

# DEPRESSIVE SYMPTOMS AND REACHABILITY PERCEPTION: THE ROLE OF EXPECTATIONS

## INTRODUCTION

- When we need to reach an object, we have an expectation regarding its reachability. Are these expectations consistent with our actual motor abilities?
- According to the learned helplessness theory, (Seligman, 1975), in depression, action appears to be ineffective, ungratifying and inhibited.
- This study investigates the link between depressive symptoms, reachability expectations and actual motor performance (Fig. 1).

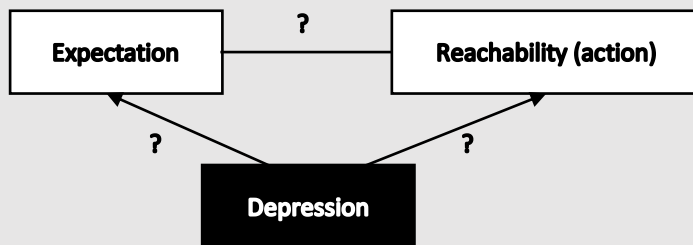


Figure 1. Purpose of the current study.

## METHOD

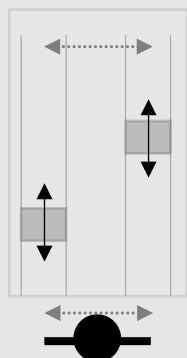
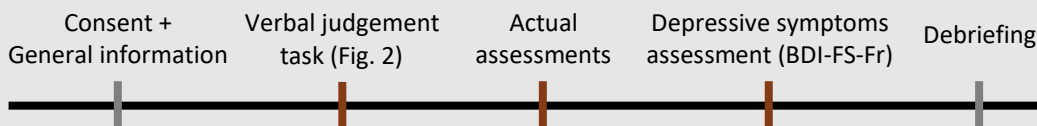


Fig 2. Verbal judgement task. Target moved discretely every 5 cm according to two paths (left and right) and two directions (backward and forward). For each location, participants judged whether they were able to reach the target.

$$\pi_c = \frac{d_c}{L}$$

(where  $\pi_c$  is the critical point,  $d_c$  is the critical distance and  $L$  the arm length)

- Reachability boundary was computed with  $\pi_c$
- Participants were allocated to either healthy or likely-depressive groups according to their Beck Depression Inventory-Fast Screen-France scores (Table 1).
- Frequentist and Bayesian analyses

Table 1. Study Sample

Likely-Depressive (n = 7, including 5 women)	Healthy (n = 11, including 4 women)	Entire sample (n = 18, including 9 women)
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## RESULTS

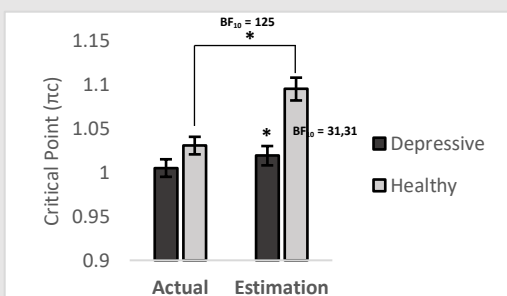


Fig 3. Critical point ( $\pi_c$ ) as a function of assessment modality (actual [i.e., motor], estimation) and participants state (healthy, likely-depressive). Error bars represent standard errors. \* indicates  $p$ -holm < .001.  $BF_{10} > 1$  indicates an evidence for H1

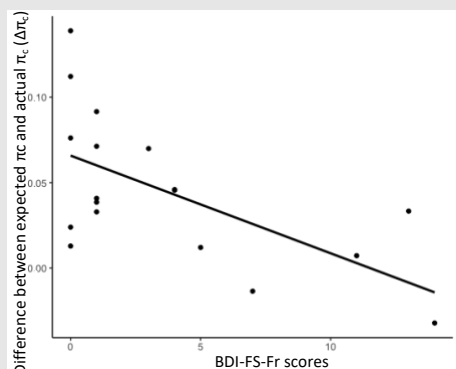


Fig 4. Linear regression between BDI-FS-Fr and difference between estimated  $\pi_c$  and actual  $\pi_c$  ( $\Delta\pi_c$ ). Analysis showed a significant link between both variables ( $b = -.006, t(16) = -3.119, p = .007$ ). No outliers were detected (Cook's distance < .5 for each observation).  $R^2 = .378$ ; *adjusted*  $R^2 = .339$ , meaning that BDI-FS-Fr scores explained 37.8 % of  $\Delta\pi_c$  variation.

## DISCUSSION

- Expectations of reachability can differ from actual capacities.
- Participants with depressive symptoms perceive motor action possibilities that are decreased in comparison with healthy participants.
- When depressive symptoms' level increases, the overestimation decreases.

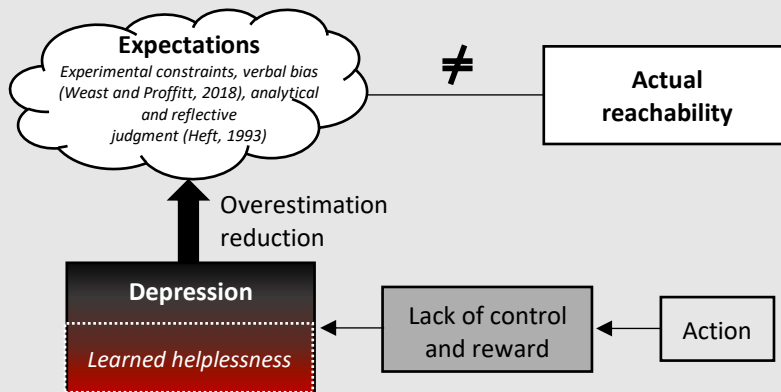


Fig 5. Hypothetical model of links between expectations, actual reachability and depression

## REFERENCES

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