
Steps Toward a Neurophenomenology of Conscious Sleep

A Reply to Jennifer M. Windt

Evan Thompson

Windt's groundbreaking commentary expands and enriches my target article by presenting new considerations against the default neuroscience view that "consciousness is that which disappears in dreamless sleep," by proposing a refined conceptual and phenomenological analysis of dreamless sleep experience, and by offering a refined taxonomy of dreamless sleep experiences. These contributions provide new conceptual and methodological tools for the neurophenomenology of sleep and consciousness.

Keywords

Consciousness | Dreamless sleep | Neurophenomenology | Phenomenal selfhood | Self | Time consciousness | Vedānta | Yoga

Author

[Evan Thompson](#)

evan.thompson@ubc.ca

University of British Columbia
Vancouver, BC, Canada

Commentator

[Jennifer M. Windt](#)

jennifer.windt@monash.edu

Monash University
Melbourne, Australia

Editors

[Thomas Metzinger](#)

metzinger@uni-mainz.de

Johannes Gutenberg-Universität
Mainz, Germany

[Jennifer M. Windt](#)

jennifer.windt@monash.edu

Monash University
Melbourne, Australia

1 Introduction

I would like to begin by thanking Jennifer Windt for her outstanding, constructive commentary ([Windt 2015b](#), this collection) on my target article ([Thompson 2015a](#), this collection), and by expressing my great admiration for her rich discussion, which goes well beyond being a commentary and instead amounts to an original and substantive article in its own right. It is especially gratifying to see the ideas and arguments that I presented be refined and advanced in such a creative and precise way. Indeed, given the wealth of new material that she presents,

her paper calls not so much for a reply as for a commentary of its own. Such a task, however, is beyond the scope of this short reply. Instead, I wish to highlight the advances that Windt makes, so that new experimental research can begin in this area.

The main aims of my target article were (i) to use debates about sleep from classical Indian philosophy to call into question the "default view" in cognitive neuroscience that "consciousness is that which disappears in dreamless sleep," (ii) to suggest instead that there may be

states or phases of dreamless sleep in which consciousness is present, (iii) to argue that sleep science accordingly needs a more refined neurophenomenological taxonomy of sleep states, and (iv) to demonstrate how contemplative methods of mind training provide important resources for the neurophenomenology of sleep and consciousness.

Windt's commentary advances each of these four aims in substantive ways, as I will describe in the following sections.

2 Indian philosophy and sleep science

After answering several possible challenges to my arguments against the default view (see Section 1 of her commentary), Windt shows that the Indian philosophical debate (in which the Yoga and Vedānta schools argue that consciousness persists throughout dreamless sleep, whereas the Nyāya school denies this claim) parallels in certain key respects the Western philosophical and scientific debates about the trustworthiness of dream reports. Given that sleep science must assume as a methodological criterion of dream research that retrospective reports of dreaming and nondreaming are trustworthy (given ideal reporting conditions), we must similarly assume that retrospective reports of the presence or the absence of experience in dreamless sleep are also trustworthy (again, given ideal reporting conditions). This requirement in turn implies that we must refine the conceptual typology of retrospective reports upon awakening from sleep. In Windt's (2015b, p. 11) words, "reports of nondreaming should be further qualified: reporting the absence of experience is not the same as reporting dreamless sleep experience. The former is an instance of reporting an absence of experience, the latter is an instance of reporting a form of experience characterized by the absence of intentional objects; but it is still an experience report." I will not review the steps of her analysis of the methodological requirements of sleep and dream science in detail (see Section 2 of her commentary), but the upshot is that the default view turns out to be inconsistent with the methodological background assumptions of scientific

sleep and dream research. This conclusion strengthens the case against the default view, for whereas I argue that this view is likely to be empirically false, Windt shows that it is inconsistent with the methodological requirements for scientifically investigating the presence and absence of consciousness in sleep.

3 The phenomenology of dreamless sleep experience

Windt's second contribution is to propose a conceptual and phenomenological model of dreamless sleep experience (see Section 3 of her commentary). Starting from my presentation of the Indian conception of dreamless sleep experience as characterized by a feeling of peacefulness and the dissolution of the subject-object duality, as well as my comparison of this conception with Husserl's conception of pre-reflective and pre-egological retentional time consciousness (see Thompson 2007), Windt proposes that dreamless sleep experience is a candidate for minimal phenomenal experience, one characterized only by the phenomenal "now" and a sense of duration, but having no further intentional content. So described, dreamless sleep experience would qualify as the simplest form in which a state can be phenomenally conscious, namely, as minimal phenomenal temporality.

