

Disentangling Cognitive Flexibility and its Role on Higher-Level Executive Functions in Physiologic Aging

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Over the past decades, the construct of cognitive flexibility (CF) has been defined in different ways. The multiplicity of definitions not only reflects its inherent complexity, but also presents a challenge in experimental assessment. The definition of CF is contingent upon the approach taken to its investigation and this renders difficult to establish a universally accepted definition. Some definitions of CF refer to it as a single construct, while others analyze it through its components. Conversely, some authors analyze CF in relation to other executive functions (EFs). Cognitive Flexibility, like other EFs (i.e., planning and fluid intelligence), remains stable throughout adulthood and begins to gradually decline with age.

The aims of this study is to examine the relationship between cognitive flexibility and higher-level EFs (planning and fluid intelligence) in physiological aging, with the following goals: (i) defining the components of CF; (ii) evaluating the role of global functioning in mediating the relationship between CF components and higher-level EFs; (iii) assessing whether these components predict higher-level EFs; and (iv) evaluating whether these components are able to predict higher-level EFs in adults and older individuals. A sample of 130 participants was selected. A series of analyses were conducted to test the study hypotheses. The results indicate that CF is not a unitary construct, but rather comprises two factors: Task-Switching and Set-Shifting. Furthermore, the components of CF are capable of predicting higher-level EFs, although this relationship differs in adults and older adults.

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