ゲームと身体知

Game and Physical Skill Knowledge

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Abstract:
In this presentation, I introduced our previous researches on game player proficiency.
In the eye camera study, I explained the differences in the eye movements of the players during the proficiency in Shogi and Go [1][2]. A study at RIKEN showed that the caudate nucleus of the basal ganglia is activated in professional shogi players in brain research using fMRI [3]. Subsequent studies on the mini-shogi learning in RIKEN and our laboratory also showed that this region was activated in the more proficient players [4]. In an interview with a top professional shogi player, I introduced the influence of physical sensations on technology and how technological evolution can foster physical sensations [5]. Furthermore, our current research on the subject of curling provides an example of how the experiences associated with physical technological advances foster strategic thinking. These examples suggested the potential for research on strategic thinking and the body by using games.

[1] 伊藤毅志，松原仁，ライエル・グリンベルゲン：将棋の認知科学的研究（2）－次の一手実験からの考察，情報処理学会論文誌， Vol.45, No.5, pp.1481-1492 (2004).

[2] 高橋克吉，伊藤毅志，村松正和，松原仁：次の一手問題を用いた囲碁プレイヤの局面認識についての分析，情報処理学会論文誌， Vol.52, No.12, pp.3796-3805 (2011).

[3] Keiji Tanaka, Xiaohong Wan, Daisuke Takano, Takeshi Asamizuya, Chisato Suzuki, Kenichi Ueno, Kang Cheng and Takeshi Ito: Developing Intuition, Neural Correlates of Cognitive-Skill Learning in Caudate Nucleus, The Journal of Neuroscience, 32(48), pp.17492-17501 (2012).

[4] Takeshi Ito and Daisuke Takano: Changes in cognitive processes and brain activity while becoming proficient at Minishogi, ICGA Journal, Vol.38, No.4, pp.209-223, (2015).

[5] 伊藤毅志，松原仁：「羽生善治氏の研究」，人工知能学会誌， Vol.54, No.9, pp.702-712 (2013).

[6] Takeshi Ito, Kengo Wakabayashi and Hitoshi Matsubara: Thinking Process in Game of Curling, Workshop on Curling Infomatics 2018, pp.16-20 (2018).