I find this analysis very promising, though two issues require further analysis. The first concerns whether such a minimal phenomenal experience counts as "selfless." Windt proposes that it does, because minimal phenomenal selfhood requires some sense of spatial self-location, whereas dreamless sleep experience consists only in a minimal sense of temporal self-location—not, of course, in the sense of mental time travel (retrospection and propection), but rather in the sense of a bare feeling of existing "now," with a minimal feeling of flow or duration. Nevertheless, both Advaita Vedānta and Husserl would take issue with this conception of a phenomenal state as "selfless." As I describe in my target article, Advaita Vedānta describes dreamless sleep experience as a state in which the true nature of the self as non-intentional, re-

flexive consciousness is more apparent than in the ordinary waking and dreaming states. For his part, Husserl also describes the pre-egological retentional time consciousness as a minimal structure of self-experience (see [Zahavi 2005](#); [Thompson 2007](#)). It may be that this issue is in part terminological, but there are also likely to be deeper conceptual disagreements about how to analyze the notion of self—whether this notion can be applied to the reflexivity of passive retention (Husserl) or the reflexivity of pure awareness (Vedānta), or whether such states do not meet the criteria for minimal phenomenal selfhood.

Second, and relatedly, I proposed in my target article that, from a Western phenomenological and cognitive scientific perspective, dreamless sleep experience might be describable as a minimal mode of sentience consisting in the feeling of being alive. My point in describing the experience this way was to call attention to the possibly minimal sense of embodiment present in the state. Windt's proposal raises the question of whether even this minimal sense of embodiment may drop away in dreamless sleep, leaving only a bare phenomenal sense of "now." One way to address this question would be to determine whether there can be such a minimal phenomenal temporality in sleep with no affective character, given that one might take the presence of an affective phenomenal character to imply some felt sense of embodiment (assuming that there is a constitutive relation between affect and felt embodiment).

4 The neurophenomenology of sleep states

Windt usefully enlarges the concept of dreamless sleep experience to include a variety of different dreamless sleep states (see Section 4 of her commentary). These states include lucid dreamless sleep (especially the experiential transition from lucid dreaming to lucid dreamless sleep), a possible subclass of white dreams (in which individuals describe the impression of having dreamed but are unable to describe the dream in any detail), subjective insomnia (in which some individuals may maintain pre-re-

flective awareness of their ongoing sleep state while mistakenly conceptualizing their state as wakefulness), in addition to the contemplative practices of lucid dreamless sleep that I describe. Windt's taxonomy is groundbreaking and opens many new avenues for the experimental neurophenomenology of sleep. This is exactly the kind of work I envisioned when I suggested that we need a more fine-grained and phenomenologically informed taxonomy of sleep states.

5 Contemplative sleep states

In my target article, I called attention to the importance of meditative practices of dream yoga and lucid dreamless sleep, because they are closely connected to the Advaita Vedānta, Yoga, and Indian Buddhist conceptions of dreamless sleep, and have begun to be investigated by cognitive neuroscientists (see [Thompson 2015b](#) for further discussion). I agree with Windt that these practices may be too remote from other kinds of sleep experiences in order to justify a wholesale revision of the standard taxonomy of sleep states. For this reason, it is important to place these meditative sleep states within a wider taxonomy that includes other kinds of sleep states, specifically the dreamless sleep states that Windt details. In this way, the meditative practices and their effects on sleep can be integrated into the rest of sleep science. Windt's article provides an excellent framework to this end.

6 Conclusion

Windt's commentary goes far beyond mere commentary in offering new arguments against the default neuroscience view that consciousness is that which disappears in dreamless sleep, by providing a refined conceptual proposal about the phenomenal structure of dreamless sleep experience, and by presenting a new taxonomy of dreamless sleep states and experiences. Thanks to her commentary, sleep science and the neuroscience of consciousness have new conceptual and methodological tools for refining the investigation of consciousness during sleep (see also [Windt 2015a](#)).

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