

Is it Time to Reminisce About the Future?

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Although reminiscence, by definition, involves recalling episodic memories from one's personal past, this process often triggers thoughts of the future. Conversely, imagining our future can frequently stimulate reminiscence. This paper describes, and briefly discusses, how reminiscing and imagining our future share many properties in common, including the length of their temporal extension, how they are cognitively constructed, and their shared underlying neuro-anatomical pathways. The consequences and challenges for both reminiscence research and clinical practise are briefly addressed and future explorations are suggested.

Key Terms: Balanced Time Perspective; Reminiscence Functions; Default Mode Network; Narrative Foreclosure; Future Orientation

More than 20 years ago, as part of the development of the Reminiscence Functions Scale (RFS: Webster, 1993) I asked participants in a pilot project to list reasons for their reminiscing. In response, one young woman responded, and here I paraphrase, "Whenever I reminisce, it gets all caught up in thinking about the future." At the time, focused as I was on a precise definition of reminiscence, I remember being somewhat annoyed that a participant had dared to conflate reminiscence with thinking about the future - clearly (at least to my rigid way of thinking) these were two distinct temporal areas and the latter had nothing to do with the former! Recently, I have come to suspect that this issue of temporal distinctiveness is artificial, and that there is merit in exploring how our perception of our past and future are intertwined. Several areas support this assumption, and I have space here to briefly discuss conceptual, neurological, and empirical findings illustrating the fluidity and dynamic nature of time.

Conceptual Findings

We psychologically divide the flow of time into the past, present, and future. We conveniently categorize temporal events as those that happened earlier, those that are happening now, and those which we expect to occur later. In this way, we phenomenologically keep separate the continual stream of events to which we are constantly

exposed. Nevertheless, there are several ways in which these boundaries are shown to be porous, as we seamlessly weave from one temporal orientation to another and back again with little effort, or sometimes even conscious awareness. In the following, I note a few of the ways in which these temporal divisions break down.

First, the "past" and the "future" share certain properties in common that are distinct from the "present." One of these properties is that both the past and future are infinite. In contrast, the present is delimited. Just how long the present actually lasts has been debated in psychology at least since William James (1890) described the "specious present." So while the present is forever coming into being and slipping away, lasting perhaps a few seconds to a few minutes, we can think of events that occurred weeks, months, years, and eons ago, as well as imagine events which we anticipate occurring sometime in the near or distant future. In this sense, the *temporal projection* of the past and future are the same.

Second, both remembering the past and imagining the future have a strong cognitive constructionist element. In contrast, the present involves more direct sensory experiencing - it is a raw perceptual process. With respect to the former, we have known since the pioneering work of Sir Frederic Bartlett (1932) that memory retrieval is fraught with biases, errors, and confabulations. His young English participants, upon recalling a story entitled, *The War of the Ghosts*, consistently made several types of retrieval errors. For instance, they forgot important details, changed details to fit their conceptual worldview, and inserted schema-consistent "facts" which were not part of the original story. Later seminal work by Loftus on eyewitness testimony, "false memories," and the reconstructive nature of autobiographical retrieval (e.g., Loftus & Palmer, 1974) has illustrated convincingly that recall of past experiences is supplemented and sometimes

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distorted by needs, psychological desires, and cognitive limitations. In other words, we know that we "construct" our memories. In a similar fashion, projecting oneself into the future also entails cognitive constructions. We use schemas, scripts, and prior knowledge to create possible future scenarios, such as hoped for, or feared, future selves (Markus & Nurius, 1986). In fact, recent research has demonstrated that recalling the past and imagining the future recruit similar brain areas.

Neurological Findings

Several recent studies have investigated the relationship between reminiscence, or retrospection, and imagining the future, or propection (e.g., Schacter, Addis, & Buckner, 2007) and have found remarkable similarities in terms of temporal distributions of recalled and imagined future events (Spreng & Levine, 2006), decreasing experiential richness of past/future images over time (D'Argembeau & Van der Linden, 2004), and reduced episodic specificity of both past and future events (Addis, Wong, & Schacter, 2008). These, and other qualities, have been proposed to be part of a common neurological network, a set of distinct yet interacting synaptic pathways whose physiological activation is triggered by both recalling autobiographical memories, as well as imagining future self scenarios. Such neuroanatomical architecture, known as the Default Mode Network (DMN), has now been strongly supported, if not confirmed, using sophisticated neuro-imaging techniques (e.g., Spreng & Grady, 2010).

Empirical Findings

Several areas of empirical research have illustrated the intimate connection between our past and future. For instance, certain types of reminiscence functions seem to naturally recruit future thinking, and vice versa. As one example, one of the eight reminiscence functions included in the RFS, problem-solving, involves searching past episodes of successfully coping with important life events in order to deal with contemporary issues of a similar nature, or an envisaged problem in the immediate or near future. To illustrate, preparing for an upcoming job interview often automatically triggers reminiscences about prior interviews - How did I cope? What did I do to prepare? How did I deal with my anxiety? Recalling such successes contributes to a person's sense of efficacy and confidence to deal with upcoming life events. Similarly, imagining the future and engaging in goal-oriented activities can, and often does, trigger retrieval of relevant past experiences. Our ability to mentally time travel fluidly from our experienced past to an anticipated future has important motivational and mental health consequences (Karniol & Ross, 1996).

