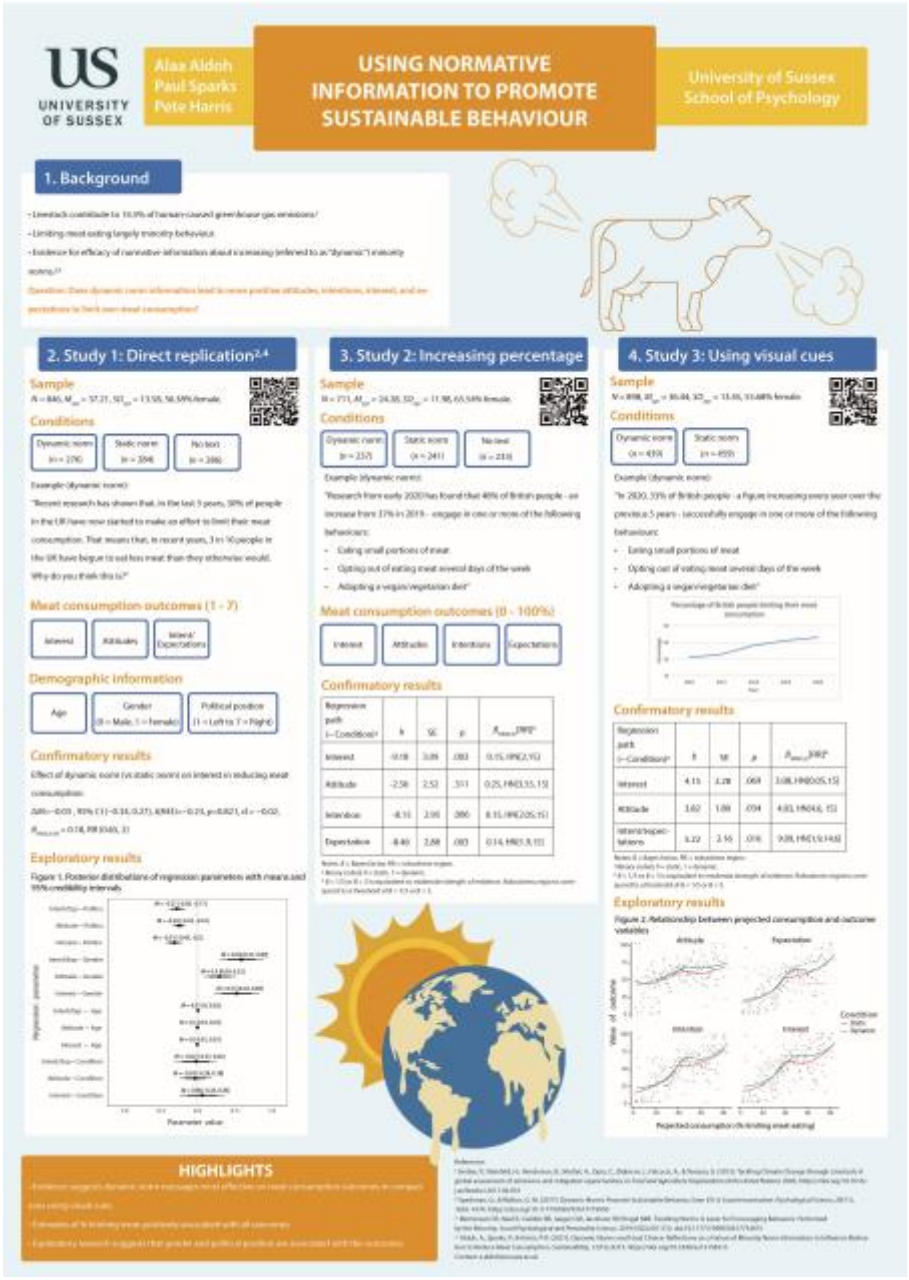
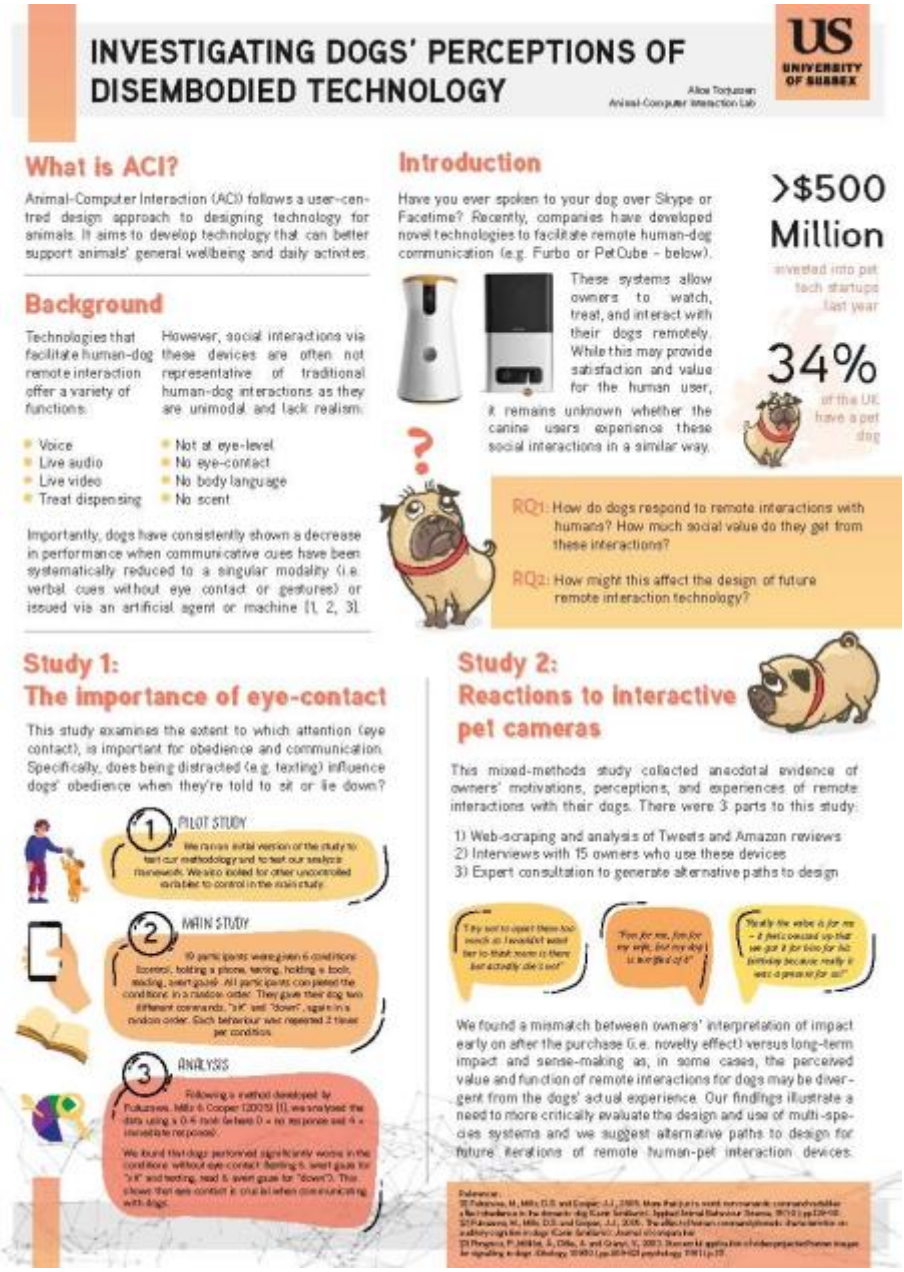
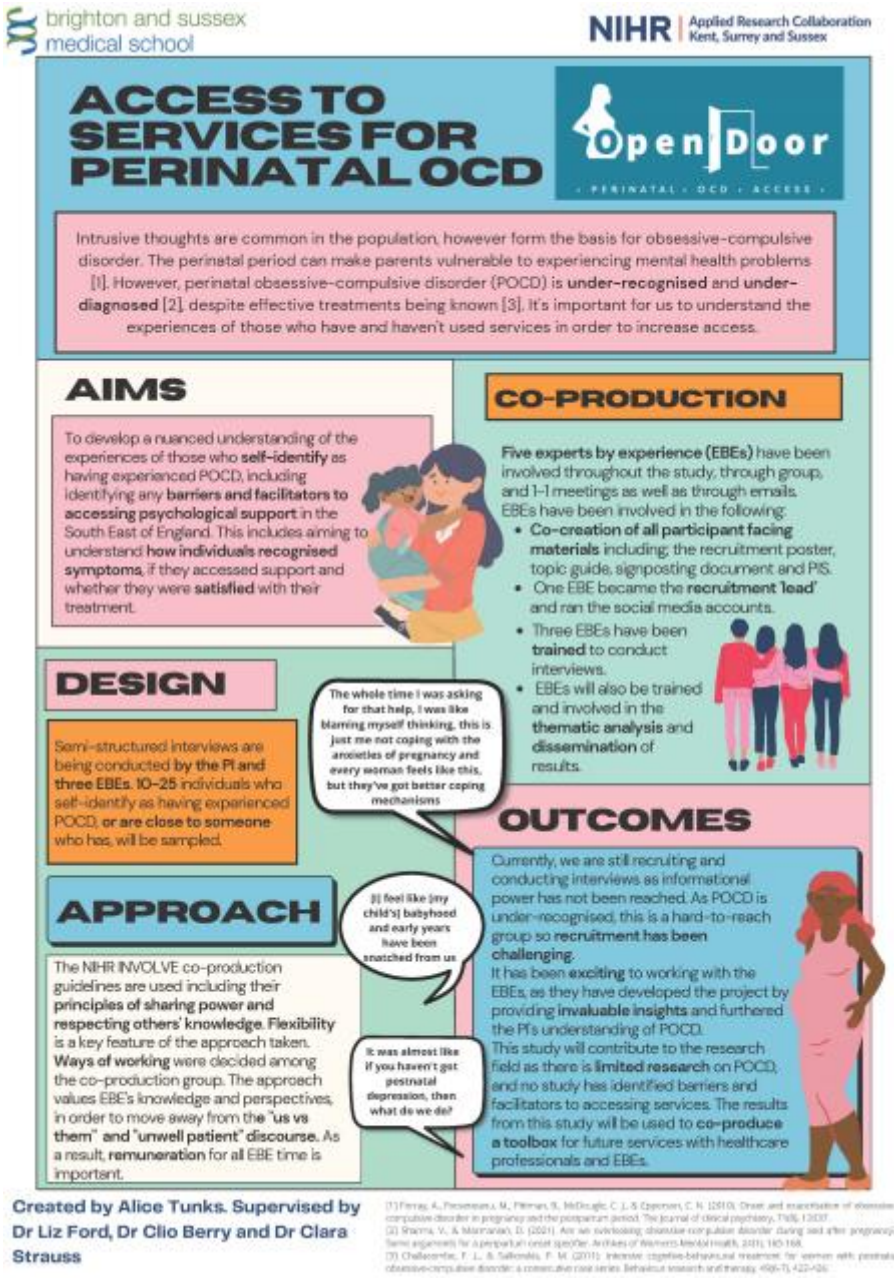
Research Poster Competition 2022



