

Brain Function and Responsiveness in Disorders of Consciousness

Martin M. Monti • Walter G. Sannita
Editors

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 Springer

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Preface

Over the past 20 years, functional neuroimaging has revealed that even the severely injured brain suffering from a disorder of consciousness can retain several aspects of relatively high-level functions, including sensory and linguistic processing and learning dynamics. In 2006, a provocative report presented the case of a subject in vegetative state who appeared able to voluntarily engage in mental tasks as revealed by her pattern of brain activations.

As widely reported as these neuroimaging studies have been, the interpretation of regional brain activations in the vegetative state remains highly debated. These observations nevertheless challenge the current definitions and our understanding of both responsiveness and consciousness after severe brain injury, with an impact in the clinical decision-making process. It is unclear the extent to which regional brain activations can be considered equivalent to behavioral responses in indicating consciousness. The very clinical standards by which patients surviving severe brain injury are judged as being conscious or unconscious have been called into question. In this respect, scientific research has somehow added a conceptual and professional burden to the clinician by introducing novel criteria of evaluation not yet fully integrated in the current nosography of disorders of consciousness, which is now undergoing a tacit, but not uncontroversial, revision.

This multiauthored book is aimed at reviewing the scientific evidence available to date and the current different points of view in the field. Its task is to provide neuroscientists and clinicians (as well as ethicists, philosophers, and lawyers) with tools to incorporate the recent scientific advances in the understanding of disorders of consciousness.

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