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A.J.W. Boelhouwer & C.H.M. Brunia (Eds.)

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Symposium: Chronometric and Topographical characteristics of ERP components during development and aging.

Participants: Giuseppe Chiarenza, Philippe Robaey, Hans Stauder, Wilfried Collet and Albert Kok.

Early development and aging are associated with systematic changes in the speed of reactions: children show a gradual increase in the speed of reactions with development, while the opposite pattern, a gradual slowing of reactions, is observed for adults. These changes in performance are generally attributed to non-specific factors, like changes in processing capacity, response strategies and selective attentional abilities. Electrocortical studies show a similar (inverted U) relationship between various EEG and ERP measures and age over the entire life span. These results may be an indication of changes in the speed of central-cortical processes, and/or the selective-inhibitory function of the human brain that occur during the human life-span.

The present symposium focuses on recent studies of event-related potentials (ERP) elicited in various cognitive tasks, in children and adults that belong to different age-groups. Attention will be paid to issues like; topographical and chronometric aspects of ERP components in children and adults, changes in response strategies and memory processes during adult aging, and differential and genetic aspects of cognitive development in children

SPATIAL AND TEMPORAL ORGANIZATION OF MOVEMENT
RELATED BRAIN MACROPOTENTIALS IN CHILDREN

GIUSEPPE AUGUSTO CHIARENZA

ISTITUTO DI NEUROPSICHIATRIA INFANTILE
UNIVERSITA' DEGLI STUDI MILANO
VIA BESTA 1 20161 MILANO ITALY

The ontogenetic aspects and the spatial, temporal organization of movement related brain macropotentials recorded during the execution of a skilled performance task are reviewed in this paper. The skilled performance task is a self-paced, interactive, goal-directed task introduced by Papakostopoulos in 1978. The developmental study conducted in 119 children from the age of 6 years to adolescence has demonstrated that these potentials have a specific and independent maturational trend, characteristic of each cerebral area. The relationship of these brain potentials with the outcome of the performance, in terms of target performance and level of accuracy, is present in frontal and precentral areas but not in the parietal areas.

The magnetic study has shown that multiple sources exist for each of them in the various cerebral areas.