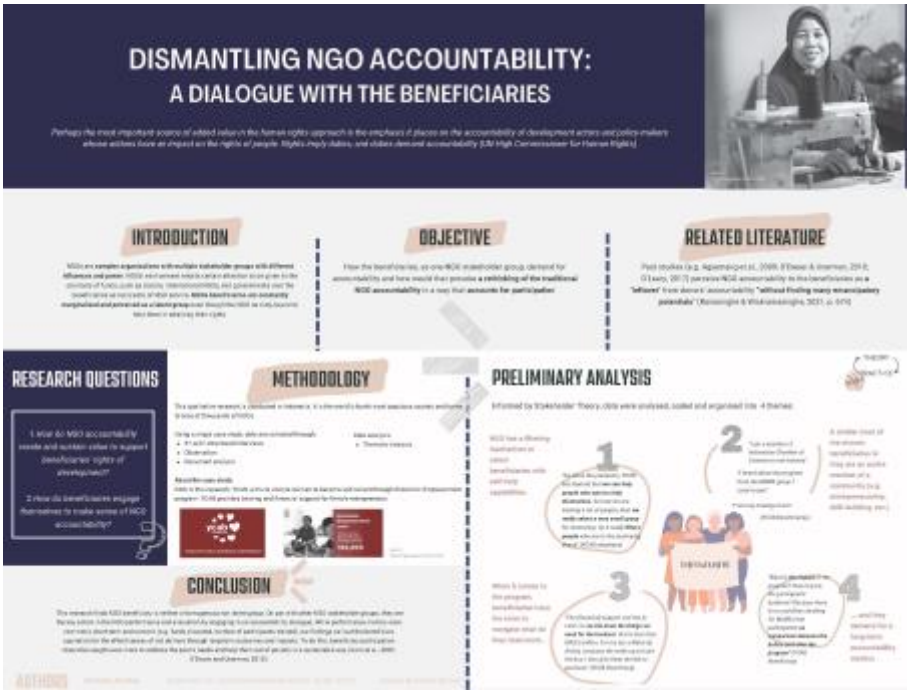
Using dynamic norms to influence sustainable behaviour - *Alaa Aldoh (School of Psychology)*



