King's Research Portal

DOI:

[10.1037/abn0000457](https://doi.org/10.1037/abn0000457)

Document Version

Peer reviewed version

[Link to publication record in King's Research Portal](#)

Citation for published version (APA):

Oakley, B., Brewer, R. J., Bird, G., & Catmur, C. (2019). No Evidence for an Opposite Pattern of Cognitive Performance in Autistic Individuals with and without Alexithymia: a response to Rødgaard et al. *Journal of Abnormal Psychology*, 128(7), 738-739. <https://doi.org/10.1037/abn0000457>

Citing this paper

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

General rights

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

Take down policy

If you believe that this document breaches copyright please contact librarypure@kcl.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

RESPONSE: COGNITION IN AUTISTIC INDIVIDUALS WITH AND WITHOUT ALEXITHYMIA

No Evidence for an Opposite Pattern of Cognitive Performance in Autistic Individuals with and without Alexithymia: a response to Rødgaard et al.

Bethany F. M. Oakley

King's College London

Rebecca Brewer

Royal Holloway, University of London

Geoffrey Bird

University of Oxford

Caroline Catmur

King's College London

Author Note

Bethany F. M. Oakley, Department of Forensic and Neurodevelopmental Science, Institute of Psychiatry, Psychology and Neuroscience, King's College London, UK.

Rebecca Brewer, Department of Psychology, Royal Holloway, University of London, UK.

Geoffrey Bird, Department of Experimental Psychology, University of Oxford, UK and MRC Social, Genetic & Developmental Psychiatry Centre, Institute of Psychiatry, Psychology and Neuroscience, King's College London, UK

Caroline Catmur, Department of Psychology, Institute of Psychiatry, Psychology and Neuroscience, King's College London, UK

RESPONSE: COGNITION IN AUTISTIC INDIVIDUALS WITH AND WITHOUT
ALEXITHYMIA

Correspondence concerning this article should be addressed to Caroline Catmur,
Department of Psychology, King's College London, London SE1 1UL, UK,
caroline.catmur@kcl.ac.uk

RESPONSE: COGNITION IN AUTISTIC INDIVIDUALS WITH AND WITHOUT ALEXITHYMIA

Abstract

Rødgaard and colleagues confirmed our finding of a negative relationship between performance on the Reading the Mind in the Eyes Test and alexithymia, regardless of autism diagnosis. In their analysis of our cognitive Theory of Mind data, however, they did not control for autistic traits, which covary with alexithymia. Here we demonstrate that when autistic traits are controlled for, there is no significant association between alexithymia and cognitive theory of mind performance in participants with autism.

Keywords: autism spectrum disorder, alexithymia, emotion recognition, social cognition, theory of mind

RESPONSE: COGNITION IN AUTISTIC INDIVIDUALS WITH AND WITHOUT ALEXITHYMIA

General Scientific Summary

We analyse the performance of individuals with autism on a cognitive theory of mind task. A previous commentary article suggested that these individuals' performance varies according to their level of alexithymia. Here we show that it is important to control for levels of autism traits in such analyses, and that when this is done, there is no association between alexithymia and cognitive theory of mind performance in participants with autism.

RESPONSE: COGNITION IN AUTISTIC INDIVIDUALS WITH AND WITHOUT ALEXITHYMIA

No Evidence for an Opposite Pattern of Cognitive Performance in Autistic Individuals with and without Alexithymia: a response to Rødgaard et al.

The primary aim of our original paper (Oakley, Brewer, Bird & Catmur, 2016) was to determine whether the Reading the Mind in the Eyes Test (RMET; Baron-Cohen, Wheelwright, Hill, Raste & Plumb, 2001) is a valid measure of theory of mind (ToM), or whether performance on the task instead relies on emotion recognition ability. We predicted that, if the RMET indexes ToM, then autistic traits should predict task performance. However, if the RMET indexes emotion recognition, then alexithymia, and not autistic traits, should predict performance. We are pleased to note that Rødgaard, Jensen and Mottron (2019) confirmed a significant negative relationship between RMET performance and alexithymia, regardless of autism diagnosis, validating our original findings.

