

## **The assesment of capacities of cognitive tool-users: From extended to integrated cognitive systems**

Given the explanatory stalemate between ‘embedded’ (EMB) and ‘extended’ (EXT) cognition, various authors have proposed normative arguments to overcome such a deadlock in favour of EXT. In this article, we criticise King (2016) and Vold’s (2018) ‘argument from assessment of capacities’ (AAC), as well as Clowes (2013) and Farina and Lavazza’s (2022) ‘cognitive diminishment argument’ (CDA). AAC states that EXT is better at attributing cognitive credit to individuals with learning disabilities who use assistive tools to complete their learning tasks. According to CDA, EXT is better than EMB since the latter implies the cognitive diminishment of the agent, while the former implies the agent’s cognitive enhancement. Our thesis is that AAC and CDA present a flawed dichotomy between EXT and EMB and that there are alternative and more informative approaches when compared to EXT. We argue that AAC and CDA suffer from the agential bias, by failing to acknowledge that human agency and cognition are characterised by a relational dependence on external resources. Moreover, AAC and CDA assume a flawed characterisation of EMB in terms of a ‘principle of intracranialism’, which ignores the complex skills involved in cognitive integration. We argue that Heersmink’s (2015) account of cognitive integration (INT) and Malafouris’s (2013) material engagement theory (MET) do not suffer from these flaws. Moreover, by combining INT with Fasoli’s (2018) taxonomy of cognitive artifacts, we obtain the framework ‘INT+’, which is more informative in attributing cognitive credit to tool-users when compared to EXT. Moreover, INT+ distinguishes between cognitive enhancement and cognitive diminishment, allowing us to normatively assess the trade-offs of the cognitive capacities we enhance and diminish by relying on cognitive artifacts. To conclude, we reply to King’s counterargument arguing that INT+ is better at assessing the capacities of tool-users by using a contextual, fine-grained, and multilevel analysis of cognitive delegation.

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