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# Imagining possible selves across time: Characteristics of self-images and episodic thoughts

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A B S T R A C T

Thinking about our possible selves can entail thinking about self-related imagined future events. When remembering and imagining, individuals can use both 1st person (field) and 3rd person (observer) perspectives. There is currently a paucity of research examining the visual perspectives of episodic future thoughts that represent possible selves. We hypothesised that temporally distant self-images would elicit more observer perspectives in episodic thoughts than temporally near self-images and current self-images. Utilising a repeated measures design, sixty-eight undergraduate students completed IAM, I Will Be near and I Will Be far conditions (Rathbone, Conway, & Moulin, 2011) to generate self-images and their related episodic thoughts. It was found that episodic qualities were reliably affected by different self-images. Specifically, observer perspective predilections increased with future temporal distance. Findings are discussed in relation to self-continuity with recommended practical applications of visual perspective utilisation for wellbeing.

## 1. Introduction

Our autobiographical memories have been proposed as intrinsically related to the self (Self Memory System, Conway & Pleydell-Pearce, 2000), playing an important role in how we develop and maintain our personal identity (Wilson & Ross, 2003). In particular, spatio-temporally specific episodic memories, with their intimate sense of re-experiencing the past may have a unique relationship with our sense of self (Conway, 2005, 2009; Klein & Nichols, 2012; Rathbone, Moulin, & Conway, 2008; Tulving, 1972, 2002; Wheeler, Stuss, & Tulving, 1997). Recent studies have highlighted how the episodic memory system enables humans to generate episodic future thoughts (EFTs) – mentally imagining events that may occur in one's personal future (Atance & O'Neill, 2001; see also 2016 Special Issue in *Quarterly Journal of Experimental Psychology*). Although much research has focussed on episodic and mnemonic characteristics of future thought (e.g., Berntsen & Bohn, 2010; D'Argembeau & Van der Linden, 2006), with rare exceptions (Chessell, Rathbone, Souchay, Charlesworth, & Moulin, 2014; Rathbone, Salgado, Akan, Havelka, & Berntsen, 2016) researchers have seldom made conceptual or empirical links with the concept; *possible selves*. This study extends this small set of studies by, for the first time, manipulating the temporal distance of possible selves. Herein we explore a novel question: Is visual perspective of the future affected by how temporally distant a future self is from the present?

Markus and Nurius (1986) introduced the concept of possible selves; a self-knowledge structure that specifies an individual's future self. In brief, possible selves can be ideal (e.g., admired self, professional self) or feared (e.g., unwanted self, unsuccessful self), and arise from an individual's past and present self-view. Not only are possible selves argued to affect emotion, attention and memory (see Markus & Nurius for a review), they have also been found to affect self-regulatory behaviours (e.g., *physical activity*, see

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Murru & Martin Ginis, 2010). How might possible selves be mentally represented? We argue that one plausible candidate is episodic future thoughts. Fundamentally, when envisioning ourselves across time, we can use our own, 1st person (field) perspective, or a 3rd person (observer) perspective during episodic constructions (Nigro & Neisser, 1983). Field perspectives involve looking through one's own eyes, whilst observer perspectives involve looking at oneself 'from the outside' (Libby & Eibach, 2002). The aim of the current investigation was to examine the relation between visual perspectives of episodic thoughts that are bound to possible selves.

The current investigation develops this line of research in two important ways: (1) It is the first study to use a paradigm eliciting two temporally-defined future selves; those in the near and far temporal distance. This departs from previous studies which did not manipulate the temporal distance of future selves (Rathbone, Conway, & Moulin, 2011) or only manipulated temporal distance at the event level (D'Argembeau & Van der Linden, 2004). (2) It uses these near and far possible selves to cue episodic scenarios that are thought to represent those self-images. This differs from Rathbone et al.s' (2011) study in which the temporal distance of both self-images and events were allowed to vary (i.e., not manipulated). By investigating the visual perspective (and some other relevant characteristics) of self-related events, we aim to make theoretical links between the self and personally-relevant future scenarios. We start from a general assumption that EFTs are important for simulating possible representations of what we may become in the future, and in the next sections we make links with relevant theoretical frameworks to inform our specific experimental hypotheses.

