CHEMNITZ UNIVERSITY OF TECHNOLOGY

Has it really been ten years already?

Why time seems to speed up as we grow older

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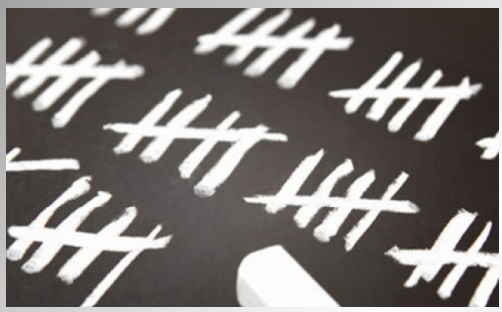
Background

Most people agree that time seems to speed up as one gets older. This illusion has been focus of interest of philosophers and psychologists for more than a century.

Wittmann & Lehnhoff (2005) compared speed of time in retrospect within different time intervals between participants differing in age (n=499, age: 14–94 years) and obtained a correlation between age and speed of time **(*r*=.30, *p* <.001)** only when participants were asked how fast the **previous 10 years** had passed for them (see also Friedman & Janssen, 2010; Janssen, Naka & Friedman, 2013).

Despite the long history of interest and the ubiquity of this 'age effect in time perception', only little is known about the underlying mechanisms of this illusion.



Hypotheses & Methods

Winkler & Sedlmeier (2011) outline potential explanations for the age effect in time perception based on previous research:

1 – Remaining lifetime shortens and death anxiety increases, therefore, speed of time becomes more salient and is perceived as faster.

2 – With increasing age less new life experiences occur. Retrospective time estimates are based on the number of (new) life experiences. The more remembered life experiences , the longer the estimated time span.

3 – With increasing age life consists of more routines. Time intervals are remembered as being shorter when spend in a routine activity.

4 – In modern times people are suffering increasingly from time pressure; as a consequence of less available time, speed of time is judged faster.

5 – With increasing age planning fallacies are less likely to occur (due to more experiences with the duration of actions). As a contrast effect of a planning fallacy , the duration of an action is overestimated in retrospect (when the anticipated duration was previously underestimated).

Methods

Online Survey measuring time perception and the potential factors of time perception , both

(1) for the ‚**current life situation**' and

(2) retrospectively for ‚**past life periods**' in ten year steps

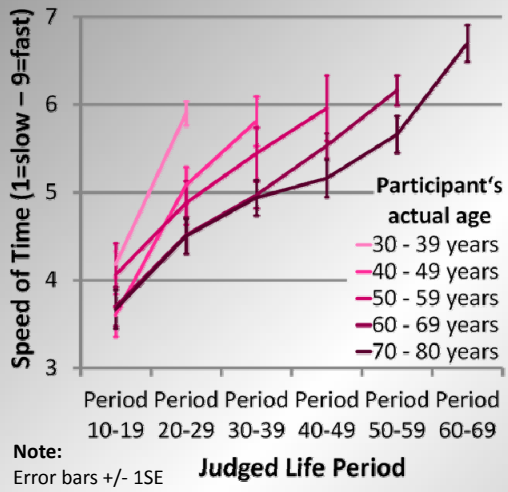
Participants: N = 601; Age 15 – 80 years; ♀= 69%

Correlation between measures of time perception:
r=-.29, p < .001

Variables		Scale
Measures of time perception	Speed of time	slow – fast
	Perceived duration	short – long
Potential factors of time perception	Death anxiety	none – a lot
	Number of new life experiences	none – a lot
	Amount of routine in life	none – a lot
	Perceived time pressure	none – a lot
	Frequency of planning fallacies	none – a lot

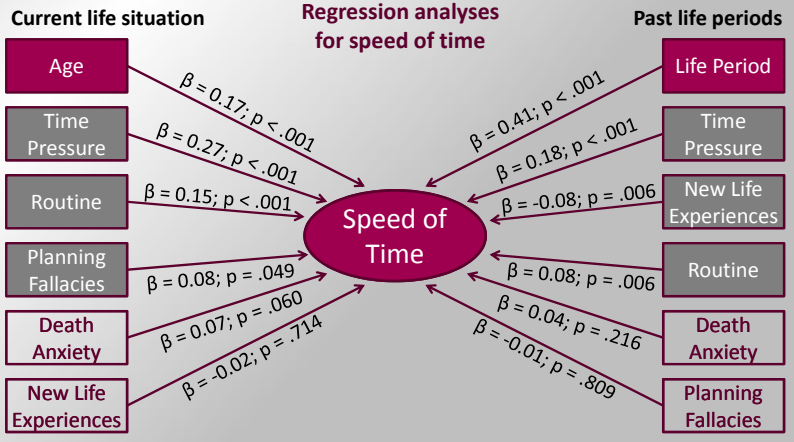
Results

Means of speed of time over the past life periods

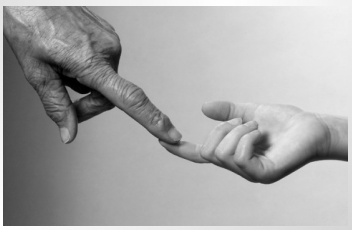


Note: Error bars +/- 1SE

Regression analyses for speed of time



Note: Analysis of current life situation is a simultaneous regression analysis; analysis of past life periods is a multilevel-regression analysis (level 1 = life periods, level 2 = participants); life periods coded chronologically; **similar results for perceived duration.**



Summary

The age effect in time perception was obtained for both the current life situation (the older the participant, the faster the speed of time) and in retrospect for the participants' past life periods. Perceived time pressure as well as the amount of routines in life are important factors of time perception in the current life situation and in past life periods. While a decreasing frequency of new life experiences seems to explain only the age effect of retrospective time perception, planning fallacies effect time perception in current life situations. Death anxiety, however, does not influence the perceived speed of time.

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