Altering depressive attributions through causal learning: a randomised controlled trial

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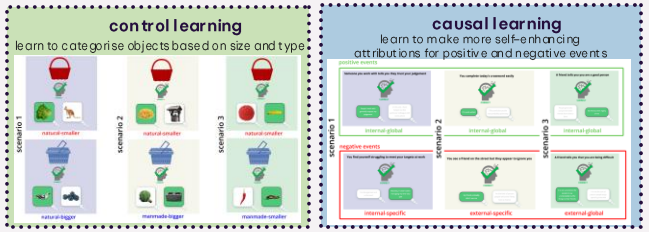
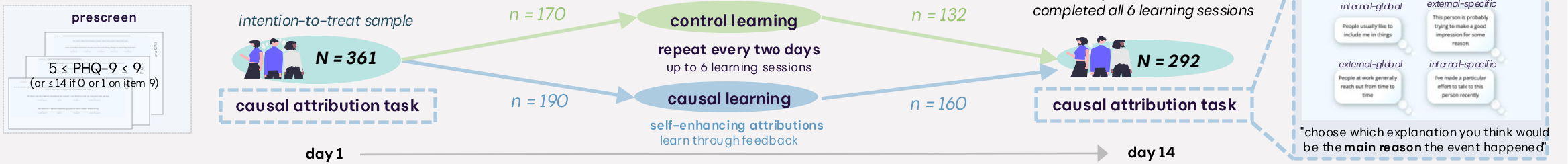
poster + preregistration

BACKGROUND

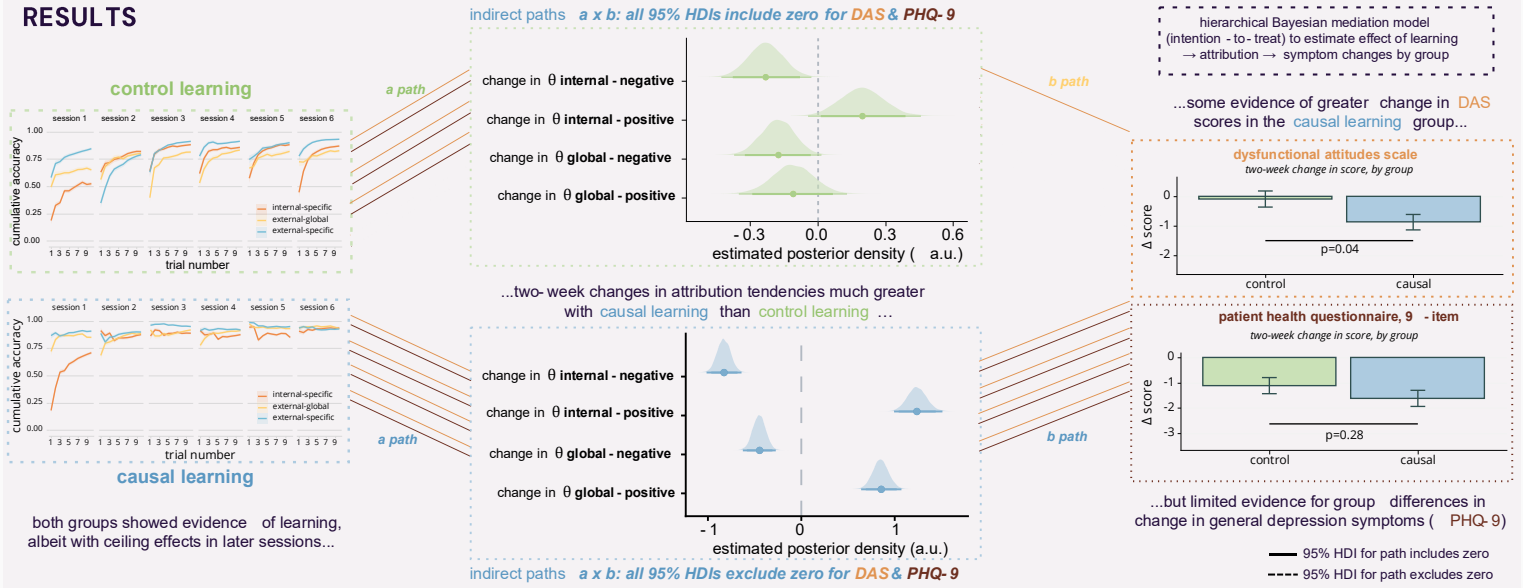
- self-guided, internet-delivered psychological interventions can prevent the onset of depressive episodes *(1)*, but are usually not targeted or personalised
- preclinical work found **causal learning** shifted attribution biases comparably to a brief restructuring intervention in a single session *(2)*, so we asked:
  a. does causal learning alter proximal (task-based) and distal (questionnaire) measures of attribution biases in a symptomatic sample over two weeks,
  b. are changes in symptoms mediated by shifts in attribution biases?



METHODS & STUDY DESIGN



RESULTS



CONCLUSIONS

- causal learning induced large shifts in task-based attributional tendencies, with some evidence of greater change on the DAS, versus control learning
- shifts in attribution bias mediated symptom improvement more strongly in the causal learning group, but extent of change (PHQ-9) did not differ

NEXT STEPS†

†based on preclinical findings (2)

1. does rate of learning in early sessions predict attributional shifts and symptom improvements
2. do those who subjectively benefit have greater understanding of the task space, as inferred from their free text responses during learning?

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2. A. Norbury, Q. Dercon, T. U. Hauser, R. J. Dolan, Q. J. M. Huys, Learning Training as a Cognitive Restructuring Intervention. *Biol Psychiatry Cogn Neurosci Neuroimaging*, S2451-9022(25)00136-3 (2025).