

Discrimination and Depression: The role of implicit Theory of the Mind and Intergroup bias

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Introduction

- Mentally ill persons experience discrimination⁽¹⁾ understanding why may help prevent this
- Intergroup bias is the favouring of an in-group and is related to discrimination⁽²⁾
- Implicit Theory of the Mind (iToM) refers to subconscious use of folk psychology and the knowledge that mental states differ between different people to consider the mental state of oneself and others⁽³⁾
- IToM has been linked to intergroup bias⁽⁴⁾
- This study has further explored this link

Methods

- IToM ability was measured with an eye-tracking true belief/ false belief (TB/FB) paradigm based on Southgate et al 2007⁽⁵⁾
- Two different actors were used, one happy and one depressed
- Either actor wore a red or grey hat at random as a manipulation check
- Eye-tracker measured differences in participant iToM for each actor, this indicated intergroup bias
- After this, participants were given various questionnaires to assess how they relate to each actor, their depressive traits and demographics

References

1. Mai Q, Holman CD, Sanfilippo FM, Emery JD, Preen DB. Mental illness related disparities in diabetes prevalence, quality of care and outcomes: a population-based longitudinal study. *BMC Medicine*. 2011 Nov 1;9(1):1018-22. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3296092/>

2. Avenanti A, Sirigu A, Aglioti SM. Racial Bias Reduces Empathic Sensorimotor Resonance with Other-Race Pain. *Current Biology [Internet]*. 2010 Jun;20(11):1018-22. Available from: <https://www.sciencedirect.com/science/article/pii/S0969596210005154>

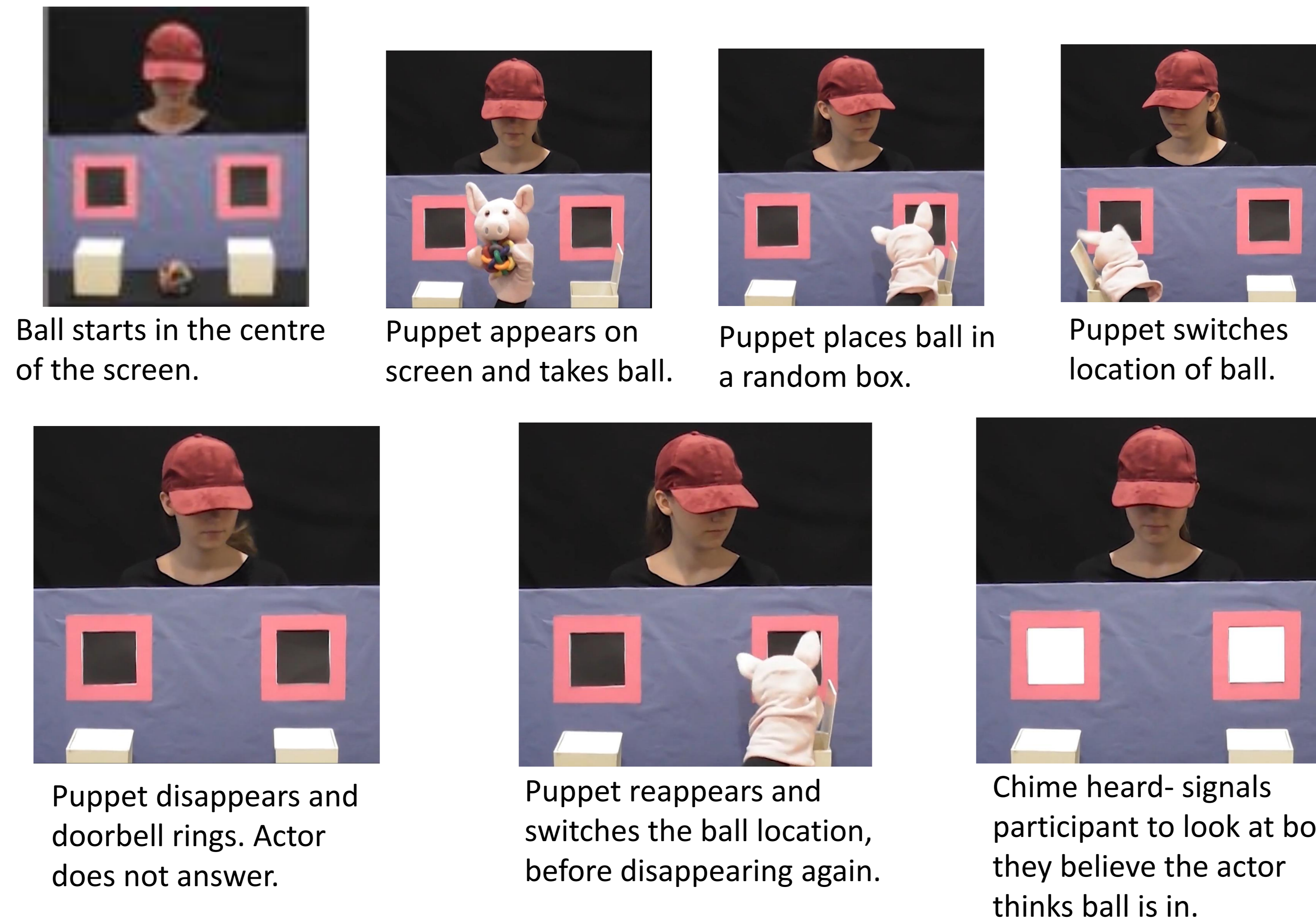
3. Quesque F, Apperly I, Ballarín R, Baron-Cohen S, Becchio C, Bekkering H, et al. Defining key concepts for mental state attribution. *Communications Psychology [Internet]*. 2024 Apr 11;2(1):1-5. Available from: <https://www.nature.com/articles/44271-024-00077-6>

