

**Memory traces in 19th Century Philosophy of Psychology:
Hering on the role of traces in episodic and phylogenic memory**

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Memory theory interlaces the disciplines of philosophy, neuroscience, cognitive psychology and epistemology. Memory studies polemize about the role of memory traces and their debate turns on the following questions: how do traces represent past events and how do we re-identify traces over time? How do traces provide causal continuity between a past event and a present recollection? Do traces provide a plausible explanation of recollection as a causal process and a grasp of temporal order as “earlier” and “later”?

I reconstruct a 19th Century trace theory by the Lusatian physiologist Ewald Hering (1834-1918) who taught at the universities of Leipzig, Vienna and Prague. Hering examines the problem of the continuity between our present experience and the remembered event, that is, how to causally connect past and present. For unless we can grasp causal relations and an assymmetric temporal order or unless we have a sense of temporal direction according to which our experiences precede our memories, we cannot recollect our own experiences.

Hering considers memory as a complex cognitive act grounded on a disposition or memory trace. His notion of memory trace is dynamic: rather than a mental state, it is a trigger which serves to configure our memory-representations.¹

¹ Ewald Hering (1870) “*Über das Gedächtnis als eine allgemeine Funktion der organisierten Materie*” (Vortrag gehalten in der feierlichen Sitzung der kaiserlichen Akademie der Wissenschaften in Wien am 30.5. 1870), Wien, aus der k. k. Hof-und Staatsdruckerei, pp.171-194, (p.179) and *Grundzüge der Lehre vom Lichtsinn* (1878), published posthumously in 1920 by Springer, Berlin. NB. Hering’s account of memory trace was anticipated 30 years earlier by another Pragueian immigrant, the Bohemian mathematician and philosopher Bernard Bolzano. Cf. on this Kasabova, (forthcoming habilitation research). This 19th century view is closely related to contemporary accounts of trace theory in philosophy, such as John Sutton’s account of distributed memory traces in two theories of

The memory trace guarantees a direct link between past and present, for it enables us to grasp a memory-experience. The trace carries the core-information or patterns of a past episode which are combined with present information when we recollect what we did or whom we saw yesterday. Hering's notion of memory traces underwrites his study of various aspects of memory. I begin my reconstruction by presenting his notion of memory trace in the context of episodic or autobiographical memory, then I analyse Hering's account of memory colours where he discusses the relations between memory, perception and recognition. Following Hering, I argue for the claim that those relations are governed by memory traces and cued recall. Last, I examine Hering's notion of phylogenic memory which he considers as unconscious or procedural memory and examines in the context of his study of instinct and heredity – what we now call genetic transmission.