In addition to the RMET, our original paper reported analyses for another ToM task - the Movie for the Assessment of Social Cognition (MASC; Dziobek et al., 2006). We included this control task since, unlike the RMET, it does not rely exclusively on facial emotion recognition. In their commentary, Rødgaard et al. (2019) argue that their finding of an association between performance on cognitive items from the MASC and alexithymia is contrary to our original results and modifies the interpretation of our data. However, no reference has been made to the results from our hierarchical regression models, reported in Supplementary Table 2 of Oakley et al. (2016). Here, we showed that dimensional (i.e. not reliant on an autism diagnosis) autistic traits were significantly and negatively related to MASC-Cognitive performance, after controlling for alexithymia and gender. In this model, alexithymia was not significantly related to MASC-Cognitive performance, however gender was. Rødgaard et al. do not seem to have accounted for dimensional autistic traits nor gender in their analyses. Controlling for such factors is essential if one wishes to conclude that alexithymia, specifically, is associated with Cognitive ToM. Although the autism and control

RESPONSE: COGNITION IN AUTISTIC INDIVIDUALS WITH AND WITHOUT ALEXITHYMIA

groups were matched according to alexithymia traits, the association between autistic and alexithymia traits (Hill, Berthoz & Frith, 2004) makes it essential to control for one when investigating the effect of the other. The analyses in the commentary are therefore insufficiently comparable to argue that they are contrary to our original results. Indeed, within the autism group, the data do not indicate a significant association between alexithymia and MASC-Cognitive performance, after controlling for gender and autistic traits ($\beta=.45$, $p=.10$), contrary to the authors' suggestion.

In addition, the commentary states that 'autistic individuals with and without alexithymia seem to present with distinct profiles of difficulties in ToM abilities.' While an interesting line of enquiry, we believe that this is an overstatement of the interpretations that can be drawn from the reported analyses. This is because the analyses reported in the commentary do not assess autism subgroups with and without alexithymia. Rather, they report the continuous correlation between MASC-Cognitive performance and alexithymia within autism and control groups, respectively. When the analysis above (i.e. controlling for gender and autistic traits) is repeated using alexithymia severity subgroup as a predictor, alexithymia subgroup membership does not predict MASC-Cognitive performance ($\beta=.47$, $p=.09$).

References

- Baron-Cohen S., Wheelwright S., Hill J., Raste Y., & Plumb I. (2001). The “Reading the Mind in the Eyes” Test revised version: A study with normal adults, and adults with Asperger syndrome or high-functioning autism. *Journal of Child Psychology and Psychiatry*, 42, 241–251. 10.1111/1469-7610.00715
- Dziobek I., Fleck S., Kalbe E., Rogers K., Hassenstab J., Brand M., et al. Convit A. (2006). Introducing MASC: A Movie for the Assessment of Social Cognition. *Journal of Autism and Developmental Disorders*, 36, 623–636. 10.1007/s10803-006-0107-0
- Hill, E., Berthoz, S., & Frith, U. (2004). Brief report: cognitive processing of own emotions in individuals with autistic spectrum disorder and in their relatives. *Journal of Autism and Developmental Disorders*, 34, 229–235.
- Oakley, B., Brewer, R., Bird, G., & Catmur, C. (2016). Theory of Mind Is Not Theory of Emotion: A Cautionary Note on the Reading the Mind in the Eyes Test. *Journal of Abnormal Psychology*, 125(6), 818-823. 10.1037/abn0000182
- Rødgaard, E.-M., Jensen, K., & Mottron, L. (2019). An Opposite Pattern of Cognitive Performance in Autistic Individuals with and without Alexithymia. *Journal of Abnormal Psychology*.