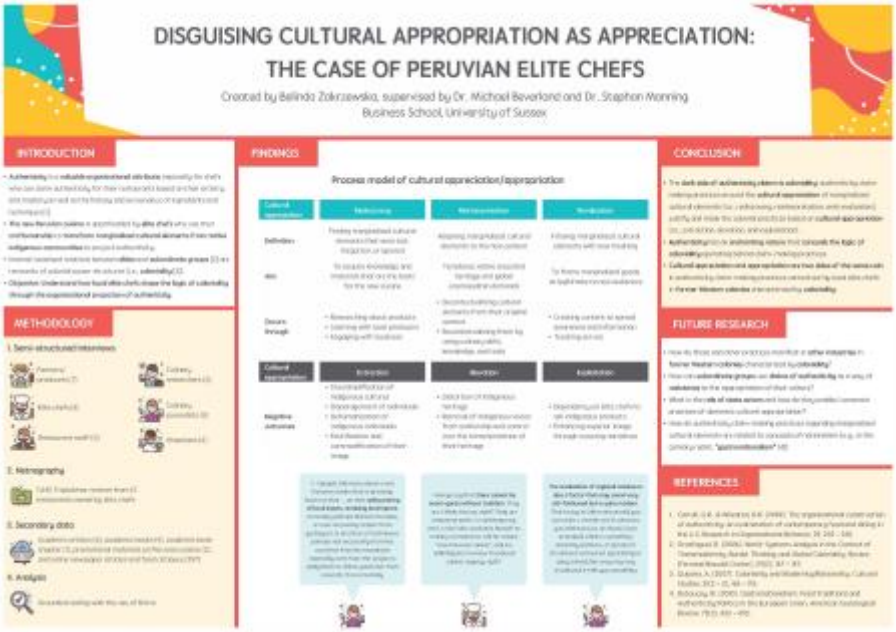
Investigating Dogs' Perceptions of Disembodied Technology - *Alice Torjussen (School of Engineering and Informatics)*



