Review of: "Let's face it: The lateralization of the face perception network as measured with fMRI is not clearly right dominant"

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I have been officially invited by Qeios to review a preprint titled ‘Let’s face it: The lateralization of the face perception network as measured with fMRI is not clearly right dominant’, submitted to BioRxiv. Instead of a formal academic template required for Journal reviews, I would like to say a few words about this paper in a less formal manner.

First of all, it is a pleasure to see this work done. Highly recommended.

In this excellent and highly promising paper, the authors investigate the right hemisphere hypothesis, since this model has been considered ‘most validated’ by empirical work since Mills’ 1912 until today. The present paper questioned the right dominance model for face perception network using fMRI (block design of faces, houses, and scrambled images), considering sex and handedness in a large sample size. In short, the results demonstrated no clear dominance of the right hemisphere in the face perception network indicating the fundamental role of individual differences. I found this empirical work is in line with my previous findings and the HFE model I have proposed recently, see the details below.

There are at least three comments I learned from this work that I would like to point out here: *The fundamental role of individual differences in face perception network. -Right dominance tendency but bilateral possibilities. - Implication for the bilateral model,* as Ina wrote in her paper ‘bilateral, with a slight tendency towards right-dominance at the group level and a large interindividual variability’.

Although I highly recommend this fMRI study to the readership since the work is excellent, I suggest the authors take a look at three previous papers, simply because it seems these papers have been overlooked but could highly improve this paper's overall quality before publishing.

Recently, I have published a review in regard to (see below) the hemispheric functional-equivalence model (HFE) (1) proposing that ‘the brain is initially right-biased in emotional and neutral face perception by default; however, altered psychophysiological conditions (e.g., acute stress, a demanding emotional task) activate a distributed brain-network of both hemispheres toward functional equivalence that results in relatively equalized behavioral performance in emotional and neutral face perception’.

Furthermore, a recent empirical paper (2) from our lab showed that ‘there is a strong influence of inter-individual differences on the lateralization of emotional face perception in such a way that brain lateralization is more prominent in certain individuals’. For example, under stress conditions ‘even reversed hemispheric asymmetry may occur’ due to the redistribution of performance indicating a high level of flexibility and individual differences in face perception.

I would also like to mention early work by Vytal, K., & Hamann (3). In their meta analyses collecting large numbers of PET and fRMI considering face perception, they showed that ‘the key elements of basic emotion views are reflected in neural correlates identified by neuroimaging studies’, from which you can identify brain lateralization in regard to face perception.

Along these lines, I disagree with Ina that she pointed out ‘Interestingly, there are, to our knowledge, no imaging studies that systematically describe the distribution of hemispheric lateralization in the core system of face perception across subjects in large cohorts so far. ‘

Good luck with further work and congratulations.

1 Stanković, M. (2021). A conceptual critique of brain lateralization models in emotional face perception: Toward a hemispheric functional-equivalence (HFE) model. *International Journal of Psychophysiology*, *160*, 57-70.
2 Stanković, M., & Nešić, M. (2020). Functional brain asymmetry for emotions: Psychological stress-induced reversed hemispheric asymmetry in emotional face perception. *Experimental Brain Research*, *238*(11), 2641-2651.
3 Vytal, K., & Hamann, S. (2010). Neuroimaging support for discrete neural correlates of basic emotions: a voxel-based meta-analysis. *Journal of cognitive neuroscience*, *22*(12), 2864-2885.