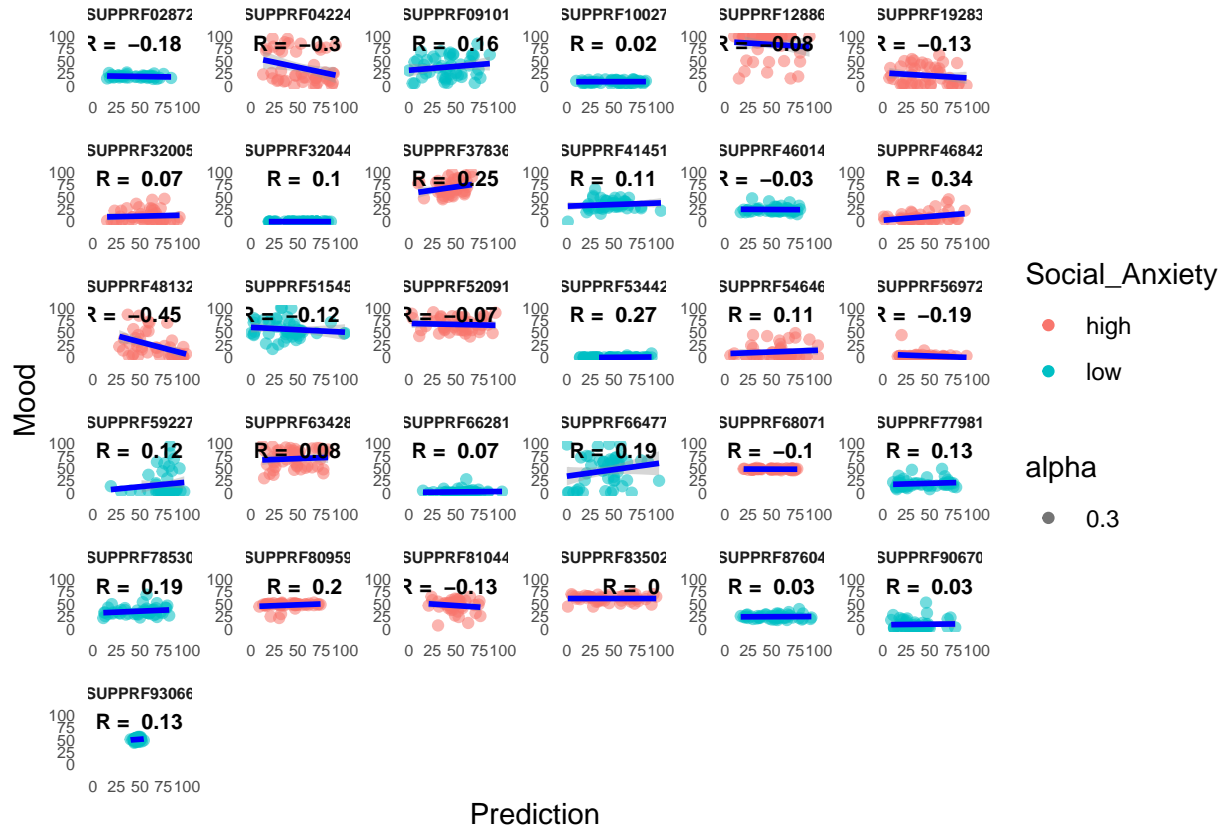
Relationship between Mood and prediction

[1] "average correlation between mood and prediction: 0.0648355378279982"