4. Molenberghs P, Louis WR. Insights From fMRI Studies Into Intergroup Bias. *Frontiers in Psychology*. 2018 Oct 1;9.

5. Southgate V, Senju A, Csibra G. Action Anticipation Through Attribution of False Belief by 2-Year-Olds. *Psychological Science*. 2007 Jul;18(7):587-92.

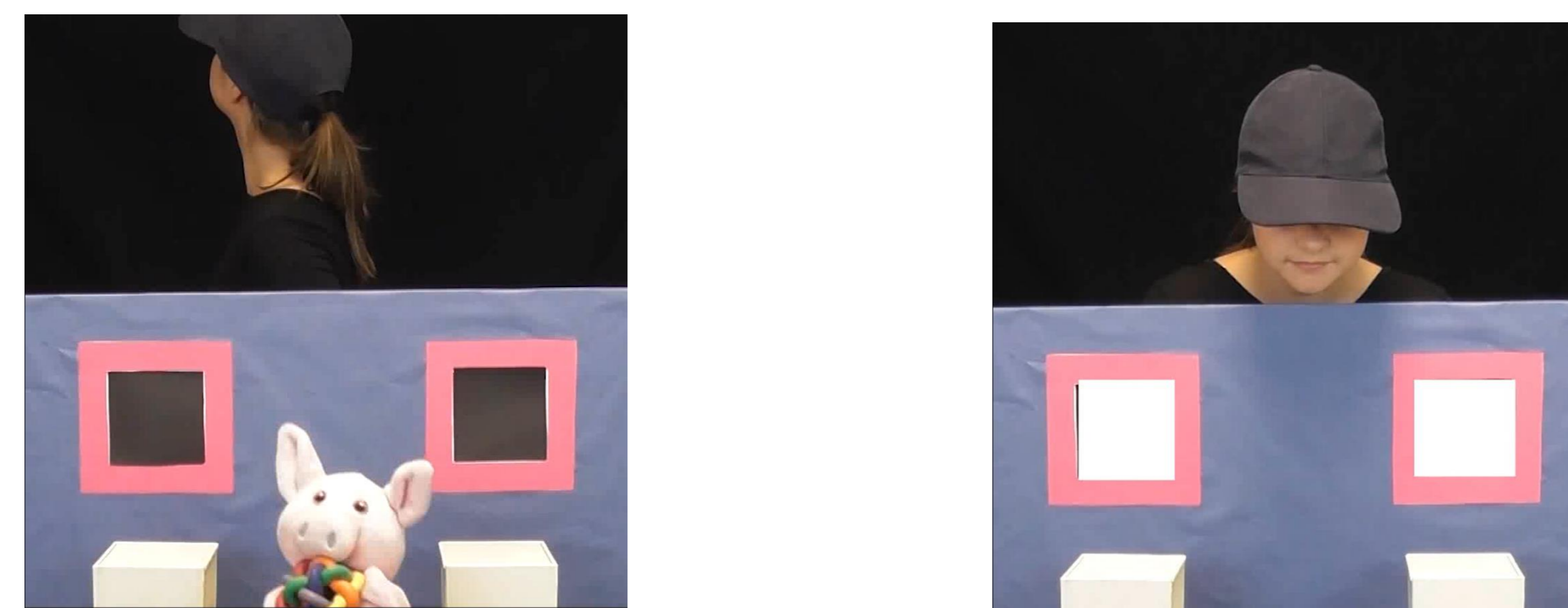
True and False Belief Paradigms

True Belief Paradigm:



False Belief Paradigm:

- Similar to the TB paradigm, only differing when the doorbell rings



Results and Conclusions

- Non-depressed individuals do not have a different iToM due to intergroup bias towards depressed individuals
- Reliability is a more significant factor in influencing the effect of intergroup bias on iToM than whether one is depressed or not

