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熟练蒙汉双语者语义加工脑机制的fMRI分析

Functional MRI analysis of semantics processing in skilled Mongolian-Chinese bilingual people

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英文关键词: [Visual semantic judgment](#) [Mongolian-Chinese bilingual](#) [Magnetic resonance imaging](#)

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中文摘要:

目的 探讨熟练蒙汉双语者在蒙语和汉语语义信息加工的脑机制。方法 对15右利手、蒙汉双语熟练的健康志愿者(男8名,女7名)进行fMRI测试,分析采用蒙语及汉语词语的语义判断任务。应用AFNI软件分析两种语言任务的脑功能激活情况及其差异。结果 在汉语及蒙语语义信息加工过程中,语义加工的经典脑区均被激活,包括左侧颞中回、左侧后顶叶、左侧前额叶区域。比较加工蒙语及汉语的语义信息过程,蒙语任务下左侧楔回及右侧梭状回的激活显著增加,汉语任务下在左侧颞中回后部、左侧颞中回及额下回三角部、左侧顶上小叶的脑激活比蒙语显著增加。结论 熟练蒙汉双语者在加工蒙语及汉语时,存在功能加工脑区的分离。fMRI研究能为双语者的语言加工脑机制提供影像学依据。

英文摘要:

Objective To explore the brain mechanism of the semantics processing in skilled Mongolian-Chinese bilingual people with fMRI. **Methods** Fifteen right-handed skilled Mongolian-Chinese bilingual healthy volunteers (male 8, female 7) underwent fMRI to judge visual words in Mongolian or Chinese. Localized functional areas of brain were analyzed in AFNI, and the difference was detected as w **Results** fMRI demonstrated the activation of left middle temporal gurus, left post-parietal lobe and left prefrontal lobe in the visual Chinese and Mongolian semantic tasks. Mongolian and Chinese semantic tasks were compared, and more activation in the left cuneus gyrus and right fusiform gyrus were found in the Mongolian tasks, while more activation in the left posterior temporal gyrus, the superior parietal lobe, the left middle frontal gyrus and the triangle par of the inferior frontal gyrus were found in the Chinese tasks. **Conclusion** The brain functional segregation of the semantics procc exits in skilled Mongolian-Chinese bilingual people. fMRI can provide imaging information for analysis of the brain mechanism of language processing in bilinguals.

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