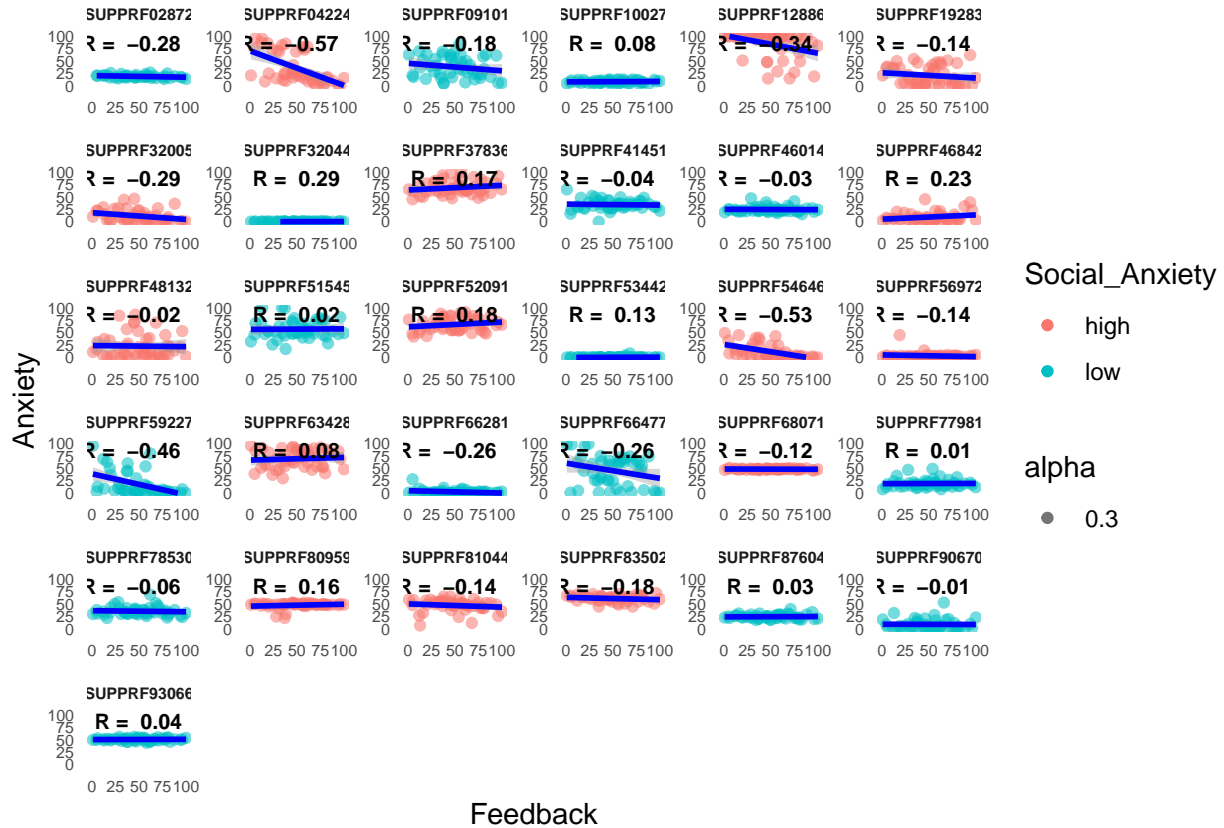
Relationship between Anxiety and prediction

[1] "average correlation between anxiety and prediction: 0.0265268018396027"



