Expertise, memory and visual perception in sport context: What links ?

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Expert performance is studied in many areas (*e.g.*, chess, medical diagnosis, sport). After many years of study on this phenomenon, a common conclusion emerges: skilled problem solving involves recognition-based processes. Expert activity is supported by adaptive mnemonic processes that make the relevant information available for current problem solving. In this way, the recognized information is associated with actions that are "well-suited" to task constraints. However, most of the studies in this domain focus on the structure of expert memory and little is known on the early effects of memory. My work is aimed at giving an account for the mutual links between current situation which is coded by the senses, and past experiences. Several experiments carried out with expert basket-ball players show that expert recognition is basically constrained as early as the "perceptual level". In discrimination tasks experts structure visuo-spatial information in a quite different way than novices. They tend to promote structural encoding while novices pick up information more locally. The hypothesis developed here is that particular forms of knowledge (prototypes) constrain the information processing (*i.e.*, decision making) in complex situations, by providing a framework for the reception of the environmental stimulation. Beyond these particular effects, the more general questions in which the work is grounded are the following: How do knowledge, experiences interact with perceptual systems ? In what extent expertise effects on sport decision making and recognition processes can be associated to the modulation of perceptual organization ?