Mechanisms and meanings in the moral brain: hermeneutical and cognitive neuroscientific contributions to moral action

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Moral action as an (aristotelian) habit: automatization aspect can be explained mechanistically. Moral aspect of it requires foundation in hermeneutic interpretation. Ergo: required is an explanatory account that allows integration of a theoretical plurality, of cognitive neuroscientific and hermeneutic insights.

Hermeneutics of action understanding: Hermeneutics suggests that the process of understanding an action is intersubjective, and reciprocally influences also the action determination process. (cf. Ricoeur’s Time and Narrative (1984); Oneself as Another, (1992))

Action determination: hierarchical and planning theories of action can be taken as an account of action coding and reducing complexity in action determination, relevant in cognitive neuroscientific explanations too (cf. H. Frankfurt: Necessity, volition, and love (1999); M. Bratman: Structures of Agency (2006))

Mechanistic explanation: multi-level, heterarchically organized systems require different types of explanation at each level. Each level allows different contextual influences on the mechanism. (C. Craver: Explaining the brain (2007); W. Bechtel: Mental mechanisms (2007))

‘Sculpting the response space’: action response selection is partially determined by previous experiences and practices. (cf. C. Frith: The role of dorsolateral prefrontal cortex in the selection of action as revealed by functional imaging (2000))

Generative entrenchment: multi-level and dynamical (developing, learning) systems can integrate (entrench) external information in their mechanisms. Consequentially, the innate-acquired distinction is not always useful to make. Example: imprinting behavior is open to external information. Similar observations hold for moral action (lit.: Wimsatt, W. C. (1986). Developmental Constraints, Generative Entrenchment, and the Innate-Acquired Distinction.)

Limited Relevance of Mirroring and Shared Representations for action understanding: considering the complexity of action determination and the socio-cultural meanings that are entrenched in human brain mechanisms, action understanding is to a large extent a matter of ‘sharing a sculpted response space’ instead of shared representations or mirror neuron activities. In this process external (socio-cultural, verbal, moral) information plays a crucial role.

Recent publications:
Foundationalism and neuroscience; silence and language (Review article on ‘Philosophical Foundations of Neuroscience’ by M. Bennett & P. Hacker) – M. Keestra with S.J. Cowley -Language Sciences, 31;4 (July 2009), 531-552

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