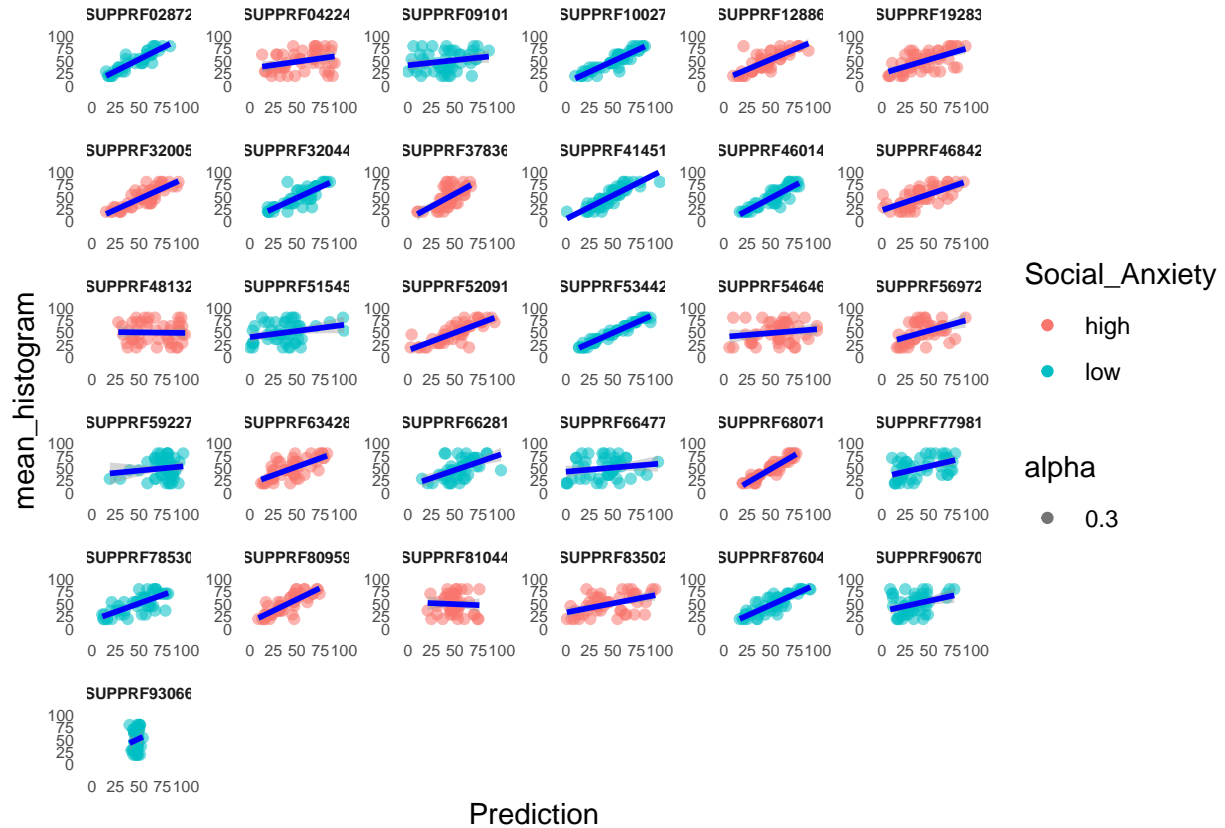
Relationship between Anxiety and feedback

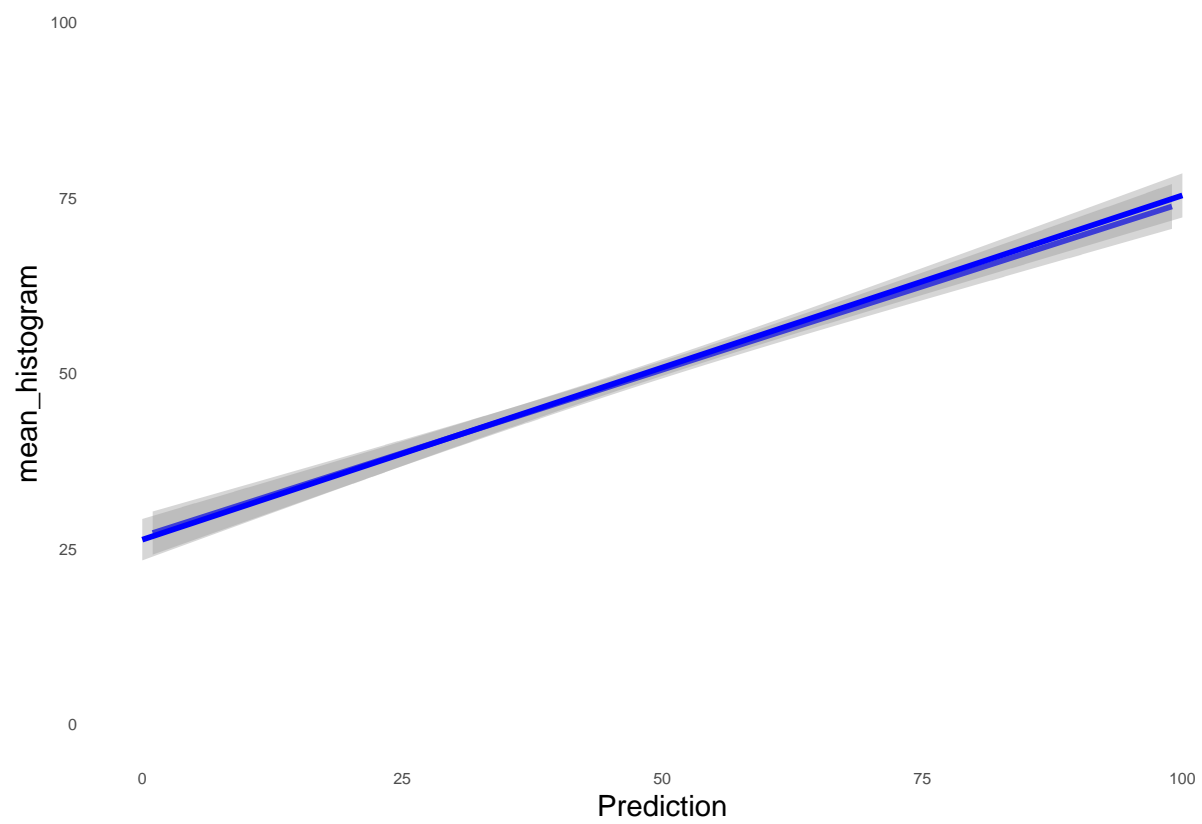
[1] "average correlation between anxiety and feedback: -0.0852575447136245"