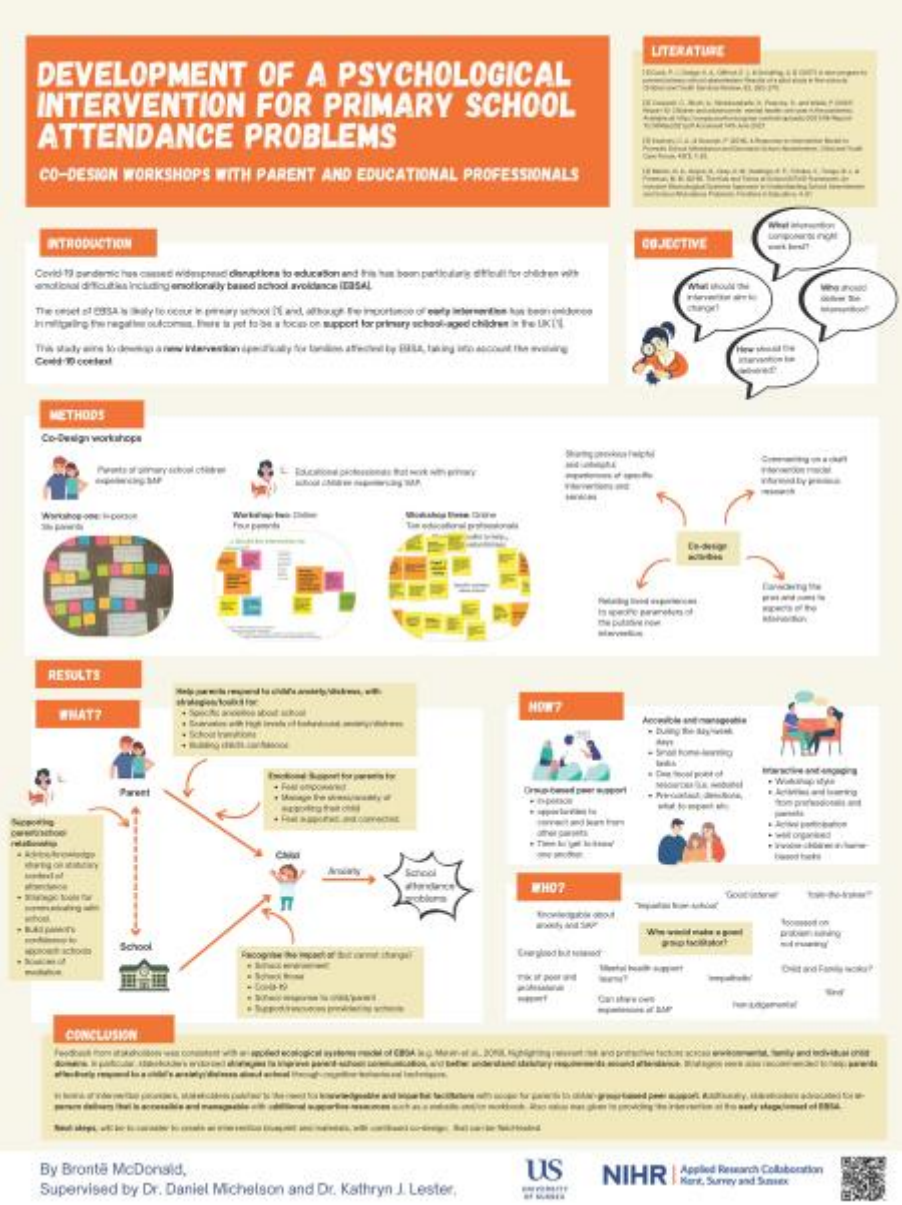
Access to services for perinatal OCD - *Alice Tunks (Brighton & Sussex Medical School)*



Dismantling NGO Accountability: A Dialogue with the Beneficiaries - *Amanda Acintya (Sussex Business School)*



Disguising cultural appropriation as appreciation: The case of Peruvian elite chefs - *Belinda Zakrzewska (Sussex Business School)*



Development of a psychological intervention for primary school attendance problems: codesign workshops with parent and educational professionals - *Brontë McDonald (School of Psychology)*

Intrinsic decision biases are under cognitive control

Clémence Compain[1,2], Anil K. Seth[1,2], Maxine Sherman[1,2]

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Introduction

People generally exhibit intrinsic decision biases when they are asked to make a forced choice[1,2].

Can people control their biases once they are informed of them?

Does the knowledge of such bias and the cognitive effort to control it improve metacognition (the ability to evaluate our own performance)?

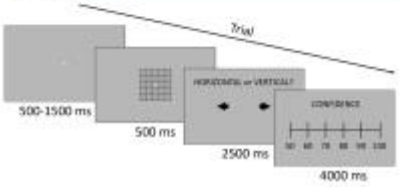
We predicted that people successfully controlling their bias will decrease it without decreasing their performance. However, people adopting a trivial response strategy to decrease their bias will have their performance decrease as well.

