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The time travelling self: Comparing self and other in narratives of past and future events

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ABSTRACT

Mental time travel research emphasizes the connection between past and future thinking, whereas autobiographical memory research emphasizes the interrelationship of self and memory. This study explored the relationship between self and memory when thinking about both past and future events. Participants reported events from the near and distant past and future, for themselves, a close friend, or an acquaintance. Past events were rated higher in phenomenological quality than future events, and near self events were rated higher in quality than those about friends. Although future events were more positive than past events, only valence ratings for self and close friend showed a linear increase in positivity from distant past to future. Content analysis showed that this increase in positivity could not be ascribed to choosing events from the cultural life script. These findings provide evidence for the role of personal goals in imagining the future.

1. Introduction

Autobiographical memory research emphasizes the relationship between the self and memory processes. Decades of research have examined the role of the self in remembering the past; recent work has turned to investigating how we envision the future, and how future thinking is related to memory of the past. The experiment reported here assesses how memory-related processes and self-related processes together shape anticipated future events, which tend to be more positive (Sedikides & Gregg, 2008) but less detailed (Berntsen & Bohn, 2010) than memories of past events. We compared memories and anticipated future events for self and other to examine three processes involved in imagining future events: episodic memory, self-enhancement biases, and cultural life scripts. Each of these factors is discussed in turn.

1.1. Constructive episodic simulation of future events

Research on constructive episodic simulation (Schacter & Addis, 2007) examines the relationship between cognitive processes involved in recalling the past and imagining the future. Also referred to as 'mental time travel' (MTT, Suddendorf & Busby, 2005), the comparison of episodic recall and future episodic simulation has indicated that similar cognitive and neural mechanisms underlie recalling the past and simulating the future (e.g. Addis, Wong, & Schacter, 2007; Spreng & Grady, 2010; Szpunar, Watson, & McDermott, 2007; for a detailed review, see Schacter et al., 2012). Additionally, patients with damage-induced amnesia demonstrate difficulties imagining the future that mirror their inabilities to recall the past (Hassabis, Kumaran, Vann, & Maguire, 2007; Klein, Loftus, & Kihlstrom, 2002; but see Cooper, Vargha-Khadem, Gadian, & Maguire, 2011); this provides further evidence that these two processes are strongly related.

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Simulating the future and remembering the past rely on overlapping systems. However, Addis, Pan, Vu, Laiser, and Schacter (2009) have suggested that episodic simulation of the future is a more difficult task than recalling the past. Future episodic simulation entails construction instead of retrieval and involves an unfamiliar rather than familiar setting (Arnold, McDermott, & Szpunar, 2011). Because of the added difficulty and unfamiliarity that comes with constructing a unique future event rather than simply retrieving one from episodic memory, memories of past events have been reported to contain more sensorial details, more visual imagery, and more clarity for the location of events than imagined future events (Berntsen & Bohn, 2010; D'Argembeau and Van der Linden, 2004). A number of studies suggest that future events contain fewer sensorial details than past events because of their novelty. For example, Gamboz, Brandimonte, and De Vito (2010) found that distant future events were rated as both less vivid and more novel than near future events, and contained less information about time and location, less clarity, and less sensorial detail than near and distant past events. Trope and Liberman's (2003)*temporal construal theory* has similarly suggested that distant events are more schematic and less based on specific event details.

Spreng and Levine (2006) asked participants to think of past and future events in response to cue words, and to indicate when the event either happened or was expected to happen. They found that both past and future events demonstrated similar distributions such that participants were more likely to report events close to the present whether in the past or in the future. They also calculated the median time point used for past and future events, and found that that anticipated future events were reported as closer to the present than remembered past events; this suggests that, when considering the future, participants do not stray as far from the present as when they remember the past (Spreng & Levine, 2006). It is possible that the similarity to the present provided by temporal closeness aided participants in imagining future events. Thus, although future events recruit similar mental capacities as past events, they tend to exhibit lower imagistic quality because they require more mental work in supplying the details, involve novel scenarios, and encourage attention to a more limited amount of information. Events farther in the future require more construction as the settings become increasingly novel. Therefore, we would expect a decline in phenomenological details with time.

1.2. Self-enhancement

Episodic future thinking is also influenced by individuals' motives and goals. D'Argembeau and Mathy (2011) developed a hierarchical model for constructing imagined future events based on current models of how memories are retrieved (e.g. Barsalou, 1988; Conway, 2005; Conway & Pleydell-Pearce, 2000). Specifically, they demonstrated that imagined future events involve a protracted construction process similar to the one described in autobiographical memory (study 1), that cuing participants with future goals led to faster retrieval of future events (study 2), and further, that cuing participants with their own personal goals led to more episodic details in imagined future events (study 3). These studies suggest that personal goals and plans play an important role in imagining future events. Work by Rathbone, Conway, and Moulin (2011) further emphasizes the organizing role of the self. They found that both memories and future events cued by identity statements (e.g. I am cheerful, I will be a mother) clustered temporally around the times that these traits developed or were expected to be developed. This finding suggests that the self is an organizing feature in imagining future events, as in memory.

Furthermore, work by Shao, Yao, Ceci, and Wang (2010) suggests that personal goals can be even more important than episodic memory in structuring anticipated future events. They instructed participants to report two past episodes and imagine two future episodes, and to rate the valence of each episode. Participants also described their past, present, and future selves by completing blank statements beginning with the word "I." To create a measure of self-concept, the researchers coded these statements as either personal or social. Shao et al. (2010) found a positive correlation between the number of personal (as opposed to social) "I" statements and valence of future events, but not the valence of past events, and this measure of self-concept correlated more strongly with valence of future episodes than valence of past episodes. This study demonstrates that simulations of future events are not simply replications of past memories into novel contexts, but are guided by personal goals and expectations for the future.

Because personal goals influence how people imagine their future, it is likely that future event simulation is affected by self-enhancement biases. People have a desire to see their lives as constantly improving (for reviews, see Sedikides & Gregg, 2008; Taylor & Brown, 1988). This pattern fits theories regarding enhancement biases and exaggerated optimism about the future (Markus & Nurius, 1986). *Temporal self-appraisal theory* (Wilson & Ross, 2001) states that people are motivated to see themselves as constantly improving, and will even denigrate their past selves to enhance their present selves. Research on future event simulation suggests that this pattern of constant self-improvement extends beyond the present to include imagined future events (D'Argembeau and Van der Linden, 2004; Shao et al., 2010). Thus, the processes of recalling the past and imagining the future not only involve applying knowledge from episodic memory to a novel future situation, but also involve a bias to construct one's life story in the framework of a perpetually-improving self (D'Argembeau and Van der Linden, 2004) who is achieving desired goals (D'Argembeau and Mathy, 2011; Shao et al., 2010).

1.3. Cultural life scripts

In addition to self-enhancement and episodic memory processes, cultural life scripts may influence the simulation of future events (Berntsen & Rubin, 2004) by guiding individuals to write about certain expected events. The cultural life script refers to a culturally shared knowledge of major life events that are expected to happen in a person's life time, such as getting