"Gießener Abendgespräche Kognition und Gehirn"

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"Consciousness: The Radical Plasticity Thesis"

Prof. Dr. Axel Cleeremans

(Freie Universität Brüssel)

Starting from the radical idea that consciousness is something that the brain learns to do rather than an intrinsic property of certain neural states and not others, I suggest that consciousness arises as a result of the brain's continuous attempts at predicting not only the consequences of its actions on the world and on other agents, but also the consequences of activity in one cerebral region on activity in other regions. By this account, the brain continuously and unconsciously learns to redescribe its own activity to itself, so developing systems of meta-representations that characterize and qualify the target first-order representations. Such learned redescriptions, enriched by the emotional value associated with them, form the basis of conscious experience. Learning and plasticity are thus central to consciousness, to the extent that experiences only occur in experiencers that have learned to know they possess certain first-order states and that have learned to care more about certain states than about others. This is what I call the "Radical Plasticity Thesis." Thus, we have three closely interwoven loops, all driven by the same prediction-based mechanisms. A first, internal or "inner loop", involves the brain redescribing its own representations to itself as a result of its continuous unconscious attempts of predicting how activity in one region influences activity in other regions. A second "perception-action loop", results from the agent as a whole predicting the consequences of its actions on the world. The third loop is the "self-other loop", and links the agent with other agents, again using the exact same set of mechanisms as involved in the other two loops. The existence of this third loop is constitutive of conscious experience, I argue, for it is in virtue of the fact that as an agent I am constantly attempting to model other minds that I am able to develop an understanding of myself. The processing carried out by the inner loop is thus causally dependent on the existence of both the perception-action loop and the self-other loop, with the entire system forming a "tangled hierarchy" (e.g., Hofstadter's concept of "a strange loop") of predictive internal models. In a sense thus, this is the enactive perspective, but turned both inwards and (further) outwards.
Consciousness involves "signal detection on the mind"; the conscious mind is the brain's (non-conceptual, implicit) theory about itself. I illustrate these ideas through recent behavioural explorations and computational modeling.