Thursday, Sept. 3rd

0-10.30

Invited Lecture:

DEVELOPMENT OF GOAL-DIRECTED BEVAVIOUR IN CHILDREN: ANATOMICAL-FUNCTIONAL CONSIDERATIONS

Ivica Kostovic, Zagreb, Croatia

Chair: *Giuseppe Chiarenza, Milan, Italy*

10.30 - 11.00 **C o f f e e b r e a k**

11.00-12.30

Symposium: Developmental Psychophysiology

Chair: *Giuseppe Chiarenza, Milan, Italy*

CELLULAR ANALOGS OF CONDITIONING: A NEURAL NETWORK MODEL TO LEARN SENSORIMOTOR PROGRAMS
E. Guigon, Y. Burnod (Paris, France)

THE NEUROLOGICAL DEVELOPMENT OF GRASPING
B. Touwen (Groningen, The Netherlands)

THE ROLE OF VARIABILITY IN THE DEVELOPMENT OF SKILLED ACTION
E. de J.Manoel, K.J. Connolly (Sheffield, U.K.)

THE NEUROPSYCHOPHYSIOLOGY OF SELF-PACED SKILLED ACTION IN CHILDREN
G.A. Chiarenza (Milan, Italy)

DISCUSSANTS:

INFORMATION TECHNOLOGY: THE MEANS TO ACHIEVE THE GOAL OF UNDERSTANDING THE DEVELOPMENT OF PURPOSEFUL BEHAVIOUR
D. Papakostopoulos (Bristol, U.K.)

PSYCHOPHYSIOLOGICAL DEVELOPMENT OF LEARNING ABILITIES AND PURPOSEFUL BEHAVIOR
C. Mangina (Montreal, Canada)

ituto di Neuropsichia
iversità di Milano, Milano, I

The ontogenetic aspects and the spatial, tempora
organization of movement related brain macropotentials
recorded during the execution of a skilled performance
task are reviewed. The task is self-paced, voluntary,
interactive, bimanual, goal-directed, requires
bimanual coordination, adaptive self-programming,
learning a correct time interval, improvement of
performence and provides on-line knowledge of results
(Papakostopoulos, 1978). The developmental study has
been conducted in 119 children from the age of 6 years
to adolescence.
The BP appears as a negative ramp at about
7-8 years of age, initially confined to the central
and precentral areas; after 10 years it is also
evident over the frontal and parietel regions. The
motor cortex potential is present even in 6-year-old
children, always recorded on precentral, central and
frontal areas, but not from parietal regions. The
Skilled Performence Positivity appears in all subjects
over parietal areas, but is absent from frontal,
central and precentral areas in most subjects up to 8-
9 years of age. From observation of these potentials
at various ages it is evident that each has a specific
and independent maturational trend, characteristic of
its particular cerebral area.
appearance of the BP in parietal areas and of SPP in
frontal areas is linked with the structural and
functional maturation of those association areas which
mature after the age of 10 years and are concerned
with representation and goal-management and
development of constructive praxias and complex forms
of spatial analysis and synthesis.