



Kent Academic Repository

Zafarana, Antonio, Hunt, Laura, Farnè, Alessandro and Tamè, Luigi (2022) *Visual perceptual learning near and far from the body*. In: *Experimental Psychological Society Meeting, 5-7 Jan 2022, London*. (In press)

Downloaded from

<https://kar.kent.ac.uk/91935/> The University of Kent's Academic Repository KAR

The version of record is available from

[https://doi.org/Working Poster No. 39](https://doi.org/Working%20Poster%20No.%2039)

This document version

Author's Accepted Manuscript

DOI for this version

Licence for this version

UNSPECIFIED

Additional information

Versions of research works

Versions of Record

If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

Author Accepted Manuscripts

If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in **Title of Journal**, Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

Enquiries

If you have questions about this document contact ResearchSupport@kent.ac.uk. Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our [Take Down policy](https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies) (available from <https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies>).

Visual perceptual learning near and far from the body

Antonio Zafarana¹, Laura Hunt¹, Alessandro Farnè^{2,3}, Luigi Tamè¹

¹ School of Psychology, University of Kent; ² INSERM U1028, Lyon Neuroscience Research Centre, Lyon, France; ³ University Claude Bernard Lyon I, F-69000 Lyon, France

Introduction

It has been demonstrated that stimuli close to the body (peripersonal space, PPS) are processed differently, so that shape discrimination is faster for closer compared to further objects (Blini et al., 2018). This advantage has been seen for both low-level visual features: size, orientation and high-level: face identification (Ahsan et al., 2021).

A visual perceptual learning paradigm developed by Sigman & Gilbert (2000) shows that participants performance can improve selectively for a specific trained orientation and not for the untrained orientation.

Aim

This study aims to investigate whether visual perceptual learning has different effects based on the position of stimuli (near or far from the observer). Since the stimuli are embedded in a background that elicit a Ponzo illusion, the effects of the illusion on learning are also examined.