Methods

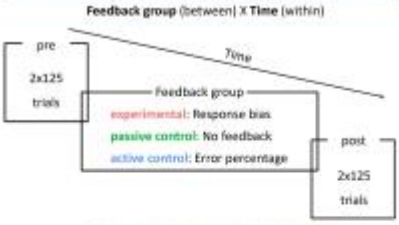
Fully pre-registered: 10.17605/OSF.IO/PMDJ2

N = 115 participants, 69 used in analyses

Procedure



Design



"You have a LARGE bias towards HORIZONTAL.
You have 25% of error.

This does not mean that your performance on the task is bad.

It means that, all else being equal (i.e. if the orientations occurred equally often over time), you are more likely to press HORIZONTAL than VERTICAL." In the second half of the experiment, be unbiased. In other words, do not be biased towards reporting HORIZONTAL, or towards reporting VERTICAL. In the second half of the experiment, make less errors."

Analyses

Type 1 judgment[3]:
- Discrimination performance: d-prime
- Decision bias: c-prime (criterion/d-prime)

Type 2 judgment:
- Confidence
- Metacognitive efficiency: m-ratio (Meta-d'/d')[4]

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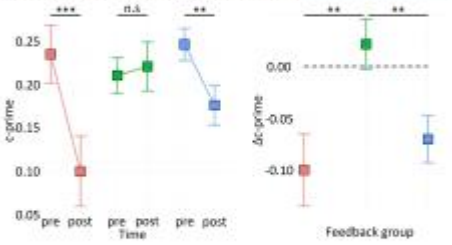
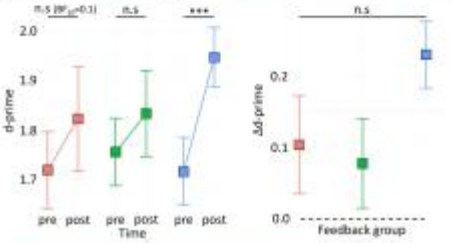
Acknowledgements: This work was supported by the Leverhulme Trust

Results

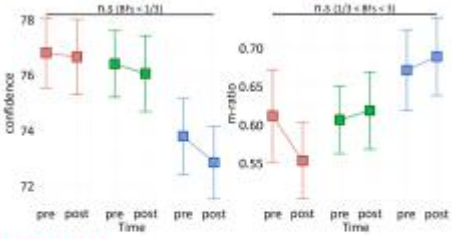
Feedback reduces decision biases



Without decreasing performance



Without improving metacognition



Conclusion

Participants were able to control their intrinsic decision biases once they were informed of them. No significant decrease of accuracy was found, so participants did not adopt a trivial response strategy.

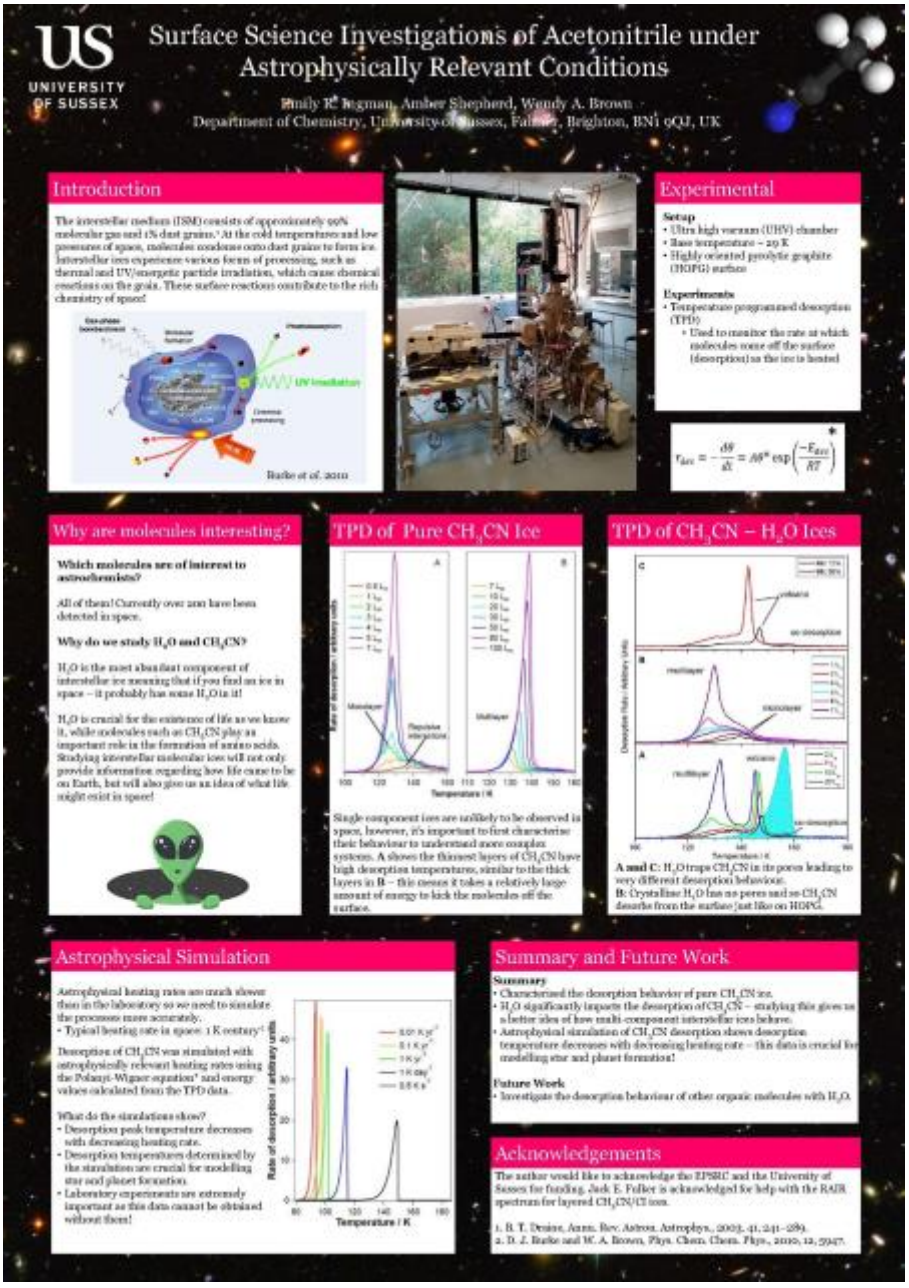
But asking them to try harder (active control) worked just as well.

