

摘要

有研究發現過度的媒介多任務處理者(HMMs)在多種認知任務上較輕度的媒介多任務處理者(LMMs)表現得遜色。這表示HMMs的多種認知功能,包括工作記憶的更新及維持、選擇性的注意力及作業轉換的能力,皆次於LMMs。有研究採用有線索的作業轉換典範時,為每一個作業設置了兩個線索,從而將總的作業轉換成本拆分為與作業轉換過程中兩個連續而不同的階段相關的部份。第一部份的成本由線索的改變導致,代表使用線索把作業心向從長期記憶抽出放於工作記憶這一階段所需要的成本。第二部份的成本由作業的改變導致,代表將作業規則應用於刺激這一階段所需的成本。第二階段的成本被大多數研究者視為真正的作業轉換成本。本研究想探討的問題是過度的媒介多任務處理所影響的是哪一階段的作業轉換能力。我們採用一份網上的媒介使用問卷選出二十名HMMs及二十名LMMs來參加實驗。實驗中,被試必須完成一個雙線索對單作業的作業轉換典範,當中的兩個作業分別為一個打字作業及一個性別判斷作業。反應時上的總作業轉換成本被拆成兩個部份:(甲)作業不變而線索改變所引起的線索轉換成本,及(乙)線索轉換成本所不能解釋的剩下的作業轉換成本。我們發現HMMs的線索轉換成本顯著地高於LMMs的線索轉換成本。然而,兩組人之間的作業轉換成本並沒有顯著差異。結果表明,HMMs只在使用線索把作業心向從長期記憶拿出來放在工作記憶這一階段遜色於LMMs。

Abstract

Heavy media multitaskers (HMMs) are found to be inferior to light media multitaskers (LMMs) in cognitive functions such as updating and maintenance of working memory representations, selective attention, and surprisingly, the ability to switch between tasks.

Research on task-switching paradigm using a 2:1 mapping between cues and tasks separates the total switch cost into costs related to two distinct, serial processing stages. The first type of cost, relating to the stage of cue-driven retrieval of task-set from long-term memory into working memory, is caused by a change in the task-indicating cue. The second type of cost, relating to the stage of application of task-rules onto the stimuli, is caused by a change of the task-set and has been regarded by some as the actual task-switch cost. In the current study, we examine which stage(s) are affected by media multitasking experience. Twenty HMMs and twenty LMMs identified using an online media-use questionnaire participated in a cued task-switching experiment involving a word typing task and a face gender classification task.

The overall switch cost in response time was decomposed into two components: (a) the cue-switch cost as a result of a change of the cue with the task unchanged; and (b) the task-switch cost, which represent the switch cost not accountable by the cue-switch cost.

HMMs showed a significantly larger cue-switch cost than LMMs, while the task-switch cost was similar for the two groups. Results suggest that HMMs may only be inferior in the cue-driven retrieval process of task set but not in the task-rule application stage.