Reviewer's report

Title: Performance on the Frontal Assessment Battery is sensitive to frontal lobe damage in stroke patients

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Reviewer: Eric Guedj

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The authors used voxel-based lesion-behavior mapping to determine the sensitivity of performance on the FAB to frontal lobe damage in right-hemisphere-damaged first-ever stroke patients.

The report is original, and potentially interesting. I am however, at this step, not convinced by the significance of their findings, regarding the very little clusters found (probably one or some voxels), and mainly located in the white matter (Fig 3A and 3B). The authors have to carefully detail the statistical approach used to determine the significance of their results and to limit the risk of false-positive related to multiple comparisons (what does the Liebermeister test evaluate ? what are Lz and Zcrit ? how does "permutation-based thresholding using 4000 iterations" control false-positive risk ? ...)

Other comments:
- The authors claim that "the anatomical correlation between FAB scores and frontal lobe damage has never been established", in the Introduction. This assertion is false; themselves mentioned in the Discussion three SPECT studies that have showed relationship between FAB performance and brain perfusion.
- The authors showed only findings of three of the 6 FAB tasks. They should clearly mention negative results
- Table 3 is missing

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.