

Exam Behavioral Concepts in Human Movement Sciences

October 27, 2010, 8.45 – 10.45, FG1 & FG2

For questions 1-8, please give a concise argumentation, explanation or motivation, in general no longer than 10 lines. For questions 9 & 10, no motivation is needed.

1. Fitts' law relates task constraints to performance. The underlying control process could be a feedforward mechanism or a feedback mechanism. Give a short description of a possible feedforward and a possible feedback mechanism that would yield a behavior as described by Fitts' Law.
2. The definition of information differs considerably between Fitts and Warren. Describe the relation between the information and the perceiver according to both views.
3. Handwriting on a piece of paper is very similar to handwriting on a blackboard. Why is this finding an argument against Keele's definition of a motor program?
4. A way to determine synergies was formulated in two papers (Ting & Macpherson and Latash et al.). Evaluate how the concept of synergy as used in both papers may give insight into motor control.
5. Evaluate to what extent the uncontrolled manifold (UCM) is a theoretical or a methodological concept.
6. Two papers (Schöner & Kelso and Mechsner) discuss phase-transitions in bimanual coordination. Give a brief description of both theoretical views.
7. Both Harris & Wolpert and Schöner & Kelso assume that there are noise sources in motor control. What assumption is made in each of the approaches about the magnitude of the noise?
8. Explain the difference between explicit and implicit timing using examples of at least one rhythmic and one discrete motor task.

*The eight papers discussed (each mentioned at least once in the questions above) vary considerably in many dimensions. In each of the last two questions your task is to order the papers according to one dimension. There are several orders that we consider to be correct, so don't hesitate to choose an order if you think that two papers should be ranked equally. No argumentation is needed.*

9. Order the 8 papers from reductionistic to holistic.
10. Order the 8 papers from accepting to rejecting the use of motor commands in the study of human movement.