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Dejerine’s reading area revisited with intracranial EEG

Selective responses to letter strings

The visual word form area in the ventral occipitotemporal cortex develops with acquisition of reading skills. It is debated whether this region is specialized for reading or is rather a general-purpose area associating visual form (words, objects) with meaning. An outline of this debate can be found in appendix e-1 on the Neurology® Web site at www.neurology.org. We recorded intracranial EEG in 2 patients with epilepsy (figures 1, e-1, and e-2).
and found neural populations responding almost exclusively to letter strings, over 500% of all other responses. With the exception of the fusiform face area, such specific responses have never been described before in the human visual system. Strong specialization in the human brain can thus be achieved also through cultural learning.

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Author contributions: J.P.L. and J.R.V. designed the experiment. M.P.-B. and J.R.V. performed the experiment with additional help from C.M.H., J.P.L., P.K., and O.B. C.M.H. analyzed the iEEG data and M. Sharman analyzed the MRI data. M. Szwed wrote the paper with additional contributions from C.M.H. and J.P.L.

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