### *1.1. The relation between the episodic memory system and the self*

To expand our initial proposition, if constructing episodic memories assists in representing the current self, then logically, EFTs (Atance & O'Neill, 2001) should assist in representing possible selves. Whilst most future thinking aids everyday problem solving and action planning (Stawarczyk, Majerus, Maj, Van der Linden, & D'Argembeau, 2011), it also enables humans to imagine themselves or 'play out' novel events that might plausibly occur (Berntsen & Bohn, 2010; Suddendorf & Corballis, 2007). Mentally simulating such future scenarios of a possible self might reinforce the effects of possible selves and aid self-knowledge of one's future in relation to one's current and past self.

Episodic past and future thinking could be distinguished by involving the distinct systems of memory and imagination, respectively. The reality, however, is more nuanced. In actuality, remembering the past and imagining the future abilities both develop around three to four years of age and have common underlying cerebral bases (Suddendorf & Busby, 2005; see Schacter et al., 2012 for a review). Moreover, it has been demonstrated that individuals who have greater visual imagery abilities have more detailed and vivid episodic memories and EFTs (D'Argembeau & Van der Linden, 2006), and those with trouble recalling their past typically exhibit deficits in future thinking (e.g., Cole, Morrison, Barak, Pauly-Takacs, & Conway, 2016; Hassabis, Kumaran, Vann, & Maguire, 2007; Klein, Loftus, & Kihlstrom, 2002).

The ability to engage in both past and future episodic thought is known as mental time travel (MTT; Suddendorf & Corballis, 1997; Wheeler et al., 1997). MTT is associated with a sense of subjective time (Wheeler et al., 1997), and has been conveyed as being inherently related to one's sense of self (Prebble, Addis, & Tippett, 2013). MTT is cognitively constructive and flexible in nature, indicating that the term 'remembering-imagining system' is appropriate (see Conway, Loveday, & Cole, 2016). These characteristics of episodic thought are emphasised by the constructive episodic simulation hypothesis (CESH, Schacter & Addis, 2007), which postulates that the episodic memory system is intrinsically constructive, allowing recombination of memory elements (e.g., people, places, objects) to enable EFT. Therefore, one of MTT's central functions could be revisiting one's past self, and envisioning one's future self.

In philosophy and cognitive science, it has been argued that one's sense of self is, in part, a by-product of the episodic memory system (see Klein & Nichols, 2012 for a review and Prebble et al., 2013 for a recent model): An individual may remind themselves of how determined they *are*, and *have been*, by recollecting their graduation day. The self, however, not only relies on contributions from episodic memory but also derives from semantic memory, trait self-knowledge being an example of the latter (Klein & Nichols, 2012; Markus, 1977; Rathbone et al., 2008).

In Prebble et al.'s (2013) recent two-dimension model of sense of self, subjective (I-self) self-awareness and objective (me-self) self-knowledge are largely aligned with episodic and semantic memory respectively. The two types of self-knowledge have been known since James (1890): The I-self is known by virtue of a person's feelings or sensations whereas the Me-self is known by virtue of one's abstracted declarative knowledge. Similarities can be drawn with Klein's (2013) theorizing on the link between the self and temporality, whereby the subjective experiencing associated with the I-self can be aligned with 'lived time' whereas the semanticised Me-self can be aligned with 'known time'. Highly related, also, are the neuropsychological investigations by Coste and colleagues (e.g., Coste et al., 2015) evidencing the interconnectedness between (past and future) self-images and episodes. The second dimension distinguishes between the present and temporally-extended conception of self. Of the four quadrants of this model, our study focuses upon; *objective-present self*, *objective temporally-extended self* and *subjective temporally-extended self* (It is beyond the scope of this paper to investigate the more intractable *subjective present self*). Regarding the objective self, one can specify a 'present' self-image (e.g., 'I am a doctoral student') and a temporally-extended future self-image (e.g., 'I will be a lecturer', see Rathbone et al., 2011). In the current investigation, we envisaged that the temporally-extended future selves would incorporate two levels or representations; episodic possible futures (e.g., 'In the first day of a new lecturing job I will see and hear the new department, whilst feeling equally nervous and excited') involving the subjectively-experienced future self, and also objectively known future self-images (e.g., 'I will be ambitious'). Consistent with the model and the link between the objective and subjective self, one study demonstrated that generating future self-images led to an activation of possible EFTs centred on those images (Rathbone et al., 2011). Relatedly, other studies have illustrated that individual tendencies (e.g., the predisposition to extract meaning from events) are related to a set of frequently thought about, self-defining memories (Singer & Blagov, 2004) and future projections (e.g., D'Argembeau et al., 2012).