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18th Advanced Course

Cognitive Development, Mechanisms and Constraints

3 – 5 July 2008

Friday afternoon, July 4, 2008

15h30 **Valérie Camos**, University of Burgundy
Pierre Barrouillet, University of Geneva
***Factors of Working Memory Development : the Time-Based
Resource-Sharing Approach***

Abstract:

Increase in working memory capacity is often mentioned as a main source of cognitive development (Case, 1985; Pascual-Leone, 1970; Halford, 1993). Recently, we proposed a new model of working memory, the Time-Based Resource-Sharing model (TBRS ; Barrouillet, Bernardin, & Camos, 2004 ; Barrouillet & Camos, 2007). This model assumes that, during complex working memory span tasks, attention is frequently and surreptitiously switched from processing to reactivate decaying memory traces before their complete loss. According to the TBRS model, three main sources of the development of working memory are identified : the amount of available attention, the phenomenon of decay, and the efficiency of the mechanism of reactivation of memory traces through rapid attentional switching. The first part of this talk will report previous studies that documented the impact of age-related changes in the amount of attention (Barrouillet & Camos, 2001; Barrouillet & Gavens, 2004). In a second part, two series of experiments will focus on the age-related changes in the capacity to refresh and reactivate memory items in working memory span tasks. The first series will show the increase in efficiency of the refreshment mechanism from 8 to adolescence. The second series will explore the qualitative change that occurs between 5 and 7 in maintenance mechanisms.