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Peer Review

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

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This paper critiques the Polyvagal Theory (PVT) for lacking empirical validation and biological plausibility despite widespread adoption. While it raises legitimate concerns about PVT's scientific foundations, the argument is poorly organised and several key criticisms remain underdeveloped.

My main concern is that the paper moves haphazardly between anatomical, methodological, and epistemological critiques without a clear structure. The opening promises one kind of analysis (epistemological risks) but delivers an unfocused mix of empirical and conceptual objections. The comparative anatomy point (myelinated vagal fibres exist in non-mammalian species) directly contradicts PVT's evolutionary narrative but gets lost mid-paper. Further, the claim that emotional freezing is mediated by the wrong vagal nucleus (ventral vs. dorsal motor nucleus) appears in a single paragraph despite being potentially devastating to the theory. These empirical contradictions deserve prominence and elaboration.

The microbiota section seems tangential but takes up a large part of the paper. The paper argues PVT is incomplete because it ignores gut microbiota. This feels like importing a separate theoretical commitment rather than critiquing PVT on its own terms. The claim that any autonomic theory must include microbiota or "violate causal completeness" is overreaching and distracts from stronger anatomical and methodological critiques. By this logic, every psychological theory that doesn't mention gut bacteria is fundamentally flawed.

Terms like "epistemological risks," "narrative heuristic," and "category error" are used repeatedly but not sufficiently elaborated. What distinguishes an epistemological from an empirical problem here? What do

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these terms mean in this context? For instance, the sentence “Grossman[18] counters that using RSA as equivalent to general vagal tone index ... is conceptually a category mistake" does neither explain what a category mistake is nor what the implications for the PVT are.

The paper warns of clinical risks (oversimplification, inappropriate interventions) but provides no concrete examples of how PVT-based interpretations lead to problematic practice. The paper seems to warn of a perceived risk that may arise from the application of the PVT. However, the application of a theory should be separated from the theory itself.

Overall, the paper would need to be substantially revised to capitalise on its strong points.

Declarations

Potential competing interests: No potential competing interests to declare.

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