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Reply to the letter to the Editor

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Dear Editor,

We appreciate the concerns of Drs. Maldonado, Smirnov, and Destrieux about our review article "*Hodology of the superior longitudinal system of the human brain: a historical perspective, the current controversies, and a proposal*" (Vavassori et al., 2021).
We agree that we need further investigations on the white matter association systems' multilayer architecture, which we described as a palisading topographical arrangement, to benefit from more detailed descriptions of the cortical terminations.
The first step has been indeed reached with the distinction between sulcal and gyral areas integrated into parcellation atlases with the use of cortical meshes (Destrieux et al., 2010).
A second step is interestingly emerging in the field of diffusion tractography by using mesh surfaces for streamline termination (St-Onge et al., 2018, 2021). It improves cortical coverage and reduces the gyral bias from tractography end-points. It is crucial to benefit from an accurate representation of the streamline terminations in each gyral and sulcal location.
In the field of dissection, the improvement of the classical Klingler approach, the so-called cortex-sparing Klingler dissection (Martino et al., 2011; Sarubbo et al., 2016; Hau et al., 2017), allows a detailed description of cortical terminations in every gyral and sulcal part of the cortex.
Our review article aims to make some order in a growing and confusing literature about the superior longitudinal system and propose a new interpretation of the white matter association organization. However, it is a minimal background to evolve to understand better the white matter association pathways in the human brain. We, therefore, join Drs. Maldonado, Smirnov, and Destrieux considering that the history of the hodology of the superior longitudinal system is still ongoing, including its nomenclature issue.

Laurent Petit, Laura Vavassori, Silvio Sarubbo

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