

Language and modality specific brain regions (Abstract)

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“If I had an hour to solve a problem and my life depended on it I would use the first 55 minutes to formulate the right question because as soon as I have identified the right question I can solve the problem in less than five minutes”

- Albert Einstein -

Since the discovery of mirror neurons and Rizzolatti and Arbib’s influential paper “Language within our grasp” (1998) and Pulvermüller’s paper “Words in the brain’s language” (1999) ideas about embodiment and language processing have entered the cognitive neuroscience literature. The embodied view of language processing holds that brain structures, which traditionally has been seen to serve primary perceptual, emotional and motor processes are also recruited for comprehending language that refer to emotion, perception and action. A large number of empirical papers that provide clear evidence for language-induced activity in such “modal” brain structures have since been published. Yet, the role of this activity for behavior remains a matter of dispute. In particular, the recently accumulating evidence that for the same word-item such activity vary with linguistic and extra-linguistic context (Willems and Casasanto, 2011) and the fact that globally the patient literature rather

show that lesions in modality specific brain regions do not produce language deficits has led an increasing number of researchers to conclude that the recruitment of perceptual, emotional and motor structures during language processing is “optional” - and therefore not essential to the understanding of how we compute meaning from words. I will summarize the work that I did in collaboration with Anne Reboul that led to another conclusion.