Preface

Uncovering Consciousness

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The past two decades have been a time of rapid progress in detecting and predicting recovery of consciousness in patients with severe brain injuries. New behavioral, neuroimaging, and electrophysiological assessment techniques have begun to reveal signs of consciousness in patients previously believed to be unresponsive. Longitudinal outcome studies have led to a reconceptualization of the natural history of recovery, with late reemergence of consciousness now clearly documented and the term "permanent" abandoned for patients in a vegetative state/unresponsive wakefulness syndrome. Comprehensive behavioral assessment tools like the Coma Recovery Scale-Revised have facilitated stratification of the minimally conscious state (MCS) into MCS+ and MCS −, while also providing a more granular classification of patient endotypes. Additional studies have revealed new behavioral signs of consciousness and evidence of language processing in patients with disorders of consciousness.

Concurrently, advanced neuroimaging and electrophysiological techniques have revealed covert consciousness, preserved brain network connectivity, intact metabolism, presence of sleep patterns, and high levels of brain network complexity in patients who were previously believed to be in a vegetative state/unresponsive wakefulness syndrome. The profound insights into patients' states of consciousness generated by these techniques have led to the creation of new diagnostic categories, such as cognitive motor dissociation (i.e., covert consciousness), as well as new ethical debates about resource allocation and access to advanced technologies.

As evidence mounts for the diagnostic and prognostic relevance of cognitive motor dissociation, advanced tools once believed to be solely within the investigational domain are now moving toward clinical translation. These developments culminated in the endorsement of advanced neuroimaging and electrophysiological techniques in clinical guidelines published in 2018 and 2020 in the United States and Europe, respectively. Building on this rapid progress, in 2019 the Neurocritical Care Society launched the Curing Coma Campaign, which has galvanized the international community in an effort to improve acute care and long-term outcomes for patients with disorders of consciousness.

It is against this historical backdrop that the Special Issue on Disorders of Consciousness was commissioned by *Seminars in Neurology*. We have had the honor and privilege of collaborating with a diverse international team of leaders who have contributed review articles that summarize the state of the science in this field and provide a vision for future progress. These authors represent a global community of investigators and clinicians from nine countries in North America, Europe, and Asia. We are grateful for their time, effort, and expertise, and we believe that they have provided both newcomers and experts alike with a valuable resource for clarifying where we are and where we are heading.

As we look to the future, we are inspired by the international collaborations being spearheaded by the Curing Coma Campaign, International Brain Injury Association, European Academy of Neurology, Association for the Scientific Study of Consciousness, Human Connectome Project, Human Brain Project, and many others. We are also encouraged by recent progress in developing pharmacologic and device-based therapies to promote recovery of consciousness. We anticipate that the next two decades will bring far more treatment modalities to "cure coma" than are currently available today. This Special Issue of *Seminars in Neurology* thus represents one of many milestones in a decades-long effort to improve the lives of patients with disorders of consciousness and their families.

Conflict of Interest
None declared.

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