
Title: Neurophysiology, Neurophilosophy and their Ethical Dimension



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(Guest Editor)

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Proposal

The human neocortex, resp. thalamo-cortical circuits being essential for mental abilities like decision making, body awareness, associative learning etc., and consciousness, is a widely held assumption.

Nevertheless individuals without cerebral cortex, with so-called hydranencephaly, under thorough observation show behavioral traits that justify the notion that consciousness is neither obviously nor necessarily a cortical function. A mesodiencephalic group of structures, including the medial reticular formation of the brainstem, the superior colliculus and the zona incerta have been considered to be integral to the constitution of the conscious state, and the latter can exist without cortical function.

This has major ethical and clinical implications for the medical care of individuals with severe and widespread cortical damages.

Subtopics

1. Contribution of mesodiencephalic structures to consciousness
 2. Mental capacities in congenitally decorticate individuals
 3. Ontogeny of pain processing
 4. Pain perception and pain behavior in persons without cerebral cortex
 5. Assistive communication devices for children and adults with early acquired, extensive cortical damages
 6. Sensory assessment for patients without cerebral cortex
 7. Ethical aspects of medical care in individuals with hydranencephaly or severe cortical malformation
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