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Since identification of command-following is so crucial for diagnosis and care of patients in vegetative and minimally conscious states, the importance of thoroughly vetted, transparent methods cannot be overstated.

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4 Goldfine AM, Victor JD, Conte MM, Bardin JC, Schiff ND. Determination of awareness in patients with severe brain injury using EEG power spectral analysis. *Clin Neurophysiol* 2011; **122:** 2157–68.
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Authors' reply

Andrew Goldfine and colleagues make three comments about our paper. First, they imply that we do not use "power" as features in our analyses. In the Methods section[1] we clearly stated that we used power values as features, in line with many published studies on motor imagery and the contemporary brain–computer interface.

Second, they argue that an unspecified factor could have covaried in time with our randomly varying task structure, leading to reliable, yet erroneous, classification. In fact, randomisation is used in task design specifically to preclude conditions under which such covariation could occur. Indeed, in our paper we report data from healthy controls who were asked simply to listen to the same task instructions and "mind-wander", rather than complete the imagery tasks. As we reported, no positive EEG outcomes occurred under these conditions. By contrast, 75% of these participants were able to return significantly classifiable EEG data when actually following the commands. In short, the data show that random EEG fluctuations (by any known or unknown variable) were not sufficient to return a single, significant classification.

Third, Goldfine and colleagues argue, reasonably, that a 500 ms baseline might be insufficient for comparison with an action period of 3 s. Accordingly, we have rerun our analyses, comparing the 500-ms-wide "baseline" time window before the tone (–500 ms to 0 ms) with an equal-sized time window beginning 1 s after the tone (ie, far beyond any possible "stimulus-linked startle", of the sort described by Goldfine and colleagues[2]). That is to say, exactly the same number of band-power values are entered into the analyses at pre-tone and post-tone time-points. The results were unchanged; as we reported in the paper, the same three patients in the vegetative state returned significant classification values in the post-tone window, but non-significant classification values in the pre-tone window—confirming that they were, indeed, following commands.

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1 Cruse D, Chennu S, Chatelle C, et al. Bedside detection of awareness in the vegetative state: a cohort study. *Lancet* 2011; **378:** 2088–94.
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Disorders of consciousness are at a historic epistemological junction: those who think like Damian Cruse and colleagues[1] continue to search within the vegetative state for evidence of misdiagnosis. However, we believe that, when a pathological state presents itself, we must research its treatment and prognosis rather than striving to search for a different diagnosis. To try to disprove the diagnosis of the vegetative state is like appearing during a liver transplant with evidence that the diseased liver in reality still works, albeit only partly. Cruse and colleagues persist in the assertion that many diagnoses are wrong and that the incidence of vegetative state is overestimated compared with minimally conscious state. For us, this is the obvious natural consequence of the fact that differences between vegetative and minimally conscious states have not yet been categorised in many of the protocols for diagnosis and treatment used by health systems worldwide.

Finding unexpected signs of consciousness simply means changing the diagnosis from vegetative state to locked-in syndrome. It means that consciousness was not evident on clinical examination, but has come to light through paraclinical testing. In our view, the most sensible thing to do is to approach disorders of consciousness as neurologists rather than instrumentalists and to develop reliable prognostic methods, validated on cohorts of an ever-increasing number of patients.[2] We must also acknowledge the overlap between locked-in syndrome and vegetative state: a necessity which we have emphasised on many occasions.[3,4]