SENSORIMOTOR TENSOR NETWORK WITH DIFFERENT SENSORY AND MOTOR FRAMES

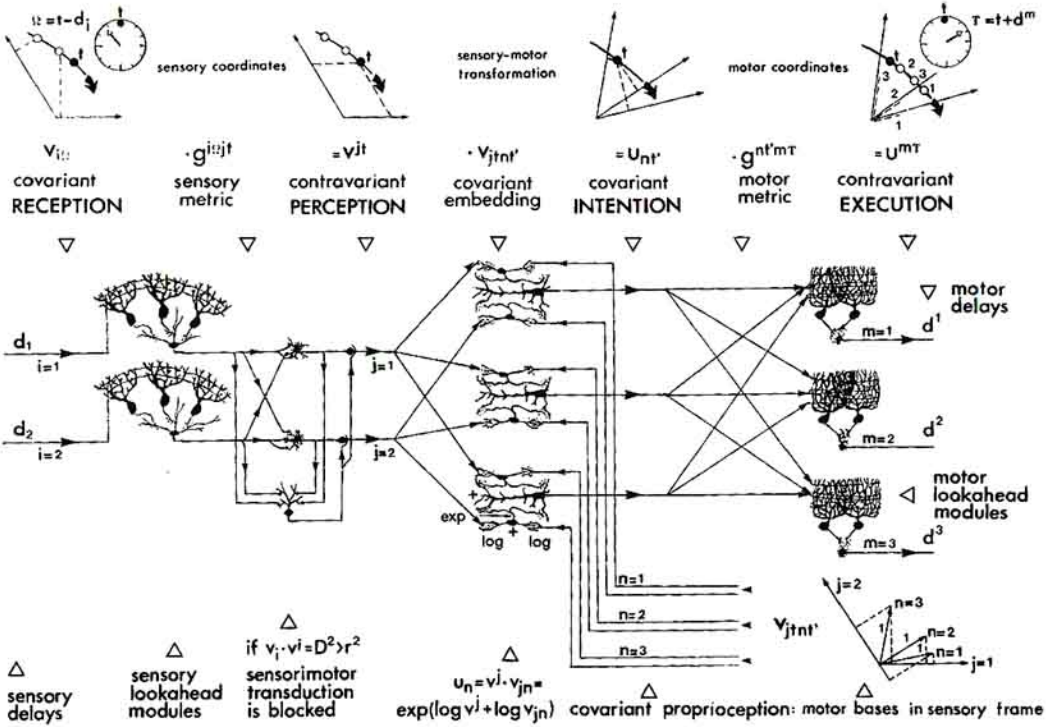

Fig. 8. Circuitry schematics of the tensorial architecture of a sensorimotor system where the sensory and motor frames of reference are not identical. This figure serves as a general model for such sensorimotor systems as the vestibulo-ocular reflex, or the more general gaze-stabilization system, involving neck muscles. The four basic vectorial expressions within the CNS (reception, perception, intention and execution) are all assigned to one and the same external invariant, the location of a moving target. These vectors are represented at four different levels of abstraction. Two-dimensional Euclidean visualization, together with centralized clock-time, is shown in the top row, tensor notation is used in the second row. Further, a verbal description as well as a network realization of the geometrical transformation is offered. For further explanation, see text.