

Summary of Ph.D. dissertation:

“Information Gating and the Structure of Consciousness”

The main goal of this work is to develop an account of attention that is informed by behavioral and neuroscientific research, and that can serve two purposes: 1) providing the bases for an unified understanding of the diversity of attentional effects observed to date in the empirical sciences, and 2) contributing to clarifying the relations between diverse forms of attention and diverse forms of consciousness. The first three chapters of the dissertation address the first project, while the second project is addressed in the fourth and final chapter.

In the first chapter I introduce the idea that, contrary to what some philosophers and empirical researchers sometimes argue, there is not as much and as worrisome of a disunification between diverse neural mechanisms and functional roles associated with attention. I present an overview of recent findings and theories in the psychology and the neuroscience of attention, and I suggest that they are all unified by a common thread, namely, that they all evince a gatekeeping and enhancing role for attention. In this chapter I also introduce worries advanced by philosophers Sebastian Watzl and Henry Taylor regarding the importance of the empirical sciences in the investigation of what attention is (its essence). While Watzl proposes that a unified essence of attention cannot be found at the levels of analysis studied by the empirical sciences, Taylor proposes that there is no such an essence at all. I propose that if we follow the gatekeeping and enhancing thread, we can respond to both worries and indeed find a unified, neuro-functional essence of attention. This positive proposal is developed in the second and third chapters.

In the second chapter of the dissertation I introduce my proposed model of attention, “Information Gating”. The chapter is devoted to clarifying the enhancing role that the model attributes to attention. In particular, I compare and contrast the notion of enhancement with two cousin notions that have been proposed as capturing the essence of attention, namely, the notion of prioritization countenanced by Sebastian Watzl, and the notion of amplification countenanced by Peter Fazekas and Bence Nanay. I suggest that enhancement might be a better way of capturing the insights behind these proposals, because it is heavily and explicit grounded on empirical research (thus complementing the more conceptual and phenomenological notion of prioritization), and because it has greater extensional adequacy (as opposed to the notion of amplification, which seems less adequate to capture exogenous attention).

The third chapter of the dissertation is devoted to clarifying the gatekeeping role of attention. In this chapter I situate attention under its different forms (exogenous and endogenous; spatial, feature- or object-based) within the broader neuro-cognitive architecture of the mind, and I respond to some important objections that have prompted the abandonment of the characterization of attention as a gatekeeper, a bottleneck or a filter. One of these objections is that there is no single stage of processing at which attention operates. In response, I propose that attention can be likened to a multi-located filter. I also discuss objections related with considerations of capacity limitations (who is in greater need for attention: a system with great processing capacity, or a system with lesser capacity?), and objections related to the overgeneralization of the proposal (if there is no definite locus of attention in our cognitive systems, doesn't that make us lose grip on what exactly attention is and what it does?).

In the fourth and final chapter of the dissertation, I take the initial steps towards the clarification of the relations between diverse forms of attention and diverse forms of consciousness with the aid of the Information Gating model. The chapter is devoted to the discussion of cases from the behavioral literature where a specific kind of attention, namely selective and focused attention, is dissociated from a specific kind of consciousness, namely phenomenal consciousness. I discuss cases of attention outside consciousness and consciousness outside attention, and I propose that both groups of cases can be differentiated of cases of conscious attention along two lines: first, because in these cases attention is allocated to the targets only in a vicarious manner (i.e., not directly but rather in virtue of attending to something else), and second, because information of the relevant targets is enhanced only to a limited extent. This proposal sets the bases for a more overarching research program concerning how to use attention to clarify several important problems of consciousness.