Comparative cognition is modestly, but radically, embodied

Comparative approaches to cognition - the study of cognitive capacities across (animal) species - often presents itself in rather cognitivistic terms. Indeed - barring the occasional exception [e.g. 1] - these approaches may appear as the last refuge of classical cognitivism. For example, they still often conceives of representations as explicit, declarative and "action neutral" informational structures [e.g. 2], and still often takes cognition and association to be opposite and exclusive [e.g. 3] - in open contrast with much of "human", non-comparative cognitive science [e.g. 4].

My talk aims to dispel this impression, showing that some of the explanatory practices of comparative approaches to cognition are more naturally and usefully described as appealing to conceptual and experimental motifs [cf. 5] belonging to *radically embodied* (non-representational and non-computational) cognitive science.

I will support my claim by analyzing a number of case studies.

The first batch of case studies is taken from a recent book-length review of avian cognitive neuroscience [6]. I illustrate, using an appropriate number of textual quotes, how the review often claims that standard cognitivist posits (such as various types of "cognitive maps") are central to explanation of the behavior of birds - only to then illustrate how, in the *actual explanations* the review itself offers, cognitive maps are not at all mentioned, and all the hard explanatory work is carried out by complex, structured, multimodal and informationally rich environmental information. This is in line with the conceptual motifs and explanatory preferences of radical embodiment, which characteristically appeals to the richness of environmental information to dispense from positing inner representations [5].

I will then examine some famous, and relevant, experiments in comparative cognition [7-10], and argue that they make use of experimental techniques and constructs that are central to radically embodied cognitive science, such as the identification of body-scaled, "dimensionless" pi-numbers to identify affordances [11,12] and the identification of patterns of sensorimotor contingencies and patterns of sensorimotor engagement to simply and resolve complex cognitive tasks [13,14].

The above cases show that radical embodiment *has* a role in comparative cognition. How big is this role? I'll suggest that it is modest, but non-negligible. It is non-negligible, in that it prompts us to be wary of the "classical cognitivist" rhetoric comparative approaches to cognition adopt, and revise our understanding of comparative cognition accordingly. But it is modest, in that it does not support any blanket anti-representational and/or anti-computational claim. With a slogan: comparative cognition is modestly, but radically, embodied.

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