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Ernst Mach and Daniel Dennett: Two Evolutionary Models of Cognition

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The paper argues for a reconsideration of the neglect of Ernst Mach in cognitive studies. His overall approach to epistemology was mentalistic monism: elementary sensations are the primary units therefore there is no “gulf between physical and psychological research” (Mach, 1897, pp. 14–15). This phenomenological approach is combined with an elaborate use of evolutionary considerations regarding mental organization and functioning. Mach’s “biological view of knowledge” sees a continuity between animal and human cognition and would replace a static organization with one based on gradual changes.

The basic attitude of Mach regarding the origin of concepts and other abstractions is the use of an extended principle of economy. That gives a hypothetical flavor even to our concepts regarding the physical world: concepts are used because they work in our adaptation to the environment. This general attitude is extended by him both to the buildup of elementary perceptual systems like the evolutionary origin of space perception, and on the upper end, regarding the development of science. According to Mach, hypotheses and trials characterize science as well as all our everyday cognition (Mach, 1976). This notion was taken up Karl Bühler (1922). He proposed a continuity between instinct, trial and error learning and intellect. Through the mediation of Karl Popper, a student of Bühler, these levels would roughly correspond to what Dennett (1994, 1996) calls Darwinian, Skinnerian and Popperian creatures.

A particularly central aspect of the non-essentialist approach to mental life proposed by Mach is his conception of self. Both Mach and Dennett (1991) claim that the self is not a starting point but a working hypothesis. There are two “soft anchorages” for the self concept in Mach. The first comes from our general tendency to abbreviate repeated complexes of sensations with names. The other anchoring point is found by Mach in the concept of body: “that complex of memories, moods, and feelings, joined to a particular body (the human body), which is denominated the ‘I’ or ‘Ego’ ” (Mach, 1897, p. 3).

Dennett (1991) also gives a central role to the body image in the reduction of our notion of the self. The emphasis where Dennett diverges from Mach is the role of narrative sources of coherence. The present day dissolution and reintegration view goes along with the narrative metatheory, while for Mach the same function was achieved merely by opting for the body image.

The similarities of the two views indicate that theories of cognition when they try to take an evolutionary stand, end up with rather similar proposals even when their starting points are different. The reappearance of gradualistic approaches to knowledge combined with the antiessentialistic attitude seems to be an interesting feature of approaches to cognition.

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