

運動制御研究の課題

東京大学 工藤和俊

Current Issues and Future Perspectives in Motor Control Research

Kazutoshi Kudo The University of Tokyo

Abstract

Human life consists of varieties of motor activities. In this paper, We attempted to classify these activities into three hierarchical levels, that is, movement, action, and behavior, and discussed issues related to the difficulties and problems in controlling these activities. In controlling human movements, there are some difficulties originated in anatomical, dynamical, and physiological characteristics of the control object, or human body. Two approaches, that is, central control and self-organization are present as a solution for the seproblems. In executing actions such as taking an apple born at a branch, there are lots of possible ways to achieve the same goal. Here, the problem of movement selection occurs. This problem cannot be dealt with by movement-level studies. At the level of behavior, control problems lie in goal setting, by which particular activities are maintained in the long term. This problem is unique to behavior-level studies. Motor control research has mainly dealt with the only one level of life activities; movement, while behaviors are examined mainly by behavioral sciences. Therefore, it is expected for human motor control research to promote action-level studies by interdisciplinary collaboration among related research areas.

Key words : motor control, Bernstein problem, central control, Self-organization, life sciences.