An additional example from narrative gerontology offers a compelling illustration of the intimate links

between our personal past and anticipated future. According to this perspective (e.g., Kenyon, Bohlmeijer, & Randall, 2011) we are constantly writing, editing, and revising our lifestories as we age, and these evolving self narratives can have profound implications for our mental health. Stories, with their interconnected narrative elements (e.g., plots, genres, characters), are a means by which we make sense of our lives lived to date, as well as a mechanism for providing purpose, direction, and meaning to our future. What happens, however, when we feel that there is nothing new to add to our lifestory, and we prematurely shut down living to the fullest? This is essentially the condition known as narrative foreclosure (Freeman, 2011; Bohlmeijer, Westerhof, Randall, Tromp, & Kenyon, 2011). In this situation, a person perceives their past as closed, completed, and immutable. They are unwilling and/or unable to revise and reconfigure past events in new ways which allow for different interpretations of past actions, feelings, and events. Consequently, as older adults, they are living their life on autopilot, essentially living out a script, or the epilogue to their lifestory. In this way, a particular perception of the past strongly dictates one's perception of the future, in this case, one devoid of novelty, optimism, or regeneration. Recent research with the newly developed Narrative Foreclosure Scale (NFS: Bohlmeijer, Westerhof, & Lammers, 2012) has illustrated, for instance, how narrative foreclosure is negatively related to ego integrity.

In sum, humans have sophisticated temporal capabilities. Both recapturing earlier life experiences via reminiscing and projecting ourselves into a plausible future scenario via imagination, share several characteristics. Whether unconsciously or intentionally, we seamlessly move from our past to our future and back again. We know from the reminiscence (e.g., Webster, Bohlmeijer, & Westerhof, 2010) and future time perspective (e.g., Carstensen, 2006) literatures, that focusing on either of these temporal dimensions has both positive and negative features. Recently, research has investigated such psychological consequences using instruments meant to measure various aspects of time perspective, as briefly described below.

Perhaps the best known measure of time perspective is the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999). The ZTPI is a 56-item scale which measures five components of time perspective: past positive, past negative, present fatalistic, present hedonistic, and future. Research has shown that a positive past is associated with several adaptive mental health outcomes (e.g., less anxiety and depression). Similarly, a high positive future score on the ZTPI also indexes positive features and traits (e.g., conscientiousness, goal-orientation, delay of gratification). Moreover, the positive past and future subscale scores of the ZTPI are often positively correlated (e.g., Zhang & Howell, 2011)

corroborating empirically claims made earlier in this article.

Given this conceptual and empirical association between the past and future, and in light of their separate positive mental health outcomes, an interesting possibility arises, namely, that a combination of both a positive past and future together might produce even stronger mental health outcomes than either alone. This possibility was recently assessed with a new measure called the Balanced Time Perspective Scale (BTPS: Webster, 2011; Webster & Ma, in press). Findings with this new instrument indeed revealed that persons who, in combination, frequently reminisce and anticipate their future in positive ways, score higher on measures such as self-esteem, satisfaction with life, and happiness. These findings have been found even when possible mediators (e.g., education level, health, and personality traits such as neuroticism, openness, and extraversion) have been taken into account.

Conclusions

In conclusion, the preceding discussion has shown that humans are adept mental time travellers, seamlessly moving back and forth from subjective reinterpretations of their past and constructed imaginings of their future. Moreover, these two temporal dimensions share similar properties (e.g., indefinite extension, cognitive construction, and even neuroanatomical circuits and pathways) and are consistently correlated with each other using measures such as the ZTPI and BTPS. Finally, the narrative foreclosure work has shown how psychological consequences experienced in one temporal domain (e.g., the past) can effect outcomes in the other.

This set of interconnected commonalities suggests some very intriguing, perhaps even unsettling, questions for reminiscence researchers and practitioners. For instance, there is now ample evidence in the form of randomized controlled studies, assessed via meta-analyses, showing that reminiscence interventions improve psychological well-being and mental health. However, given that very few, if any, reminiscence or life review studies have included an assessment of participants' future time perspective, it is possible that, unbeknownst to researchers, the reminiscence interventions, through their intimate psychological and neural connections, have triggered powerful and adaptive thoughts of a positive future. Is it this optimistic, hopeful expectation of a better future that causes the reduction in depression and anxiety, rather than reminiscence per se? This could be tested experimentally with a factorial design in which persons are randomly assigned to either a no treatment group, a future group, a reminiscence group, or a reminiscence/future combination group. This would allow us to tease out the causal components and determine whether reminiscence is simply a means to an end (i.e., triggering a positive future orientation) or efficacious on its own terms.

Similar experimental treatment might investigate non-clinical aspects of the past-future relationship. For example, would encouraging persons to vividly imagine specific aspects of their future also improve retrieval clarity, specificity, and sensual experience for episodic memories? Such experimental findings would have clinical relevance as well, as they would suggest that one way for depressed persons to increase autobiographical memory specificity (e.g., Serrano, Latorre, Gatz, & Montanes, 2004) might be to prime memory recall with formal instructions/interventions to imagine their future in detail. The results of such experiments may show that it really is reminiscence alone which produces the adaptive outcomes documented in the clinical literature (e.g., Westerhof, Bohlmeijer, & Webster, 2010). Conversely, we may find that we need to incorporate a broader temporal orientation in both our experimental and clinical work. Either way, we may discover something fundamentally important about the psychological nature of time and how we manipulate it to our advantage.

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