Relationship between mean histogram and prediction

[1] "average correlation between histogram mean and prediction: 0.565772034006471"

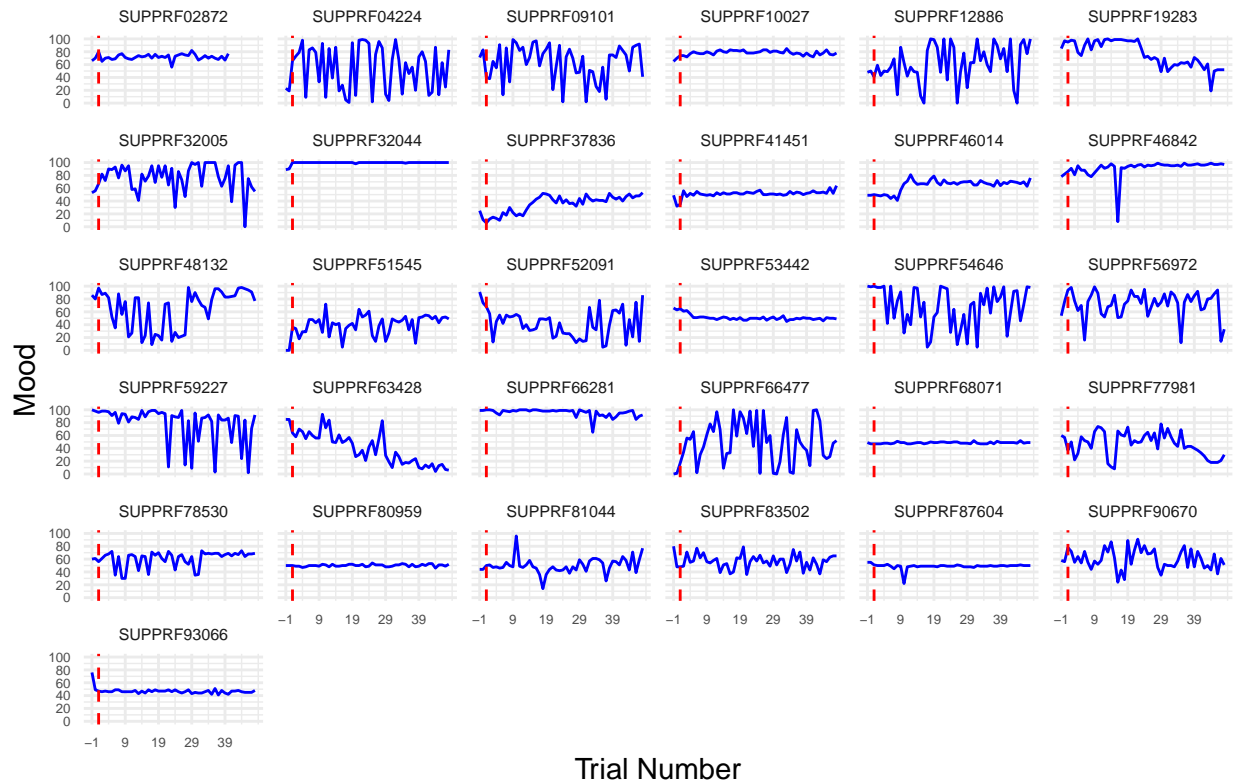




Mood over time

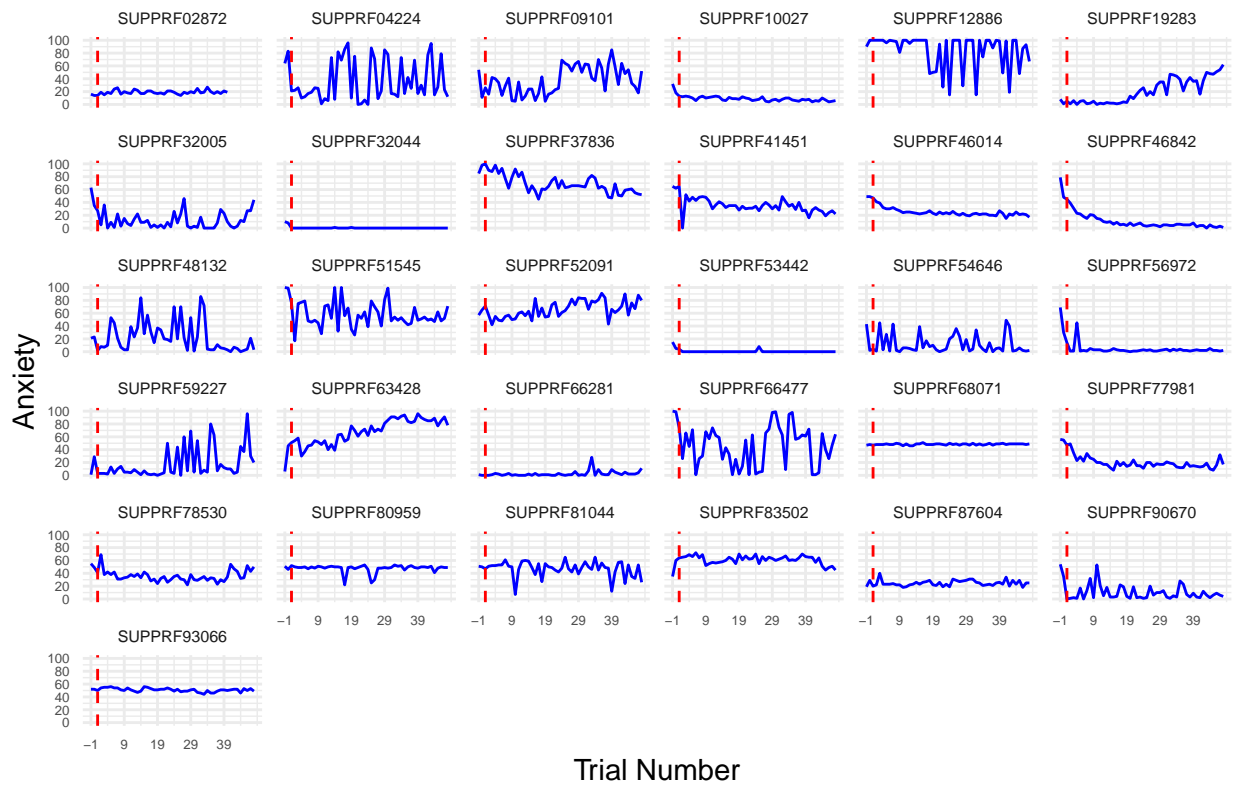
Our trials were numbered from 1-50, but the mood and anxiety in trial 1 were asked during the instructions as the task was explained and the one in trial 2, were asked during practice run and before performing the task. It would be interesting to see how these change, especially relevant if at the start they assumed talking to real people but then they change abruptly once they learn/believe they are not talking to real people.

