
Cognitive task and brain activity: an uncertain correlation

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Abstract

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As in many other reductionist projects, neurons are thought to be an ideal candidate to explain once and forever how humans think, in nowadays terms, what cognition is. Under this scheme, cognition is explained as the result of what the brain does. When we ask to a neuroscientist what the brain does, he would unavoidably offer us a descriptive scenario where brain scanning is associated to the performance of a particular cognitive task. Nevertheless, the relationship between brain activity and an associated cognitive task is elusive, to say the least.

In this work, I would like to offer a general outlook of the difficulties faced when we seek to explain cognition based on neuroscientific evidence, the technical issues involved and the theoretical assumptions implied. I will provide an analysis laid out in terms of the Cognitive Modularity debate. A main characteristic of a modular cognitive system (already formulated in Fodor 1983) is that it is associated to brain structures. This claim can be understood in a strong, weak or minimal sense, depending on the level of commitment to brain structures. After clarifying these 3 different levels of commitment, I will propose that a main difficulty with these approaches to cognition is that there is not a clear distinction between a cognitive task failure in the general competence and a cognitive task failure due to performance factors.

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