

Measuring cognitive control: From the lab to everyday life

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Abstract: To study Cognitive Control, many computer-generated tasks based on Stimulus-Stimulus (Stroop) or Stimulus-Response (Simon) conflict has been designed where a controlled response is required while inhibiting automatic behaviour. Cognitive control can also be measured in the context of more ecological multistep everyday activities for example to avoid the use of distracting objects in the scene. The aim of this research was to test the relations between these two forms of measuring cognitive control (in experimental conflict tasks and in ecological everyday tasks) in both a group of frontal lobe patients and control participants. Frontal patients showed larger interference in all experimental conflict tasks and more commission errors in ADL in comparison to controls. In addition, S-R (Simon) type of conflict but not other S-S conflict types, was highly related to commission errors in ADL. We concluded that ADL commission errors are mainly due to difficulties to control prepotent actions towards irrelevant objects in the scene.