

# Pathological Complexity and the Function of Consciousness in Nature: Part 2

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## Abstract

This essay functions as the introduction to the second issue in a two-part special issue on Walter Veit's recent monograph *A Philosophy for the Science of Animal Consciousness* (Routledge, 2023). Here, Veit offers a summary of the remaining six commentaries, as well as his two response pieces.

## Keywords

consciousness, adaptive behaviour, evolution, subjective experience, animal consciousness

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## Introduction

This editorial introduces the second issue of a two-part special series examining my monograph *A Philosophy for the Science of Animal Consciousness* (Veit, 2023a) as well as my extended work on the pathological complexity thesis.<sup>1</sup> Again, I would like to express my thanks to the nine commentators on my work. In what follows, I summarize the remaining six commentaries alongside my two response pieces on the pathological complexity thesis (PCT): the first addressing critical perspectives and the second exploring applications across species.

## The Second Batch of Commentaries

The fourth commentary article comes from philosopher Christian R. de Weerd (2025), who challenges the very methodology of my bottom-up evolutionary approach to consciousness science. De Weerd argues that using evolutionary considerations to independently support hypotheses about consciousness is problematic. According to de Weerd, my approach lacks the tools to disentangle conscious from non-conscious processing, whereas the traditional top-down experimental approaches possess just such means through paradigms like binocular rivalry. He suggests that my pathological complexity thesis cannot be directly supported by evolutionary evidence alone without making controversial assumptions about consciousness or relying on insights about human consciousness. He also maintains that my evolutionary arguments for the need of hedonic evaluations fail to address whether the processing of valenced

states needs to be done consciously or non-consciously. He proposes that my evidence more convincingly supports an adjacent hypothesis he describes as PCT\* asserting that an evaluative mode of being is required in general to deal with high pathological complexity, irrespective of how consciousness is involved.

The fifth commentary comes from philosopher Keith Frankish (2025), who situates my work within a broader theoretical context of the metaphysical discussions on consciousness and presses me on residual Cartesian influences. Frankish distinguishes between a traditional Cartesian paradigm in which consciousness is treated as involving irreducibly subjective 'qualia' that present a hard problem, and an emerging post-Cartesian paradigm associated with illusionism that treats consciousness as a complex functional state or rather phenomenon amenable to standard scientific investigation. While he argues that my Darwinian approach, with its focus on functional questions and bottom-up evolutionary explanations, belongs firmly within the post-Cartesian paradigm, he identifies places where he detects lingering Cartesian influence. These include my continued use of terms like 'qualia' and 'phenomenology' and my suggestion that hedonic valence states perform their functional role in virtue of their qualitative 'feel', which suggests what he calls a 'Cartesian bureau de change' where intrinsic value is felt and reacted to.

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Frankish argues this weakens my presentation and urges me to commit to a thoroughly functionalist account, abandoning the language of the Cartesian paradigm entirely since the two paradigms are incommensurable.

The sixth commentary comes from economist and philosopher [Don Ross \(2025\)](#), who shares my enthusiasm for the pathological complexity thesis and offers a case study drawing on his own work with elephants of how it can be applied African savannah elephants (*Loxodonta africana*). Ross argues that elephants present a uniquely informative comparison species for understanding human consciousness while avoiding anthropocentrism, as both species evolved convergently in response to similar ecological challenges in African semi-arid environments during periods of volatile climate changes. He offers a detailed empirical review describing how elephants' life histories are driven by extremely metabolically expensive brains, lengthy gestation and childhood, intense socialization, and complex foraging requirements, which ratchet up pathological complexity and suggesting a high degree of phenomenological complexity. Ross also offers a very insightful discussion of the various dimensions of their experience.

The seventh commentary comes from cognitive ethologist [Carolyn A. Ristau \(2025\)](#), who worked closely with Donald Griffin, and applies my pathological complexity thesis to piping plovers (*Charadrius melodus*), a threatened shorebird species she has studied extensively. Like Ross, Ristau wholeheartedly agrees with my evolutionary bottom-up approach that was inspired by the cognitive ethology that Griffin sought to create. She outlines the piping plover's life cycle usefully identifying the complex decisions plovers must face at different stages during their life histories. Ristau then discusses several field experiments demonstrating how plovers rapidly discriminate between threatening and safe intruders, deploy Broken Wing Displays strategically rather than reflexively (exhibiting monitoring and strategic flexibility), show sensitivity to intruder gaze direction (suggesting perspective-taking), and possess complex mental representations. Ristau argues that this suggests first-order intentionality which would serve plovers well in managing the pathological complexity of their life histories.

The eighth commentary comes from primatologist and cognitive ethologist [Anindya \(Rana\) Sinha \(2025\)](#) who draws on decades of naturalistic observations of wild bonnet macaques in India. Sinha embraces the pathological complexity thesis and uses it to illuminate the phenomenological complexity of bonnet macaques. He shows that they possess sophisticated social knowledge systems: they track others' dominance ranks and social attractiveness, and even maintain knowledge of their own position within the hierarchy. In grooming interactions, macaques integrate information across multiple domains to make strategic decisions. Sinha suggests that these capacities are suggestive of the evolution of self-awareness and reflect evolved responses to the pathological complexity of macaque social life.

The ninth and final commentary is by the animal welfare scientist [Matteo Chincarini \(2025\)](#) who explores the connections between my philosophical framework and animal welfare science. If consciousness evolved to improve evaluative decision-making, Chincarini argues, then welfare science should become essential understanding consciousness itself since it is the study of affective processes and decision-making in animals.

## My Responses

I thank all the contributors for their excellent contributions that have helped to refine and expand the pathological complexity thesis. My responses to the nine commentaries in this special issue have been split into two articles. In the first one, I deal with all the commentaries criticizing the pathological complexity thesis, that is, de Weerd, Suzuki, Sachs, Frankish, and Chincarini ([Veit, forthcoming b](#)), whereas I will respond to commentaries applying my framework to different cases in the second, that is, Ross, Ristau, Sinha, and Yilmaz (see [Veit, forthcoming a](#)).

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## Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Note

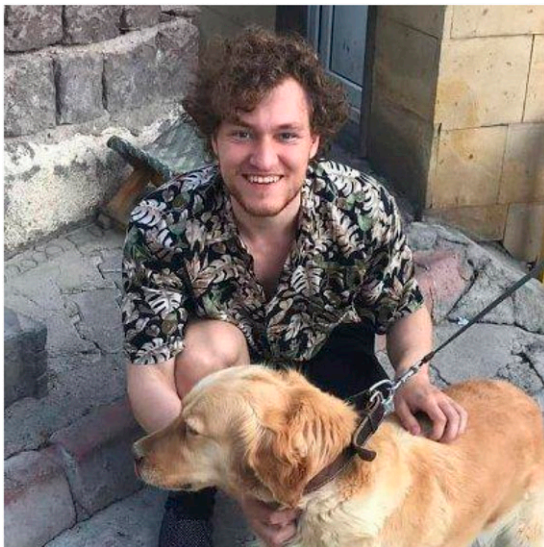
1. See also: ([Veit, 2022a, 2022b, 2022c, 2022d, 2023, 2025a, 2025b; Veit et al., 2025; Veit & Browning, 2022, 2023](#)).

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## Author Biography



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