

## 十一、研究計畫中英文摘要： (二) 計畫英文摘要。(五百字以內)

### **Explaining the linkage between contents of visual experience and visuomotor actions: Seeking unity between the localist and interactionist perspectives**

The linkage between visual experience and visuomotor actions recently received increasing attention in the philosophy of cognitive science, as mainly seen in the primary attempts by Clark (1999) and Clark (2001). As were explained, contents of visual experience and online guidance of visuomotor actions, deemed as ‘dual visual systems’, both have embodied and action-oriented contents. Furthermore, these dual systems have respective neural pathways that seem to operate largely independently, but there remain extensive between-pathways interactions. The achievements of arguments were impressing, especially that the explanations successfully resorted to *both localist* and *interactionist* perspectives, which had been generally conflicting with each other in cognitive science. However, the explanations of that linkage were mostly incomplete. The explanations mainly resorted to the ideas of *interactions* and *engagement* as the mediations between the dual visual systems, but the key to explaining that linkage remained not yet shaped. Some important key features, regarding nature of visual contents, have not been discussed. For example, how can the autonomicity of sensing and acting routines be simultaneously retained and be modulated (i.e. changed) in fine-tuning activities? How can (conscious) experience access to the real-world fine-tuning behavior, given that that fine-tuning behavior is supposed to operate *non-consciously*? Furthermore, why can the high-level visual system with relatively coarse-grained contents, with so many demands such as planning and goals, effortlessly and smoothly drive the lower-level system with fine-grained and fast fine-tuning behaviors? Science asks questions of process, whereas philosophy should ask questions of ‘*what is*’ regarding autonomicity and non-consciousness.

This research project aims to shape those key features, by discussing the seven points below. Firstly, this project will clarify the understanding regarding the knowledge states of the high-level strand (of the perception-action linkage). Secondly, Clark’s (2001) treatment with recourse to ‘engagement’ has not yet been discussed. His attempt of expounding engagement in terms of Gibsonian notion of affordance will then be discussed in my research project. Thirdly, the aforementioned question concerning autonomicity and consciousness will be discussed. Fourthly, this project will consider real-world fine-tuning motor action in terms of partially-autonomous robot. Fifthly, nature of sensing and acting routines will be discussed in terms of modularity. Sixthly, nature of routines and fine-tuning activities will be considered especially with regard to their nature of consciousness. Finally, this project will take deictic codes and saccadic generation into consideration, in the light of the information flow in the dynamical looping among the dual visual systems.

With the above considerations, this research project will invest on a hypothesis: the linkage between the dual visual systems relies not only on various types of mediation, on dual role of deictic codes—assessment of visual objects being bound up with motor response—but also on the nature of dynamical looping between that dual visual systems. Thus, the adoption of localist and interactionist perspectives in cognitive science and philosophy of mind will become less conflicting in the light of a unity.

**Keywords:** visual experience, content, visuomotor action, linkage, dual visual systems, localism, interactionism, embodied cognitive science, action-oriented contents.