

Functional MRI provides insights into language organization of bilingual aphasia

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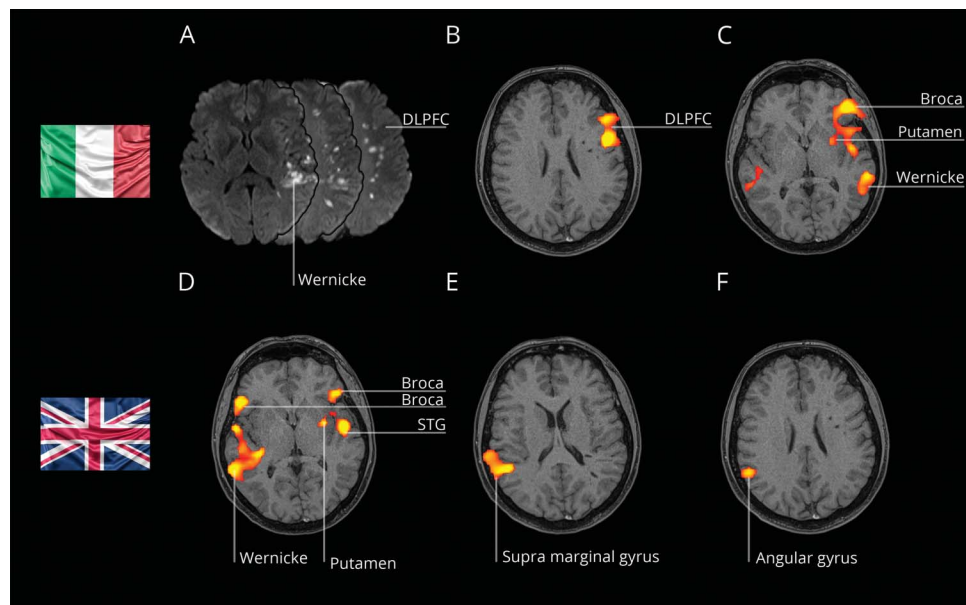
Neurology® 2019;93:1073-1074. doi:10.1212/WNL.0000000000008625

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An Italian 40-year-old right-handed woman, with late, consecutive, and balanced bilingualism (English), presented with comprehension aphasia of ischemic etiology (figure, A) in the primary language, but not in the second one. After a 3-month logopedic rehabilitation, speech–language improved dramatically. Later, fMRI was performed with task of verbal fluency–verb generation¹ on both languages. The Italian task showed activation of left Broca and Wernicke areas (figure, B and C), while prominent activation was evident on right superior temporal gyrus in the English task. Broca area was represented bilaterally (figure, D–F). The fMRI provides insights into language organization in bilingual patients.²

Figure Functional MRI



Scattered ischemic lesions on diffusion-weighted imaging (A) due to antiphospholipid syndrome. Task of verbal fluency–verb generation on the 2 languages with block paradigm and significant activation map (T-value 2–5) superimposed on T1 volumetric interpolated brain examination sequence (B–F). The fMRI also showed activation of left putamen, which may be interpreted as the “caudate/putamen” switch sign. DLPFC = dorsolateral prefrontal cortex; STG = superior temporal gyrus.

Study funding

No targeted funding reported.

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Go to Neurology.org/N for full disclosures. Funding information and disclosures deemed relevant by the authors, if any, are provided at the end of the article.

Disclosure

The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

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Name	Location	Role	Contribution
Nicola Morelli, MD	Neurology and Radiology Unit, Guglielmo da Saliceto Hospital, Piacenza, Italy	Author	Designed and conceptualized study, analyzed the data, drafted the manuscript for intellectual content
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Marco Spallazzi, MD	Department of Medicine and Surgery, Section of Neurology, Azienda Ospedaliero-Universitaria, Parma, Italy	Author	Designed and conceptualized study

Appendix (continued)

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Giuseppe Marchesi, MD	Radiology Unit, Guglielmo da Saliceto Hospital, Piacenza, Italy	Author	Analyzed the data
Donata Guidetti, MD	Neurology Unit, Guglielmo da Saliceto Hospital, Piacenza, Italy	Author	Revised the manuscript for intellectual content
Emanuele Michieletti, MD	Radiology Unit, Guglielmo da Saliceto Hospital, Piacenza, Italy	Author	Revised the manuscript for intellectual content

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This information is current as of December 9, 2019

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