

Peer Review

Review of: "The Polyvagal Theory in Contemporary Psychology: Why Popularity Should Not Be Confused with Scientific Validity"

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Commentary

The Polyvagal Theory in Contemporary Psychology: Why Popularity Should Not Be Confused with Scientific Validity

Review:

Thank you for this interesting manuscript.

I agree with the questioning of the polyvagal theory from a scientific perspective, though I miss a discussion of S. Porges' concepts, including neuroception, from the point of view of the patterns of activations of the central nervous system occurring BEFORE vagal/visceral activations, thus reflecting on the complexity of appraisal processes.

The author wrote:

In the modern science of the Microbiota-Gut-Brain-Mind axis[26], the hypotheses formulated by the polyvagal theory struggle to find a logical and coherent place with the most recent scientific findings, which emphasize the enormously integrated, complex, and bidirectional interaction that characterizes this axis.

See, for example, concepts such as the poly-valent seeking system of the periaqueductal gray of the midbrain, the shock responses of the brainstem, described in the theory of deep brain reorienting (DBR). Also, changes in functional connectivity of the brain's intrinsic networks, for example, the Default Mode

Network, and how embodiment and prediction/prediction errors rely on certain nodes of the cerebellum, and how these processes impact the cortex in efferent and afferent loops, ought to be addressed. It is not enough to vaguely describe the microbiota-gut-brain-mind-axis, though a strong argument, and a more scientifically based strategy, when reflecting on potential flaws in the polyvagal theory, would be to search for what happens in a human being before the phenomena described by Porges occur.

Also, an angle of interest could be how dissociative processes impact the possibility of recognising available internal states.

Here are some references that may be of interest:

Corrigan, F. M., & Christie-Sands, J. (2020). An innate brainstem self-other system involving orienting, affective responding, and polyvalent relational seeking: Some clinical implications for a “Deep Brain Reorienting” trauma psychotherapy approach. *Medical Hypotheses*, 136, Article 109502. <https://doi.org/10.1016/j.mehy.2019.10.9502>

Corrigan, F. M., Lanius, U. F., & Kaschor, B. (2023). The defense cascade, traumatic dissociation and the self: A neuroscientific model. In M. J. Dorahy, S. N. Gold, & J. A. O’Neil (Eds.), *Dissociation and the dissociative disorders: Past, present, future* ((2nd ed., pp. 587–601). Routledge.

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Lanius, R. A., Terpou, B. A., & McKinnon, M. C. (2020). The sense of self in the aftermath of trauma: Lessons from the default mode network in post-traumatic stress disorder. *European Journal of*

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Lanius, R. A. (2015). Traumarelated dissociation and altered states of consciousness : Call for clinical, treatment, and neuroscience research. *European Journal of Psychotraumatology*, 6(1), Article 27905. <https://doi.org/10.3402/ejpt.v6.27905>

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Lanius, R., Kearney, B., Shaw, S., Densmore, M., McKinnon, M., Jetly, R., & Théberge, J. (2025). Breaking the circuit: Reduced cerebello-thalamo-cortical functional connectivity during traumatic memory retrieval in PTSD and its dissociative subtype. *Springer Science*. DOI: [10.21203/rs.3.rs-6008376/v1](https://doi.org/10.21203/rs.3.rs-6008376/v1)

Declarations

Potential competing interests: No potential competing interests to declare.