How to foster challenging interdisciplinary collaborations: can philosophy support neuroscientists?

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Abstract

New conceptual and technological developments bring neuroscientists closer to other disciplines, and to other fields in neuroscience with different traditions, despite having overlapping interests. While some neuroscientists may underrate the potential benefits of successful interdisciplinary collaborations, some may be unaware of the typical difficulties of such collaborations or not trained in skills that render them fruitful. Here, we illustrate how interdisciplinary interactions have long been part of neuroscience, although they are often challenging, because neuroscientists may be confronted with concepts, assumptions, and interpretative horizons that differ from their own. This can lead to misunderstanding and little mutual appreciation. Using the historical development of brain imaging techniques, we distinguish different types of interdisciplinary interactions and illustrate some of their benefits. In addition, we present challenges at the interface between traditional laboratory-type approaches and those of clinical or computational neuroscience, and of ecological field experiments. To address these, we invite neuroscientists to consider philosophers as collaboration partners with complementary expertise, which includes special consideration of language use, underlying assumptions and proficiency in conceptual analysis. This expertise can be used by neuroscientists to increase their understanding and to address some difficulties in interdisciplinary interactions more effectively. The benefits of these interactions can be expected to outweigh some challenges in the dialogue with philosophers. Importantly, neuroscientists can choose between reading philosophical literature, participating in joint events with philosophers, and integrating philosophers into neuroscience projects. This may allow neuroscientists to explore unforeseen possibilities to improve or initiate collaborations with scientists from other fields and disciplines.

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