This special section stems from the activities of a project developed through a funding from the Italian Ministry for Health. Such a project (2010-2012), aimed at revising the current nosography of vegetative states through the application of innovative behavioural analysis methods. The core of the project was an attempt to integrate the current methodologies, developed in the field of psychobiology, with those adopted in clinical settings involved in the care and cure of patients with disorders of consciousness.

At the beginning of this endeavour we were persuaded that our knowledge would complement the expertise of eminent colleagues approaching the same medical condition from a rather different perspective. By the same token, we were persuaded that disorders of consciousness constitute a very special form of medical condition: a form that, beside physical treatments, entails fundamental philosophical and ethical considerations. Whilst philosophical aspects dealing with the fine line between “life” and “death” fell beyond our reach, we deemed ethical considerations worth of being addressed within the actual scopes of the Istituto Superiore di Sanità (ISS, Italian National Institute of Health). Ethical aspects in such project encompass numerous facets: from the legal requirements that shall be met while performing any experimental study involving subjects incapable of providing informed consent. They also discuss the extent to which inappropriate diagnostic tools, in this special field, may increase the odds of misdiagnosis and, in turn, generate primary ethical issues. Drifting towards medical and technical aspects, Giuliano Dolce and colleagues first discuss the nosographical behavioural categories adopted to categorize different states of consciousness, and then describe the most recent advancements in the neuromodulation of patients presenting with severe disorders of consciousness. Finally, Bonsignore and colleagues describe a study aimed at combining technology-based tools with innovative behavioural observations in the description of different states of consciousness.

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