

Mental Time Travel and the Role of Memory in Planning the Future

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A well-known witticism says that many people complain about bad memory, but only few about a bad brain. Some people justify this memory deficit by their apparent excess of imagination and by the presence of a vision for the future. That is because the ability to plan for the future and imagine one's own development trail is a necessity and a prerequisite for success in today's world. Is this justification valid also for memories of the future, as some researchers call the images of the future? Many studies suggest that memory, specifically the autobiographical memory, is very important for one's successful planning of future actions. Mental time travel to the future, but also how to keep one's resolutions for the future better (for example, how to lose weight more easily) are the topics of this article.

Autobiographical memory, i.e. the memory for an individual's personal experience(s), plays an important role in the human life. As Berntsen and Rubin wrote, autobiographical memory helps us to find our way in various social communities, helps us to define our identity and covers not only past experience, but also planning for the future (Berntsen & Rubin, 2012). In numerous aspects, autobiographical memory overlaps in its definition with episodic memory. We can even come across a definition which mentions autobiographical memory as an overarching term for semantic and episodic parts of memory which in that case do not need to be further divided (Rubin, 2012). Nonetheless, autobiographical memory is a necessary constituent of imagining one's own future, i.e. mental time travel, both in the volitional and non-volitional form.

Mental time travel is, according to the Danish researchers Bertsen and Jacobsen, people's ability to mentally move themselves into, or imagine themselves in, past experiences retroactively, but also into

possible future situations (Bertsen & Jacobsen, 2008). According to their findings and despite the general opinion, people can wander into their future just as easily and colourfully as they can wander into their past in their thoughts. It is a common practice based on this study (2008) that people mentally plan and visually imagine their possible future and possible events in their future life. However, how is it possible to imagine a future experience that we have not experienced yet? What are we imagining?

In 1985, Tulving described a case of an amnesic patient who, in addition to his own past, was not able to remember or rather imagine possible future events. As the research based on screening methods shows, the activity of neurons during imagining events from one's personal past and personal future significantly overlap. (Addis, Wong, & Schacter, 2007; Botzung, Denkova, & Manning, 2008; Okuda et al., 2001; Szpunar, Watson, & McDermott, 2007). Also behavioural studies prove the dominance of the visual form of memories – both the past and the future ones. Both forms of these imaginations show the same features (Larsen, 1999). There is an apparent connection between the ability to remember past things and to imagine the future. Therefore, we can see complaining about one's own bad memory rather as a certain form of luxury these days.

Another point of interest is the finding that people have the tendency to assess future memories more positively than those from the past, and that evoking a negative image of the future takes people more time (Newby-Clark & Ross, 2003). Berntsen and Jacobsen (2008) show the explanation in the form of a bearing concept of cultural life scripts, because the events which people imagine in their future are likely the events which are culturally or socially expected (for example, a wedding or having a child). A study of events expected in the life of an individual (Berntsen and Rubin, 2004), in which the researchers asked about the most likely events that will probably happen in the participants' lives, showed a significant positive distortion towards expecting positive life events. Those positive events were also much more accurately set in time. This corresponds with the idea of the influence of cultural life scripts on an individual's life, and also the idea of their structured nature. The time structure of life scripts (i.e. the idea that imagining specific positive events in an individual's life is usually set into specific time periods – for example, graduating from university around the age of 25 or starting the family around the age of 30) is supported by the outcomes of the previous studies which analysed their importance during conscious evoking of events from autobiographical memory (Collins, Pillemer, Ivcevic, & Gooze, 2007; Rubin & Berntsen, 2003). It has been observed that the more distant future events a person tries to imagine, the more the involved the part of cultural life scripts is, which is basically the semantic knowledge of the event. The more distant the event imagined in the mind is, the larger the influence of cultural circumstances is in constructing the idea. For instance, the idea of our retirement age will be strongly based on our knowledge of the

contemporary life of pensioners. Here, the semantic employing of knowledge is much more prominent than when trying to evoke one's own memories. Studies of brain activity (Addis et al., 2007; Szpunar et al., 2007) which follow the same line of thoughts have confirmed the activation of a number of different brain centres when forming a memory of the future, and therefore their constructive nature. The role of life scripts is also visible during conscious and focused evoking of distant memories. The more distant memory we try to evoke, the more intensive the involvement of cultural life scripts is (Berntsen & Jacobsen, 2008).

We have clarified the importance of memory in the ability to construct our ideas of the future in the previous text. In the following part, we will try to clarify how to better reach our ideas and plans. Let us start with a witticism once more.

“It is easier said than done.” For many people, this phrase is the argument for why not to start with otherwise interesting work.

Mental time travel into the future and forming a notion that can be fulfilled is only the first step in fulfilling those visions. However, Johannessen et. al. (2011) prove in their study that based on mental preparing and the comparison of the desired state with the current obstacle which is in the way of reaching the goal, it is possible to increase one's own commitment in reaching the goal. Students were divided into two groups in a study concerning food, or rather the resolution to change one's eating habits in the period of two weeks. Unlike the control group without a specific task, the students in the experiment group were told to think about their diet resolution, to vividly imagine its aspects and consequences, the circumstances of its fulfilment, and also to write down any other associations connected to fulfilling the diet resolution on a piece of paper. Just as the researchers expected, a well-thought diet was fulfilled more than a diet without appropriate mental attention. That means that students from the experiment group not only ate fewer calories, but they also showed higher physical activity.

What is also interesting is the comparison with the study carried out by [Dereka Siverse \(2013\)](#) in which Sivers shows that when making a resolution for the future, it is better to remain silent about our plans. Sivers talks about the negative impact of social environment which might – through a premature positive response to our plans – lower the overall motivation for reaching the set goal.

These findings bring a simple recommendation. We should think about our plans and resolutions in detail, pay attention to them and immerse ourselves mentally in them. However, we had better remain silent about them. According to the findings of the scholars Sivers, Johannessen and his colleagues, it will bear fruit.

Translation: Patrik Míša (pmisa@phil.muni.cz)

Sources

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