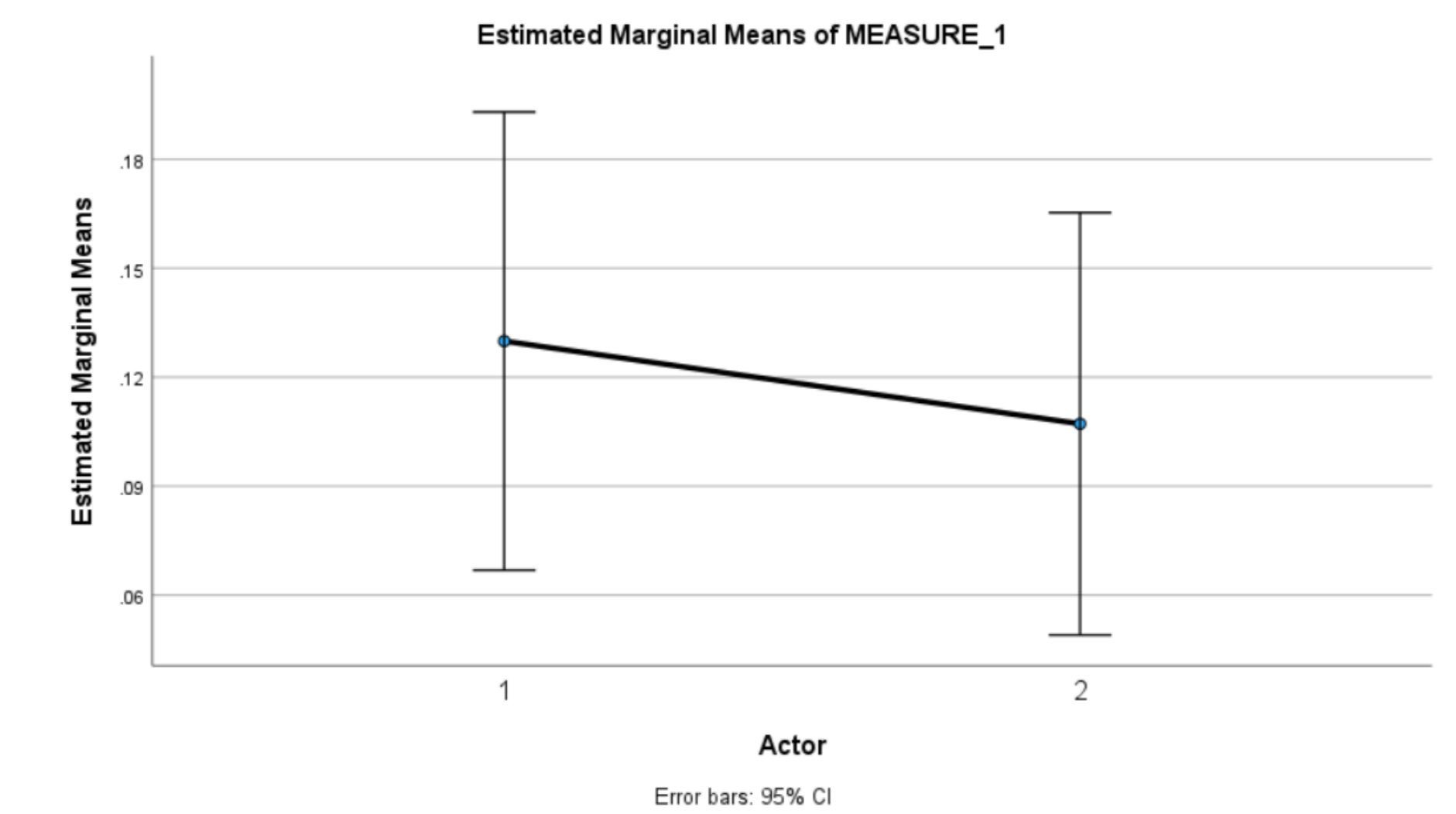


Figure 1. Mean DLS scores from depressed actor (1) and non-depressed actor (2).

- 2 by 2 ANOVA analysis comparing actor (depressed or non-depressed) to belief (true or false belief) revealed no significant difference in DLS score
- No evidence to suggest that intergroup bias towards depressed persons alters iToM

		Correlations					
		DLS Score Sophie FB (seconds)	DLS Score Sophie TB (seconds)	DLS Score Hazel FB (seconds)	DLS Score Hazel TB (seconds)	Hazel Reliability	Sophie Reliability
DLS Score Sophie FB (seconds)	Pearson Correlation	1	.190	-.086	.076	-.248	.025
	Sig. (2-tailed)		.168	.536	.583	.071	.856
	N	54	54	54	54	54	54
DLS Score Sophie TB (seconds)	Pearson Correlation	.190	1	.043	.128	.065	.182
	Sig. (2-tailed)	.168		.755	.358	.642	.188
	N	54	54	54	54	54	54
DLS Score Hazel FB (seconds)	Pearson Correlation	-.086	.043	1	.046	.189	.238
	Sig. (2-tailed)	.536	.755		.741	.171	.083
	N	54	54	54	54	54	54
DLS Score Hazel TB (seconds)	Pearson Correlation	.076	.128	.046	1	.030	-.267
	Sig. (2-tailed)	.583	.358	.741		.830	.051
	N	54	54	54	54	54	54
Hazel Reliability	Pearson Correlation	-.248	.065	.189	.030	1	.122
	Sig. (2-tailed)	.071	.642	.171	.830		.381
	N	54	54	54	54	54	54
Sophie Reliability	Pearson Correlation	.025	.182	.238	-.267	.122	1
	Sig. (2-tailed)	.856	.188	.083	.051	.381	
	N	54	54	54	54	54	54

Figure 2. Correlations of DLS scores for both actors and beliefs with actor reliability.

- Negative correlations found between DLS score of depressed actor and reliability of non-depressed actor
- Negative correlation between FB tasks of depressed actor and non-depressed actor
- Suggests that reliability influences the effect of intergroup bias on iToM