Published in final edited form as:

Epilepsia. 2015 March ; 56(3): 345–347. doi:10.1111/epi.12922.

Commentary: The return of consciousness to epilepsy seizure classification

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Keywords

Epilepsy; Consciousness; Complex partial seizures; Simple partial seizures; Dyscognitive seizures; Classification

No one has ever seriously questioned the importance of consciousness in epilepsy. What remains controversial, however, is the best choice of terms to describe impaired consciousness in seizures. The International League Against Epilepsy (ILAE) 2010 commission report on seizure classification pointed out important deficiencies in the existing terminology and potential challenges in defining consciousness precisely.¹ Although valuable in many aspects, the ILAE recommendations did not include a practical way for clinicians to communicate about the obviously crucial distinction between seizures that impair consciousness and those that do not. Meanwhile, recent scientific and clinical work has greatly enhanced our fundamental understanding of the mechanisms causing loss of consciousness in seizures.^{2–8} In addition, it was found that even in focal seizures—formerly thought to have many gradations of impaired consciousness potentially making definition difficult—severity of impairment is actually bimodally distributed, making determination of consciousness relatively clear in most cases.⁹

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Disclosure of Conflicts of Interest

Dr. Meador's university receives support for his research consultant time related to Eisai, GW Pharmaceuticals, Novartis, Supernus, Upsher Smith Laboratories, and UCB Pharma. The remaining authors have no conflicts of interest to disclose. We confirm that we have read the Journal's position on issues involved in ethical publication and affirm that this report is consistent with those guidelines.

A recent set of articles in the Controversy in Epilepsy series from *Epilepsia* reexamined whether consciousness should be used in epilepsy classification, and if so how.^{10,11} The editors have taken an additional step by conducting a survey of *Epilepsia* readership, asking whether consciousness should be used to describe seizures, and what are the best terms.¹²

The survey provides several interesting results. Most importantly, 77% of responders felt that consciousness should be included. Even with limitations in group size and sampling restricted mainly to readers of *Epilepsia*, the result is striking enough to seriously call into question efforts to remove consciousness from epilepsy classification. The ILAE Commission should take careful note of this result and proceed with the knowledge that epileptologists and neurologists (who made up most of responders) firmly believe that consciousness is valuable in classifying seizures.

Thus, the real question is what terms to use in describing impaired consciousness, particularly in focal seizures where the greatest variability in deficits occurs. The ILAE Commission report provides an excellent and precise set of terms: “focal seizures with impaired consciousness or awareness,” versus “focal seizures without impairment of consciousness or awareness.”¹ We recently proposed abbreviated forms of these terms: “focal impaired consciousness seizures (FICS)” versus “focal aware conscious seizures (FACS).”¹³ Other possibilities include focal dyscognitive seizures versus focal nondyscognitive seizures¹⁴ or complex partial versus simple partial seizures.¹⁵ However, these latter terms have significant problems, including the nonequivalence of impaired consciousness and impaired cognition, as well as other limitations discussed previously.^{1,10,13}

Although the survey conducted by Mathern et al.¹² through *Epilepsia* strongly comes down in favor of using consciousness in the classification, it does not reach a strong conclusion about which terms are best for this purpose. Of interest, focal dyscognitive seizures was least popular of all, supported by only 16% of responders, whereas complex partial seizures and FICS were nearly tied at 30% and 36%, respectively. This finding is encouraging given the newness and unfamiliarity of FICS as a proposed name.¹³

The survey suggests that more work is needed to decide on the best terms that include consciousness in the classification of focal seizures. The term “dyscognitive,” despite being around for some time, garnered only 16% support and has inherent problems as noted earlier, so should be abandoned. Complex partial is a familiar term for epileptologists and neurologists, but continued use of this term would not be progress and is confusing to nonspecialists. Many possible new terms or acronyms could be proposed, but it seems FICS is, at least, a good candidate.

Rather than looking to epileptologists for guidance, we might also turn to nonspecialists and health care providers early in their training to assess terminology that is acceptable and easily understood. To begin pursuing this goal, we conducted an additional brief survey of first- and second-year medical students. We presented the same question used in the *Epilepsia* survey (Fig. 1). Two slides, with the second one including the question, were presented without introduction to all students attending classes on unrelated topics (first-year

medical school lecture on lower extremity anatomy; second-year medical school lecture on diabetes). Students registered their choices by show of hands, and tallies were recorded by concordance of two observers, one unconnected to this survey.

All students attending the lectures were asked to participate, with a 100% response rate for 81 total students. Thus, although the group size was relatively small, sampling bias of the study participants was avoided. The students overall preferred the new term FICS over the other two options offered (Table 1). Of interest, first-year medical students, most of whom were not familiar with the traditional terminology, voted overwhelmingly against complex partial seizures, but by the second year, they were nearly evenly split between complex partial and focal dyscognitive seizures— both less-favored choices behind FICS (Table 1).

In summary, there are many good reasons to return consciousness to the lexicon of seizure classification. Clinicians are solidly behind keeping consciousness in use for practical purposes including decisions about epilepsy severity and safety or legal issues such as driving privileges. Recent scientific advances have made the mechanisms and definition of impaired consciousness in epilepsy more clear than ever. There are some patients for whom loss of consciousness is uncertain, but clinicians still need to address this issue in the context of driving and safety. Even in the face of any remaining definitional challenges of impaired consciousness, the presence/impairment of consciousness is decided by the clinician in the large majority of cases. Clear, simple terms are needed to ensure effective communication about impaired consciousness in epilepsy and so to provide the best possible clinical care.

Acknowledgments

Dr. Blumenfeld receives support from National Institutes of Health (NIH) National Institute of Neurological Disorders and Stroke (NINDS) R01 NS055829, R01 NS066974, R21 NS083783, R01 MH67528, P30 NS052519, U01NS045911, Clinical and Translational Science Award (CTSA) UL1 RR0249139, the Swebilus Trust, The Loughridge Williams Foundation, and the Betsy and Jonathan Blattmachr family. Dr. Meador receives support from NIH 2 U01 NS038455-13, 3 U01 NS038455-13S1, 1 R01 NS076665-01, Patient-Centered Outcomes Research Institute (PCORI) 527, the Human Epilepsy Project, and the Epilepsy Study Consortium. Dr. Jackson receives support from a practitioner fellowship grant from the National Health and Medical Research Council of Australia.

Biography

Dr. Hal Blumenfeld is Professor of Neurology, Neurobiology and Neurosurgery and Director of the Clinical Neuroscience Imaging Center (CNIC) at Yale School of Medicine.

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SLIDE 1:

As medical students your opinion is valuable.

The International League Against Epilepsy (ILAE) and the journal *Epilepsia* recently conducted a poll as part of its Controversies in Epilepsy Series which included the following question. Please choose only one answer.

SLIDE 2:

Focal seizures with altered awareness and amnesia should be termed:

- A) Focal dyscognitive seizures
- B) Complex parial seizures
- C) Focal impaired consciousness seizures (FICS)
- D) Any of the above

Figure 1.
Slides presented to medical students during poll.
Epilepsia ©ILAE

Table 1
Responses of first- and second-year medical students to poll

	First-year medical students (n = 43)	Second-year medical students (n = 38)	Total (n = 81)
Focal dyscognitive seizures, %	42	18	31
Complex partial seizures, %	2	21	11
Focal impaired consciousness seizures (FICS), %	51	55	53
Any of the above, %	5	5	5