

## **Expertise and Expert performance**

### **Twenty questions exam 5cr**

The questions are based on the following chapters of Ericsson et al.: *The Cambridge Handbook of Expertise and Expert Performance*.

Ch1; Ch2; Ch3; Ch10; Ch13; Ch15; Ch16; (Ch19 – Ch22) (Ch26 – Ch28) Ch29; Ch30; Ch35; Ch37; Ch38

While most of the questions are mainly based on one or two chapters, best results come from integrating information from across a number of chapters (maybe even other material you have read).

*Study hint:* You may want to print out each question at the top of a separate blank sheet of A4 paper, and then add your notes and comments to the sheets as you go along (filling the other side or more paper if needed!). Then, once you've gone through the chapters you can continue working on highlighting and organizing and expanding on your notes, and cross-referencing the answers. You will be using the notes as your primary study material, returning to the book (or other sources) just to check things or fill in things you might have missed, if needed.

*Three of the following twenty questions will be randomly selected for answering in the exam. Your answers should be succinct and to the point, given in plain text form ("essay-type", not bullet points). You will have three hours in the exam.*

### **The Questions:**

1. Expert performance (EP) – how is it defined, and how does it differ from (mere) experience, public or peer recognition or a position of authority?
2. Compare and contrast the following viewpoints on expert performance: only individuals with the requisite intelligence or innate talent acquire expert performance vs. with extensive domain experience, anybody will become an expert.
3. What is deliberate practice (DP), and how does it differ from other forms of domain experience?
4. What is the role of declarative or "book knowledge" (knowing that) and procedural or "practical knowledge" (knowing how) in expert performance and its acquisition?
5. What are the classical findings about the contributions of perception, memory (short term and long term) and explicit reasoning in expert problem solving in chess.
6. What are standardized representative tasks (SRT)? How do they contribute to the understanding of expert performance, and what are their strengths and

limitations in this regard? (Also comment on alternative or complementary approaches that there are)

7. Chi identifies seven ways in which experts excel. What are they?

8. Psychometric intelligence or “general cognitive ability” – what is it, how is it structured, and how does it relate to expert performance?

9. Expert knowledge: broader, more detailed, deeper, better organized...discuss, and give examples from the literature.

10. What are chunks in chess? Speculate how the concept might generalize to another domain (of your own choice). Be concrete.

11. What is “the power law of practice” in the acquisition of simple skills? Discuss also reasons why one should be quite cautious in extending the findings to the acquisition of expertise.

13. What are the classical changes in performance during skill acquisition (from “controlled” to “automatic”), and how are they reflected in the task-recruitment of specific brain networks?

14. What is protocol analysis? And why is task analysis an essential component of eliciting expert knowledge through verbal protocol?

15. Retrospective interviews of high-accomplishment individuals have shown many recurring patterns in the quantity and quality of education and social support of the development of expertise. What are they? What limits to generalization are there in these studies?

16. What is tacit knowledge? How is it relevant in expertise? How can it be studied?

17. List some domains where expertise has been investigated in multiple studies (see Ch 19-22; Ch 26-28). Then choose one, which is not chess, and explain some key findings.

18. Discuss the increase in performance over decades or centuries in domains such as athletics, music or chess. What does this tell us about the process of acquiring expert performance and the modifiability of mind and brain? What does it tell us about the constant factors (what has not changed)? Also discuss in comparison to development (or not) other domains (for example as visual arts or literature, but you can choose).

19. What is “talent”? Discuss.

20. Which domain of expertise do you find the most fascinating (does not need to be discussed in the book)? Why? What sorts of things does expertise and its acquisition in your favorite domain consist in?