The decrease of biases happened regardless of how well they were able to infer their decision accuracy (confidence). However, we cannot determine whether m-ratio changed or not.

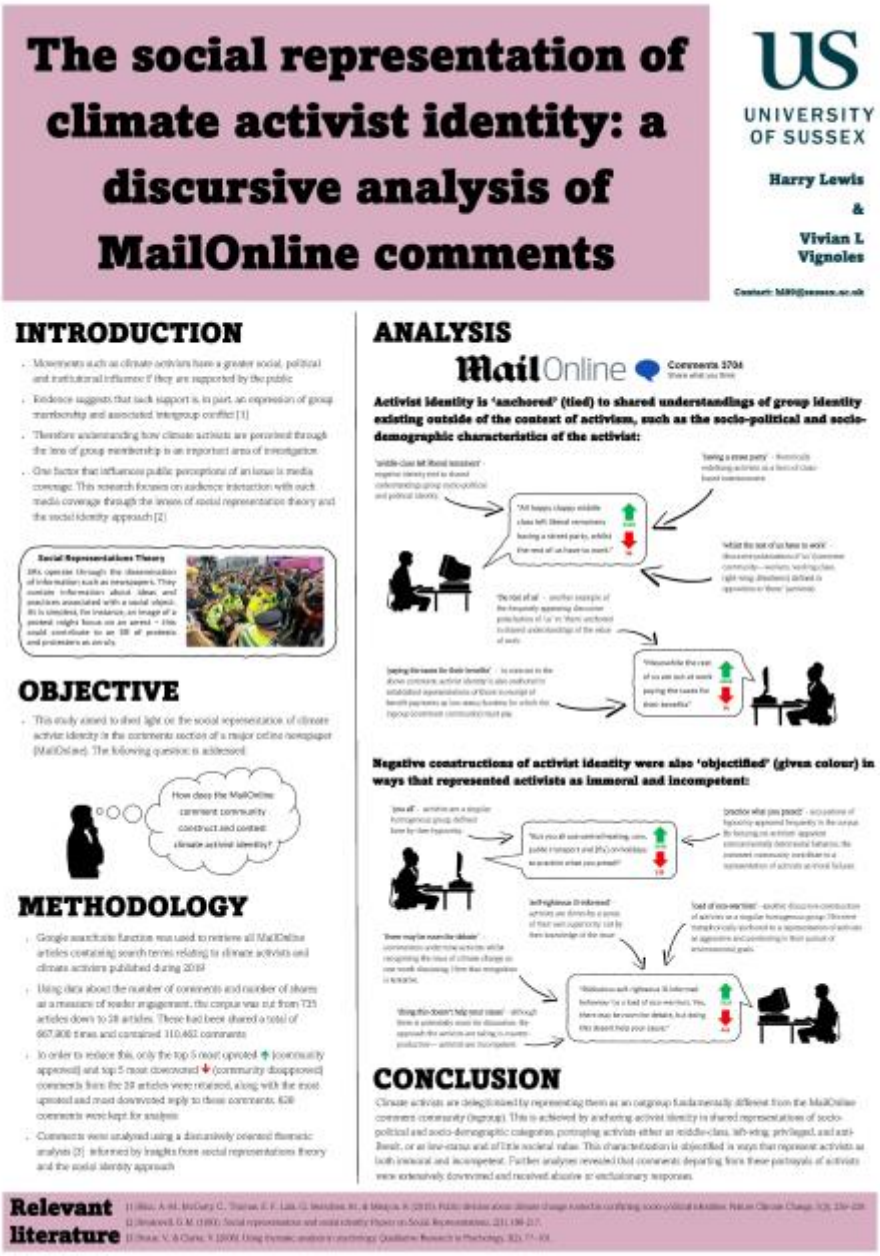
References

1. Mamassian, P., & Wallace, J. M. (2010). Sustained directional biases in motion transparency. J. Vis.
2. Wexler, M., Duyck, M., & Mamassian, P. (2015). Persistent states in vision break universality and time invariance. PNAS.
3. Macmillan, N. A., & Creelman, C. D. (2004). Detection theory: A user's guide. Psychology press.
4. Maniscalco, B., & Lau, H. (2014). Signal detection theory analysis of type 1 and type 2 data: meta-d', response-specific meta-d', and the unequal variance SDT model. The cognitive neuroscience of metacognition.

