

## LETTER TO THE EDITOR

### Response to ‘Minimally conscious state or cortically mediated state?’

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Sir,

In a recent review ‘Minimally conscious state or cortically mediated state?’ Naccache argues that the minimally conscious state (MCS) should be relabelled the ‘cortically mediated state (CMS)’ (Naccache, 2017). Naccache motivates this change of nomenclature by arguing that the criteria associated with the MCS ‘do not inform us about the potential residual consciousness of patients, but they do inform us with certainty about the presence of a cortically mediated state’. We begin by addressing Naccache’s positive proposal before turning to his criticisms of the MCS.

Naccache is certainly right to claim that the MCS criteria do inform us with certainty about the presence of a CMS. However, this fact alone does not justify the rebranding exercise that he recommends. (After all, the criteria associated with the MCS also inform us with certainty that the patient is still alive, but no-one would suggest that the MCS should be relabelled the ‘Still Alive State’.) Further, there are two very good reasons for not adopting Naccache’s proposed new label.

First, this label fails to preserve the distinction between MCS patients and patients who have ‘emerged’ or ‘exited’ from the MCS (EMCS), for the behaviours associated with EMCS patients are also cortically mediated. Indeed, Naccache’s proposal threatens to elide the contrast between MCS patients and neurotypical individuals.

Second, Naccache’s proposed terminology fails to engage with the concerns of families and caregivers in the way that the current terminology does. Care-givers and family members are not interested in whether the patient’s behaviours are cortically mediated; instead, they want to know whether these behaviours are accompanied by experiences (and if so, what those experiences are like). They want to

know whether the patient is ‘minimally conscious’, or whether s/he is ‘merely vegetative’ and lacks any capacity for consciousness. The diagnostic categories that we use in this domain ought to engage with these concerns rather than avoid them (as Naccache’s proposed categories do). The fact that clinicians might describe a patient as being in a ‘cortically mediated state’ is unlikely to dissuade family members from asking whether s/he is conscious.

We turn now to Naccache’s claim that the criteria currently associated with the MCS ‘do not inform us about the potential residual consciousness of patients’. At the heart of Naccache’s worry is what he refers to as the ‘paradoxical’ practice of attempting to infer consciousness in patients who are unable to report their experiences. Naccache regards this practice as ‘paradoxical’ because he thinks that consciousness can be ‘defined’ as the ability to self-report. But there is no genuine paradox here at all. Theorists are obviously at liberty to define ‘consciousness’ as they wish, but definitions of ‘consciousness’ are of interest only insofar as they capture our pre-theoretical conception of consciousness. It is evident that we have a concept of consciousness that is not defined in terms of the capacity for subjective report, for it is an open question whether infants, brain-damaged patients and non-human animals have unreportable experiences. (If consciousness were defined in terms of reportability then this would not be an open question.)

Naccache also claims that the reportability definition of consciousness is ‘very close’ to the neurological definition of consciousness provided by Plum and Posner (1972): ‘Consciousness means awareness of self and environment’. However, awareness and reportability should be sharply distinguished. A lioness might be aware of the prey that she is stalking, but she presumably lacks the capacity to

report either the presence of her prey or her awareness of it. Similarly, it is now very clear that certain brain damaged patients are aware of themselves and/or features of their environment (Owen *et al.*, 2006; Naci *et al.*, 2014), but lack the capacity to produce reports corresponding to the contents of their awareness, even through neuroimaging (Monti *et al.*, 2010). Once the distinction between consciousness and reportability is appreciated, the sense of paradox that might be thought to attach to the MCS' label dissipates. However, there are still serious questions surrounding the criteria associated with the MCS that need to be addressed.

As has often been noted, there are open questions about whether the criteria that demarcate the border between MCS and vegetative state (VS) accurately track the contrast between the capacity for consciousness and the lack of such a capacity. The status of visual fixation and pursuit is particularly problematic here, given that there are unresolved questions about the kinds of fixation and pursuit that index consciousness (Cruse *et al.*, 2017). Here, we would echo Naccache's call that the clinical schedules for the assessment of consciousness should be informed by what we are learning about the relationship between behaviour and consciousness; indeed, we have been making such calls for some time now (Shea and Bayne, 2010). We would also argue that the time has come to consider introducing neural markers into these assessment schedules. Note, however, that all of these points presuppose that the contrast between VS patients and MCS patients is, most fundamentally, a distinction between patients who have a standing capacity for consciousness and patients who lack such a capacity.

Finally, we would note that although Naccache proposes to rebrand the MCS in a fairly radical way, his taxonomy

itself is conservative in that it involves just two central categories (VS and MCS/CMS). Elsewhere (Bayne *et al.*, 2017), we have argued that a radical overhaul of the entire taxonomy of disorders of consciousness (DoC) ought to be considered, and that patients would benefit from the development of a more fine-grained taxonomy that allows for multiple categories. In sum, we agree with Naccache's claim that the current DoC taxonomy is in need of reform, but we have a rather different vision of what that reform might involve.

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