

Dissertation Abstract

A monkey shifts visual attention from one branch to the next in his search for a berry. The monkey acts when he shifts attention in this way. The monkey guides his shifts. He does not guide his attention when a bright flash of light captures it.

The deepest challenge about agency, says Harry Frankfurt, is to explain what *individuals' guidance of their acts* consist in. In my dissertation I offer a novel answer to Frankfurt's challenge. I focus on a type of psychological agency – active shifts of visual attention. I propose that when an individual guides her attention shifts, her central executive system controls the activity of her attentional system. The central executive system is an amodal, non-modular psychological system that controls cognitive processes, both by allocating central resources to them and by organizing competencies and memory storage for these processes' completion. This system's control over the attentional system constitutes the individual's guidance.

In chapter 2 I introduce and explain the central executive system. Our best theories of this system characterize it as a system of executive functions, competencies for controlling cognitive processes. The system's signature competencies are the executive functions of switching mental set, maintaining task-relevant information in working memory, and inhibiting irrelevant stimuli and responses from interfering with an ongoing process. I counter two objections against the validity of this notion. The first objection contends that there is no central executive system, because no specific area in the brain realizes it. The second objection charges that appeal to the central executive system does not yield genuine explanation. I show how both objections ignore or misconstrue recent neuroscientific and psychological advances, and how the objections impose implausible constraints on 'proper' psychological explanation.

In chapter 3 I discuss psychological research on shifts of visual attention to develop my answer to Frankfurt's challenge. I focus on attention shifts during visual search. I explain the psychology of the visual attentional system. I show that whenever an individual guides her shift of visual attention, the individual's central executive system controls the activity of the visual attentional system. I distinguish executive control over attention shifts from the influence of the endogenous attentional system, as well as from endogenous influences on attention shifts from priming, long-term memory, and many other factors.

In chapter 4, I introduce another contributor to shifts of visual attention: the priority map, a map-like representation of the visual scene. I argue that the priority map has non-conceptual, geometric content. In many cases, central executive control directly activates the priority map for the guidance of an attention shift. In these cases, individuals' actions are not caused by conceptual intentions, as against what a major tradition in action theory claims. When individuals guide their attention shifts, the central executive system assigns priority to locations on the map. Exercises of individuals' guidance in these cases can be explicated by appeal to non-conceptual states and executive control alone.

The last chapter joins the threads of the preceding chapters. When individuals guide attention shifts, the central executive system controls these shifts. I reflect on our notions of guidance and individual to explain how central executive control helps us better understand the nature of individuals' guidance. I argue that appeals to central executive control help us understand conditions under which processes can be attributed to the whole individual, as opposed to her sub-subsystems alone. I explain how my proposal thus contributes to an answer to Frankfurt's challenge. I conclude by speculating about how central executive control can help us understand other types of psychological agency, such as judgment and reasoning, as well as the guidance of bodily action. The dissertation constitutes a first step toward explicating agency across species.