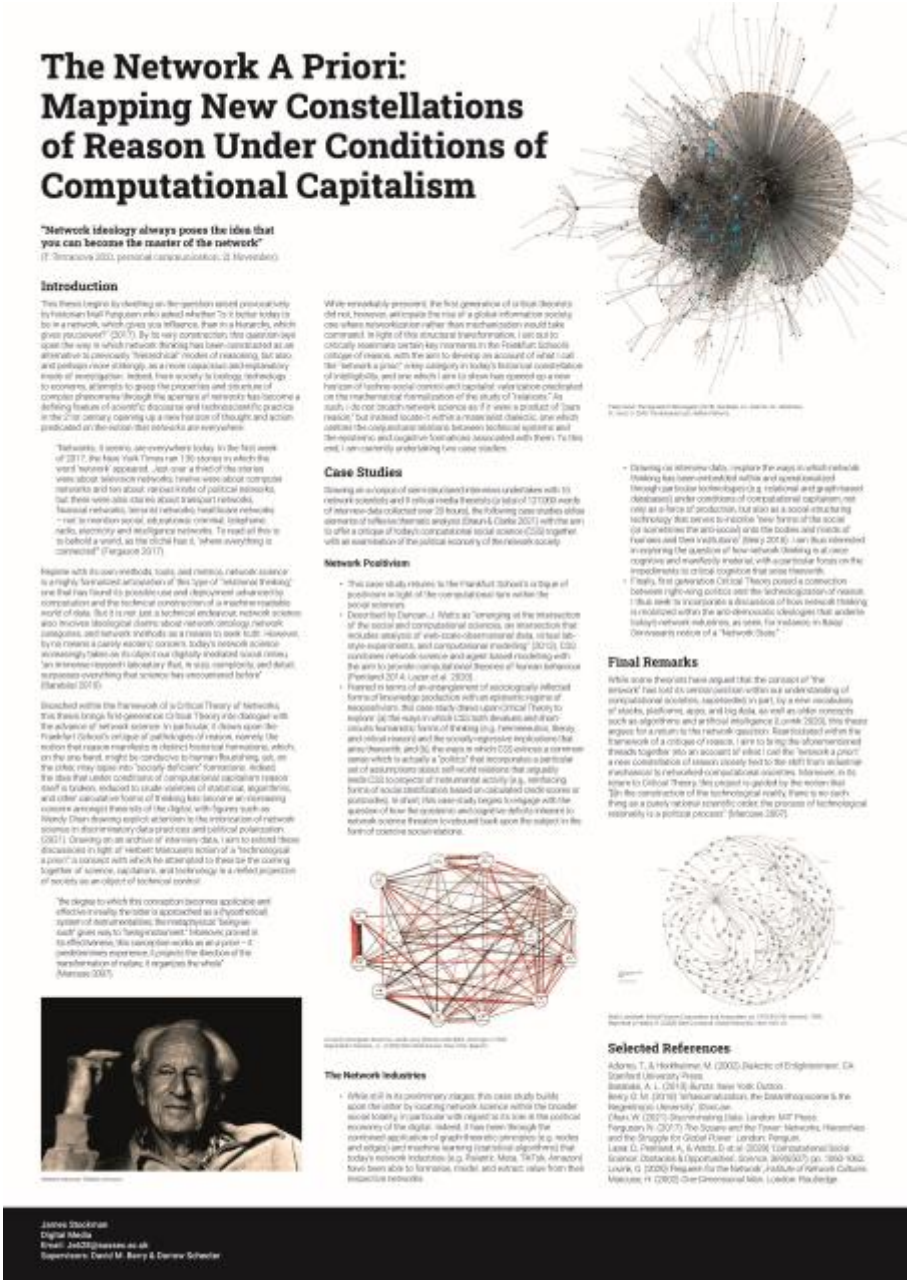
Intrinsic decision biases are under cognitive control - *Clémence Compain (School of Engineering and Informatics)*



