

## Returning the Ticket: Towards a New Conception of Mental Time Travel

The fact that certain types of imagination activate the same brain zones as episodic memory provoked the hypothesis that there is a single neuro-cognitive system which enables human beings to engage in mental time travel (MTT). Mental time travel is, roughly, an individual's capacity to project herself into the past or future by remembering or imagining first-personal experiences respectively. As a neuro-cognitive phenomenon, MTT is presumed to have a distinct, though dispersed, neural correlate. The MTT hypothesis is consistent with a wide body of evidence from ontogenetics<sup>1</sup>, neuroimaging<sup>2</sup> and lesion studies<sup>3</sup>.

My paper will open with a brief sketch of the leading accounts of mental time travel.<sup>4</sup> I will then proceed to argue that these accounts are misconceived for two fundamental reasons: (1) Their genealogical debt to episodic memory and autooetic consciousness as well as the shallow conception of imagination in play give rise to an *ad hoc* and unnecessarily constrained account of episodic states. (2) The necessary capacities for MTT as traditionally conceived are unfounded, their formulation is conceptually vague and uninformative. This will severely obstruct empirical research into the ontogenetic and neurological foundations of the phenomenon.

(1) *Scope of MTT*: MTT is restricted to episodic states exclusively concerned with an individual's personal past, present and future. Employing a detailed typology of imaginative states I will draw up a rival account which construes the phenomenon in question more broadly. More specifically, I will argue that traditional accounts of MTT are unnecessarily restrictive, since (i) they insist on a clearly defined *temporal component*, which (ii) involves an explicit awareness of a *narrative self* and (iii) concerns episodes which are *personal /autobiographical*. Hence the subject involved must be the thinker's empirical self, and the scenarios must be her true past or probable future experiences. These problematic features of the standard picture are quite straightforwardly an unwelcome heritage from the major accounts of episodic memory, out of which research on MTT developed. My new account can accommodate states unwarrantedly excluded by traditional approaches to MTT. In particular, it allows for episodic states regarding the thinker's empirical self in hypothetical and temporally unspecified situations, as well as episodes not involving his empirical self at all, notably states of transference imagination, i.e. imagining being another.

(2) *Necessary capacities for MTT*: According to Tulving et al., MTT relies heavily on (i) an awareness of *subjective time*, i.e. a „kind of ability [of human beings]... to travel back in time in their own minds“ (Tulving 2002: 2); (ii) a *particular kind of self* „which allows one to introspect on one's own thoughts and to realize the relation of self to one's social environment“ (Wheeler, Stuss & Tulving, 1997: 334) and (iii) *autooetic consciousness*, i.e. “the kind of consciousness that mediates an individual's awareness of his or her existence and identity in subjective time extending from the personal past through the present to the personal future” (Tulving, 1985: 1)

I have reservations against the alleged necessity, and the formulation, of every single one of these capacities. As regards *autooetic awareness*, I will show how the repeated imprecision in its definition gave rise to four different conceptions in the literature. The effects on the empirical investigation of MTT are disastrous, since the respective fMRI and PET studies control for very different variables. Furthermore, I propose to abolish the concept of autooetic consciousness because it lumps together various phenomena which are best kept separate. Instead we should describe MTT in terms of phenomenal consciousness and a distinctive involvement of the first-person perspective. Secondly, episodic states frequently present themselves *as* a particular episodic state. Memories, for instance, have a “feeling of pastness” attached, we can thus locate them within the *subjective time* of the individual. However, certain types of first-personal imagination are entirely hypothetical. Hence, bearing a mark of subjective time cannot be a necessary feature of episodic states. Finally, I will survey a variety of conceptions of the self and evaluate what degree of self-awareness can be considered necessary for the ability to mentally travel in time. I will finish, if time allows, by evaluating my philosophical revisions of MTT from the perspective of empirical evidence.

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<sup>1</sup> E.g. Atance & O'Neill (2001), Bischof-Koehler (2000), Moore & Lemmon (2001), Povinelli (2001), Suddendorf & Busby (2005), Levine et al. (2002), Addis, Wong & Schacter (2008).

<sup>2</sup> Okuda et al. (2003), Szpunar, Watson & McDermott (2007), Addis, Wong & Schacter (2007), Buckner & Carroll (2007).

<sup>3</sup> E.g. Tulving, Hayman & Macdonald (1991), Klein, Loftus & Kihlstrom (2002).

<sup>4</sup> Wheeler, Stuss & Tulving (1997); Tulving (2002) and Suddendorf & Corballis (1997; 2007).