Mood across time

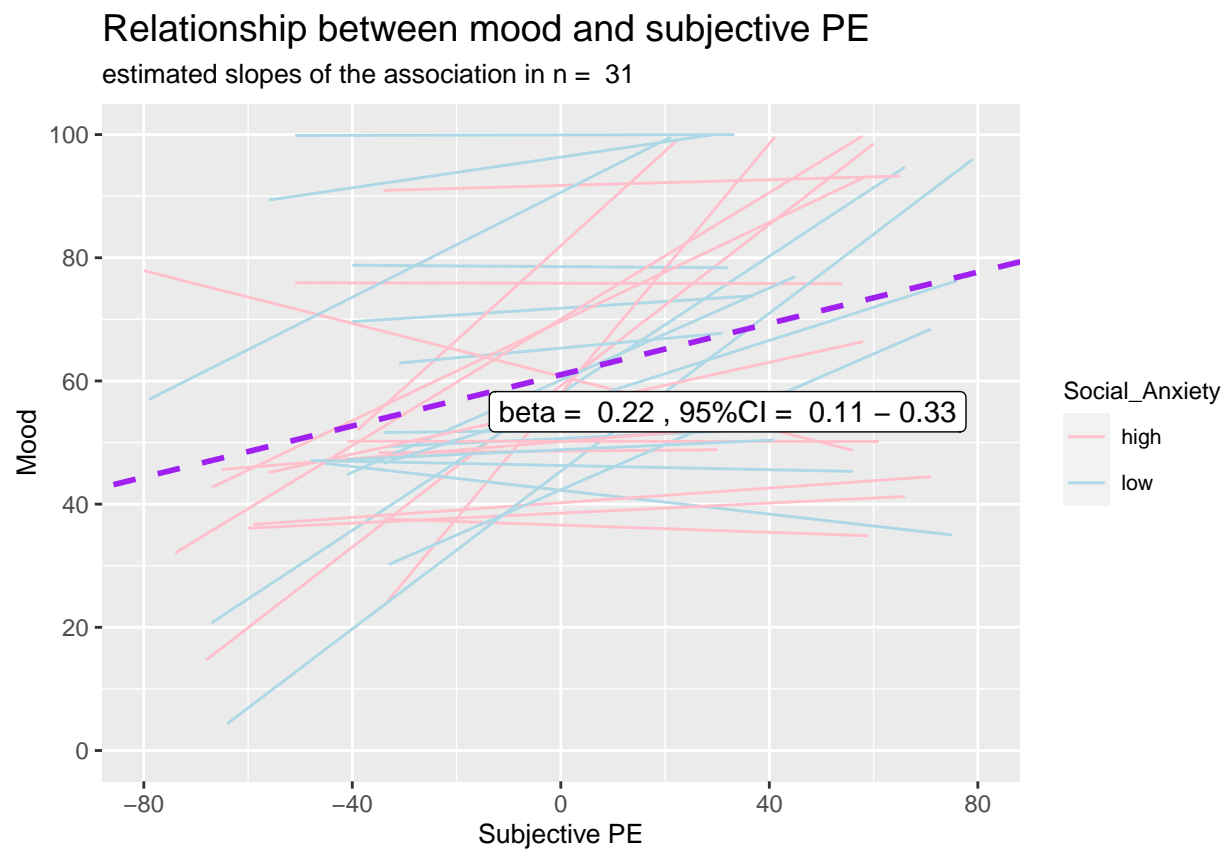


Anxiety over time

Anxiety across time



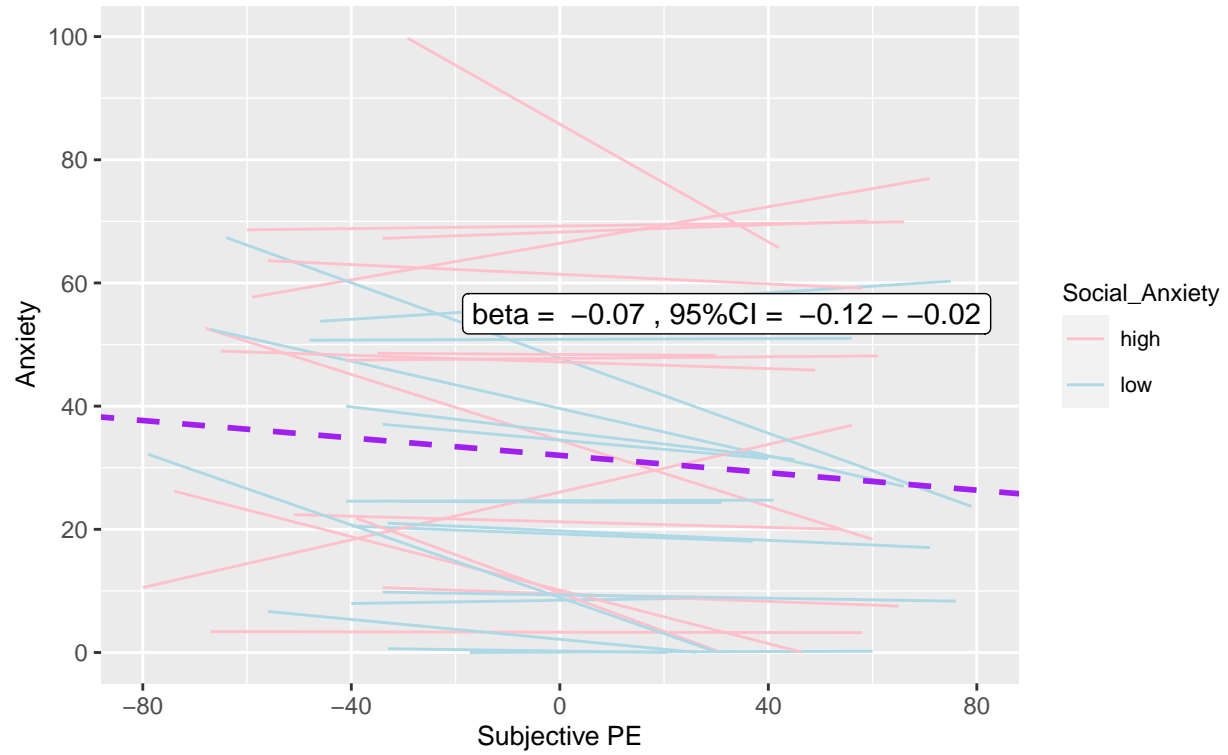
Individual plots with LME for Mood with SubjPE



Individual plots with LME for Anxiety with SubjPE

Relationship between Anxiety and subjective PE

estimated slopes of the association in n = 31



ICC for anxiety

we will now look at the ICC outcome for anxiety The ICC for anxiety is 0.71, which is moderate according to guidelines by Koo and Li (2016): below 0.50: poor between 0.50 and 0.75: moderate between 0.75 and 0.90: good above 0.90: excellent

```
## [1] "lmer for anxiety with just the intercept"
```

```
## [1] 0.7115844
```

```
##           2.5 %   97.5 %  
## .sig01      18.16223 30.11433  
## .sigma      14.30760 15.38846  
## (Intercept) 23.69830 40.41695
```

ICC for mood

The ICC for mood is 0.44, which is lower than anxiety and is actually within the poor category, according to guidelines by Koo and Li (2016): below 0.50: poor between 0.50 and 0.75: moderate between 0.75 and 0.90: good above 0.90: excellent

```
## [1] "lmer for mood with just the intercept"
```

```
## [1] 0.4428035
```

```
##           2.5 %   97.5 %  
## .sig01      12.79388 21.41094  
## .sigma      17.86058 19.20984  
## (Intercept) 55.25785 67.20719
```