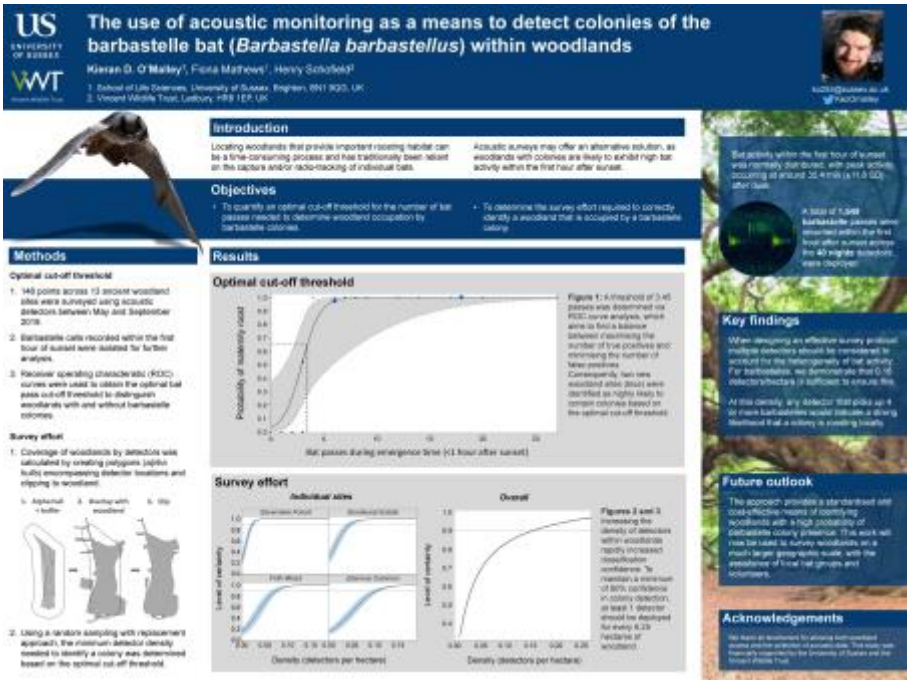
Surface Science Investigations of Acetonitrile under Astrophysically Relevant Conditions - *Emily Ingman (School of Life Sciences)*



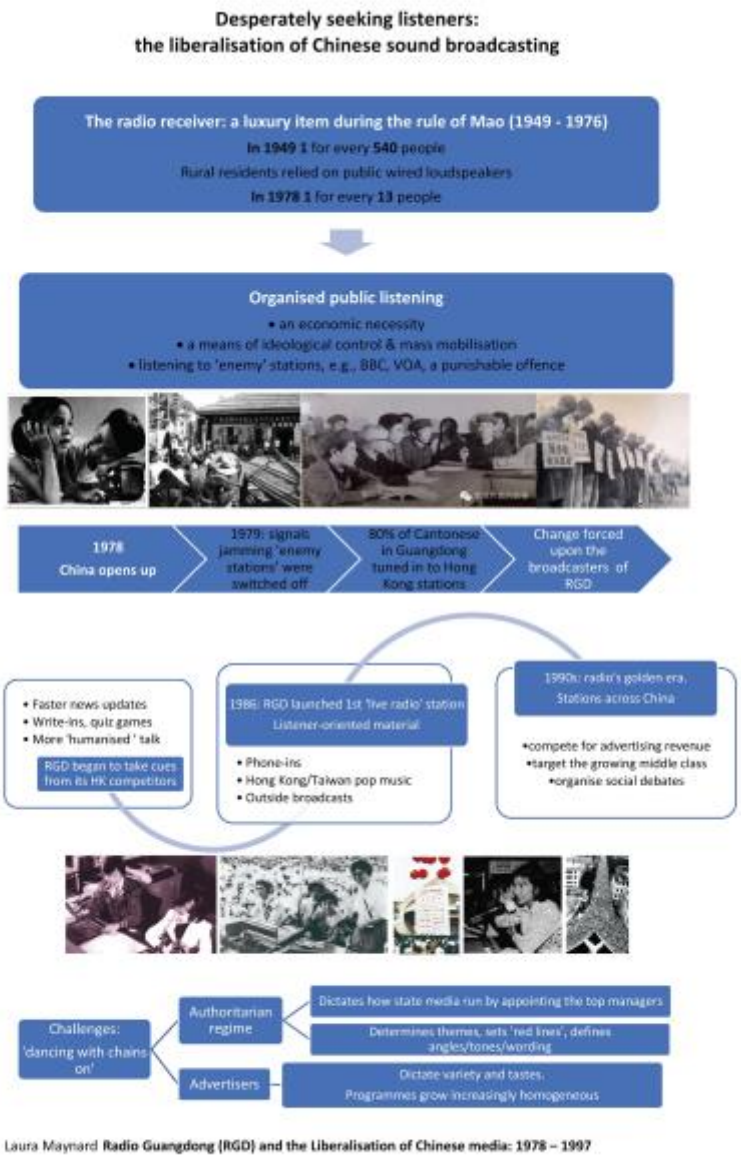
The social representation of climate activist identity: a discursive analysis of MailOnline comments
- Harry Lewis (School of Psychology)



The Network A Priori: Mapping New Constellations of Reason Under Conditions of Computational Capitalism - *James Stockman (School of Media, Arts & Humanities)*



The use of acoustic monitoring as a means to detect colonies of the barbastelle bat (Barbastella barbastellus) within woodlands - *Kieran O'Malley (School of Life Sciences)*



Desperately seeking listeners: the liberalisation of Chinese sound broadcasting - *Laura Maynard (School of Media, Arts and Humanities)*

A magpie approach to cosy methodologies - *Manuela Salazar (School of Media, Arts and Humanities)*