Methods

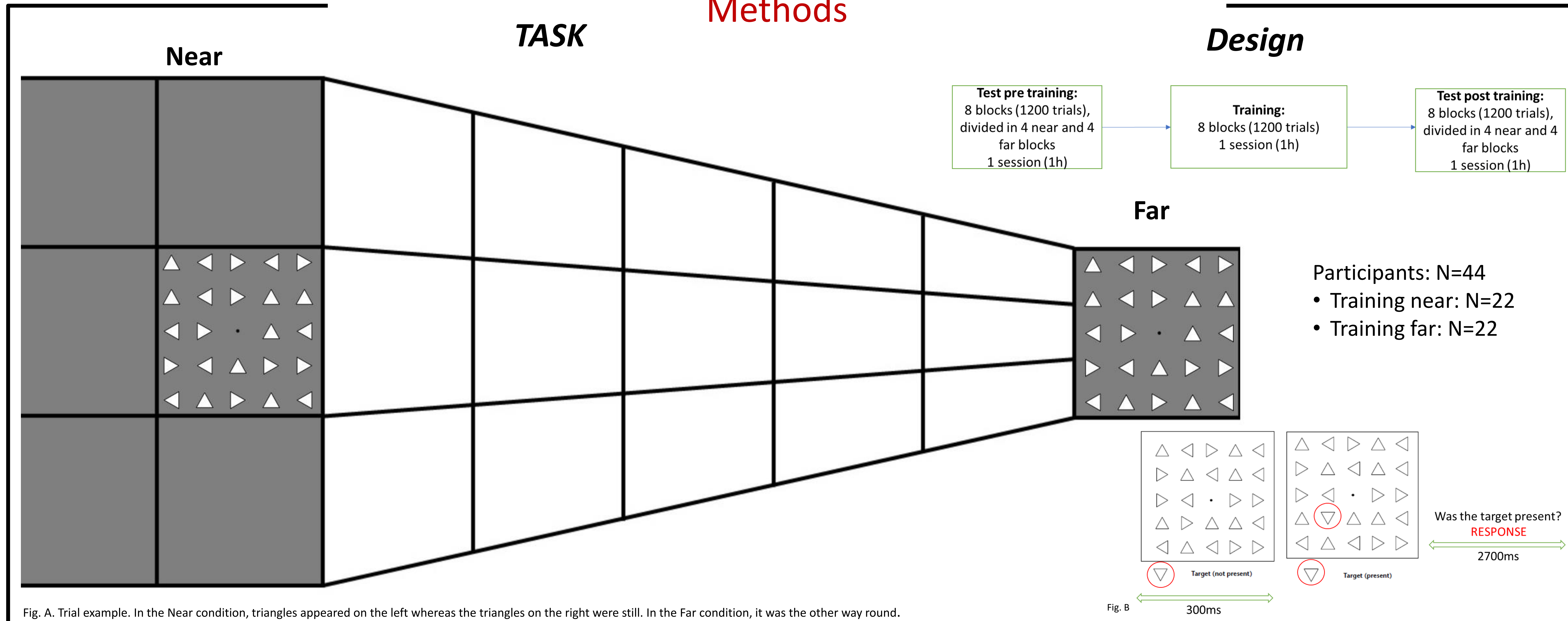


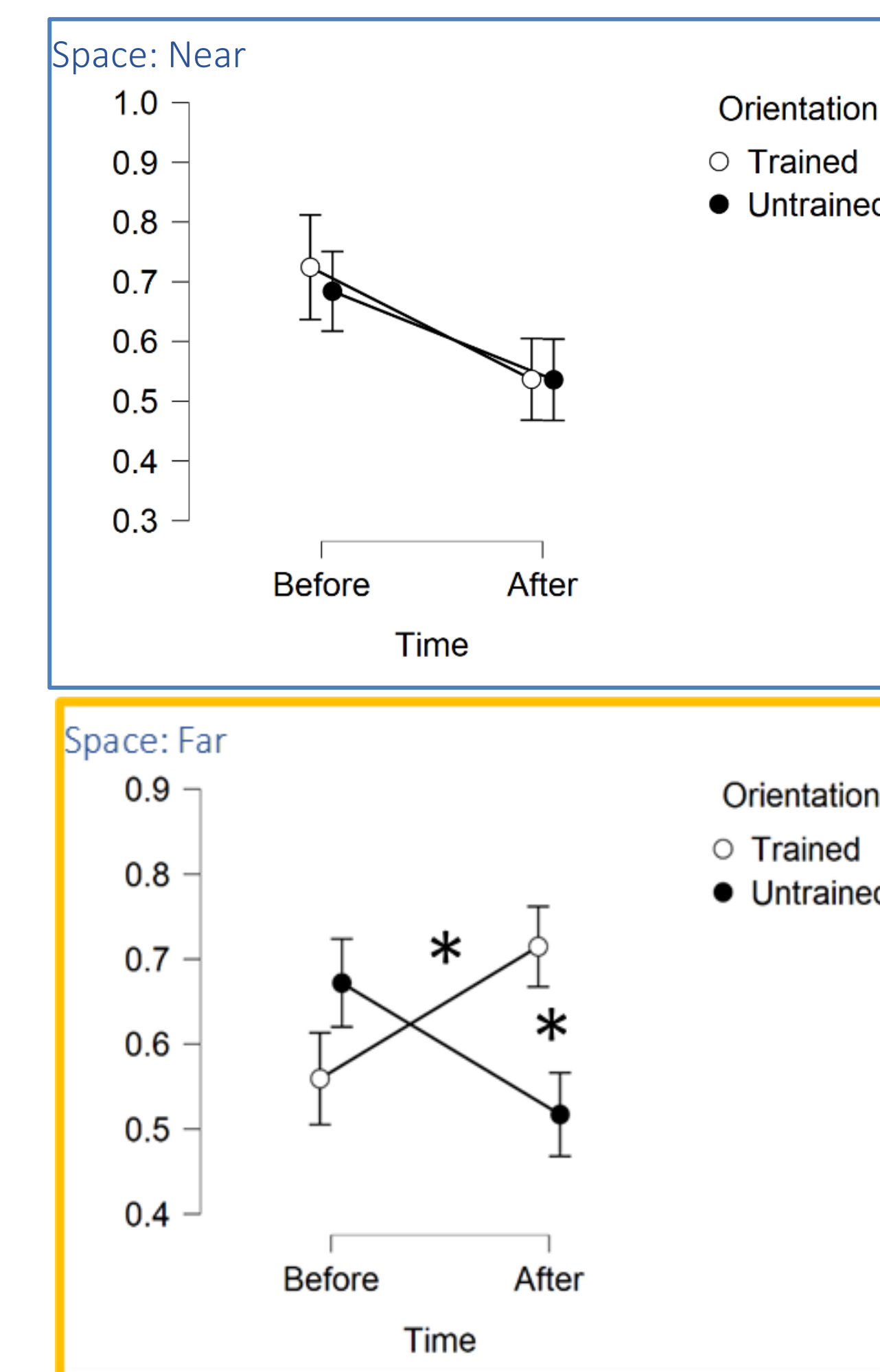
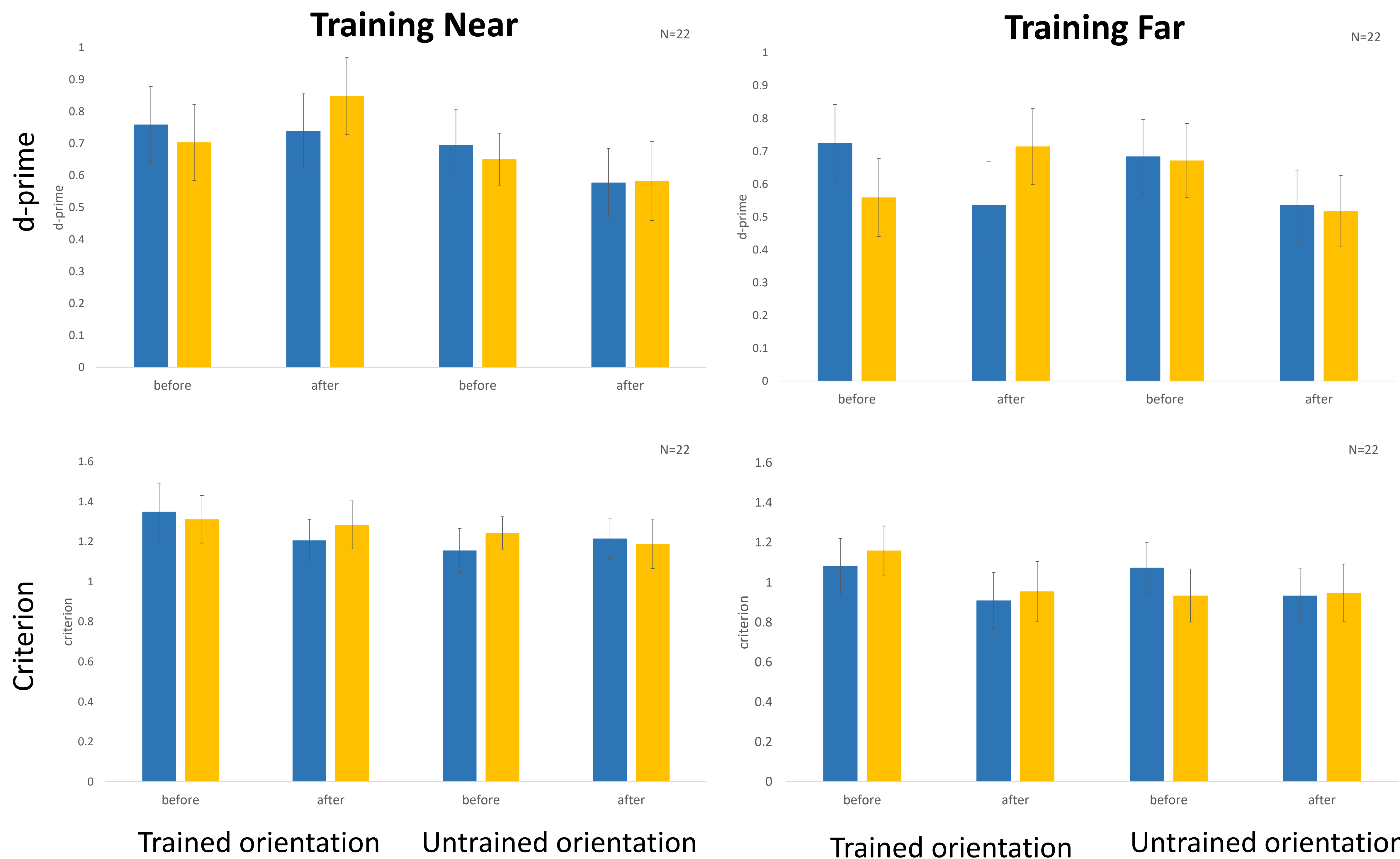
Fig. A. Trial example. In the Near condition, triangles appeared on the left whereas the triangles on the right were still. In the Far condition, it was the other way round.

Visual search task: participants had to report whether a specific target (triangle in 1 orientation) was present or not amongst distractors (trinagles) (fig.B).

Participants saw the target at the beginning of each block.

Training: Each participant was then trained by repeating blocks in a particular target orientation (up or down) and either in near or far space (fig. A).

Results



Two 3-way repeated measures ANOVAs with 3 within-subjects factors:

- Orientation (Trained, Untrained),
- Time (Before, After),
- Space (Near, Far).

Data is divided in participants who carried out the training near (left column) and those who did the training far (right column).

Training Far: Time x Space $\rightarrow F(1,21) = 4.5, p = 0.046$;
Orientation x Time x Space $\rightarrow F(1,21) = 4.84, p = 0.039$

$P < 0.05$

Conclusions

Contrary to expectations, the training Near did not produce any significant effect, whereas the training Far did. Participants were more accurate after the training Far but only for trained orientation in the Far condition. These results suggest that there might be a predisposition to visual learning for stimuli that are perceived far compared to near from the body. However, it cannot be excluded that participants perceived the stimuli in the far condition as bigger due to the Ponzo illusion and this is reason we observe a learning effect only in the training far.

Contact: A.zafarana@kent.ac.uk