Preface to "*Memory, Consciousness and Temporality*", by Gianfranco Dalla Barba (Kluwer Academic Publishers, 2001)

It is not frequent to come across a book announcing a major paradigm shift in its discipline. And yet, such seems to be the case for this book. Gianfranco Dalla Barba argues that any understanding of memory must pass through an adequate consideration of the operations of consciousness, and urges to reconsider these issues in the light of the phenomenological tradition. One could see this position as an invitation to give proper credit to a first-person perspective, after decades of exclusive reliance on third-person descriptions of 'objective' performance. In this 'ecumenical' sense, the return of phenomenology to cognitive science might be welcome as an addition to the now more traditional methods of behavioural and neurophysiological research. Converging, mutually constraining evidence from these three sources might ultimately contribute to a better understanding of consciousness[1]. But Dalla Barba's position appears to be much more radical than that. His arguments on memory and consciousness imply that the very foundations of cognitive science, that is, the idea that "thinking can best be understood in terms of representational structures in the mind and computational procedures that operate on those structures"[2], are wrong. There are no such things as mental representations, or memory engrams, because there is no homunculus there to interpret them and to provide memory traces with their relationship with a past event. Following coherently his line of reasoning, Dalla Barba raises doubts about the very possibility of a science of consciousness. The aim of science is to achieve objective knowledge by establishing quantitative relationships. On the other hand, "[c]onsciousness, by definition, is subjectivity that describes itself according to rules of quality and not quantity" (ms p. 198). It follows that any attempt to objectivate consciousness inevitably transforms it in something radically different. The necessary conclusion is that an (objective) science of (subjective) consciousness is not logically possible. This conclusion is not, however, explicitly stated by Dalla Barba, who is himself a thoughtful and productive cognitive scientist. A more lenient perspective for the future of cognitive science could be that you may take the risk and make inferences on what is going on in somebody else's consciousness, and perhaps discover lawful relationships, from his/her verbal reports or other behavioural

[1] Flanagan, O. (1992). *Consciousness reconsidered*. Cambridge, MA, US: MIT Press.
[2] Thagard, P. (1996). *Cognitive Science*. In: Stanford Encyclopedia of Phylosophy (E.N. Zalta, Ed.). Available at: http://www.illc.uva.nl/~seop/contents.html.

evidence (see, e.g., Dennet's heterophenomenology[3]). Dalla Barba seems to adhere to such a perspective. Also, changes in brain functioning during cognitive activities may provide hints concerning the neural correlates of consciousness[4] (despite Dalla Barba's claim that the brain has no special status for the operations of consciousness!). Though, as he points out, it is unclear how to establish causal relationships between these phenomena, finding neural activity which is both necessary and sufficient (within a given context) to the development of a determinate subjective experience[5] would be an exciting result, and could perhaps offer insights for developing rehabilitation strategies for brain-damaged patients.

A fruitful domain of interaction between phenomenology and cognitive science could be the building of taxonomies of consciousness operations. For example, the fact that one can detect a briefly presented array of letters as made of letters, but can verbally report only a subset of the array[6], suggests a distinction between phenomenal consciousness (the experience of seeing the array of letters) and reflexive consciousness (supporting the capacity of verbally reporting the letters)[7], a distinction already hinted at by Husserl, Sartre and Ricoeur[8]. In the memory domain, Dalla Barba proposes yet another taxonomy of the modes of consciousness, that between 'knowing consciousness', 'temporal consciousness' (remindful of Tulving's distinction between semantic and episodic memory), and 'imaginative consciousness'. This distinction receives support from the performance of brain-damaged patients showing a selective deficit for one of these modes of consciousness. These two examples underline the fact that first-person phenomenology and third-person observation of someone else's performance need not give rise to incompatible results, even if third-person observation is inevitably contaminated by a functionalist framework. More generally, it is not to be excluded that logically flawed assumptions, such as those underlying functionalism, may lead to genuine progress in science, whereas rigid methodologies may hamper it[9].

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[3] Dennett, D. C. (1991). *Consciousness explained*. Boston, MA, US: Little, Brown and Co.
[4] Rodriguez, E., George, N., Lachaux, J. P., Martinerie, J., Renault, B., & Varela, F. J. (1999). Perception's shadow: long-distance synchronization of human brain activity. *Nature, 397*(6718), 430-433.
[5] Kanwisher, N. (2001). Neural events and perceptual awareness. *Cognition, 79*(1-2), 89-113.
[6] Sperling, G. (1960). The information available in brief visual presentations. *Psychological Monographs, 74*(11), 1-29.
[7] Block, N. (2001). Paradox and cross purposes in recent work on consciousness. *Cognition, 79*(1-2), 197-219.
[8] Vermersch, P. (2000). *Conscience directe et conscience réfléchie*. Available at: http://www.es-conseil.fr/GREX/.
[9] Feyerabend, P. K. (1988). *Against Method*. (Rev. ed.). London; New York: Verso.

Be that as it may, this book represents a radical and carefully articulated criticism of functionalism in cognitive science. Shall it ultimately be the small child pointing to the shallowness of "the mind's new science"[10]? Perhaps only time will say. Certainly, this book has the capacity of forcing cognitive scientists to a critical evaluation of the assumptions underlying their research, as its drafts did for me during the past few years, and its central arguments continue to do now.

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[10] Gardner, H. (1985). *The mind's new science: A history of the cognitive revolution*. New York, NY, US: BasicBooks, Inc.