

Structuralism in the Science of Consciousness

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Editorial Introduction

Conscious experiences have many structural features. Consider how your color experiences have dimensions of variation corresponding to hue, saturation, and brightness, how your visual acuity decreases in precision from the center of your visual field to the periphery, how your pain experiences come in different magnitudes, or how your temporal experience seems to flow in a continuous stream.

In recent years, structural questions about consciousness have received increased attention from both philosophers and scientists. Traditionally, consciousness research has been dominated by questions about either the fundamental nature of consciousness or the neural correlates of consciousness. These questions focus principally on the dividing line between conscious and non-conscious entities. Nowadays, more and more researchers have become interested in questions about modeling conscious experiences,¹ degrees and dimensions of consciousness², quality-spaces³, parts, wholes, and the unity of

¹ O'Brien & Opie (1999), Tononi (2008), Oizumi, Albantakis, Tononi (2014), Rudra et al (2017), Kleiner (2020), Kleiner & Tull (2021), Signorelli, Wang, & Khan (2021), Signorelli, Wang, & Coecke (2021), Tsuchiya (2021), Tallon-Baudry (2022).

² Overgaard et al (2006), Bayne, Hohwy, & Owen (2016), Windey & Cleeremans (2015), Fazekas & Overgaard (2016), Walter (2021), Lee, A (2023).

³ Clark (1993, 2000), Decock (2006), Rosenthal (2010, 2016), Decock & Douven (2012), Isaac (2013), Masrour (2015), Raffman (2015), Lee, A (2021), Tsuchiya et al (2022).

consciousness,⁴ continuity and discreteness,⁵ the role of structures in investigating and individuating conscious experiences,⁶ and the relationship between phenomenal structures and neural structures.⁷ These questions shift the focus to the structures of consciousness itself. Yet while it's uncontroversial that conscious experiences are structured, there has been little consensus on how to think systematically about these structures and the roles they play in investigating and explaining consciousness.

'Structuralism', in the most general sense, may be defined as an approach to consciousness research where the central aim is to investigate the structures of conscious experiences. Given this broad definition, there are many varieties of structuralism. As examples, *methodological structuralists* think that scientific methods give us knowledge only about structural features of consciousness, while *ontic structuralists* think that all there is to consciousness is structure. But even those who deny those claims might still think that the proper aim of the science of consciousness is to investigate structure.

Nevertheless, research on the structures of conscious experiences is currently at an early stage of development. Relevant articles are scattered across different debates and different academic fields. The aim of this special volume is to bring these dispersed discussions together by organizing a collection of articles about the structures of conscious experiences and the roles that structure ought to play in consciousness research. The goal is to set a foundation and an agenda for a structuralist research program in the science of consciousness.

⁴ Bayne (2000), Lee, G (2014), Schechter (2018), Watzl (2018), Roelofs (2019), Wiese (2022), Chuard (forth), Fazekas (forth).

⁵ Van Rullen & Koch (2003), Dainton (2006, 2014), Rashbrook (2013), Lee, G (2014), White (2018).

⁶ Churchland (2005), Yoshimi (2007), Chalmers (2012), Macpherson (2015), Doerig et al (2019), Haun & Tononi (2019), Lyre (2022), Ellia et al (2021), Kleiner & Hoel (2021), Lee, A (2019, 2022), Kob (2023).

⁷ Bayne (2007), Yoshimi (2011), Isaac (2013), Zaidi et al (2013), Loorits (2014, 2018), Fink, Kob, & Lyre (2020), Klein, Hohwy, & Bayne (2020), Malach (2021).

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