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Having Children Speeds up the Subjective Passage of Lifetime in Parents

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Abstract

A widely reproduced finding across numerous studies of different cultures is that adults perceive the most recent 10 years of their lives to have passed particularly fast, and that this perceived speed increases as they grow older. Potential explanatory factors for this effect are believed to be more routines in life as we age as well as an increase in time pressure during middle adult age, both factors that would lead to a reduced autobiographical memory load. Fewer contextual changes in life are known to cause the passage of time to be perceived as faster. Taking advantage of the database created for the study that first captured this age effect on subjective time (Wittmann & Lehnhoff, 2005), we investigated the role that having children plays in the subjective speeding of time. Adults aged between 20 and 59 who had children reported that time over the last 10 years passed subjectively more quickly than adults of the same age group without children. Factors such as education or gender did not influence subjective time. A small correlation effect could be seen in the fact that parents with more children reported that time passed more quickly. Experienced time pressure was not a differentiating factor between the two groups, as time pressure was associated with a faster passage of time in all adults. Future systematic studies will have to reveal what factors on autobiographical memory and time might be accountable for this clear effect that raising children has on perceived time.

Keywords

Passage of time judgement (PTJ), ageing, routine, time pressure, retrospective time

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1. Introduction

The impression that our lives speed up as we get older is so widespread that it has become conventional wisdom (Lee & Janssen, 2019). As time researchers, the question we get asked the most by lay persons and journalists is: Why does time speed up as we get older? The way this question is phrased clearly shows that the person who is asking believes this impression to be a fact. Until recently, there was not much empirical evidence on the passage of time that could substantiate this piece of conventional wisdom. In a study published in 2005 by Wittmann and Lehnhoff, answers to the question of "How fast did the last 10 years pass for you?" showed an age-dependent increase in the subjective feeling of the passage of time. In this German–Austrian sample, a linear increase in the perceived passage of time was visible interindividually spanning from teenagers to adults in the age group of 14 to 59. No further speeding up of subjective time occurred for older people (it seems that a plateau is reached at the age of 60). This specific age-related pattern of subjective time could not be observed for the questions regarding the speed of the passage of time over the last week, month, or year of the subjects' lives. The lack of effect for these shorter life intervals has been confirmed in further studies, including a French sample (Droit-Volet & Wearden, 2015). In this era when psychological results are very hard to reproduce, it is particularly significant that the assessed increase in the speed of time over the last 10 years has been replicated repeatedly: in a different German-language sample (Wittmann et al., 2015), with people from the Netherlands and New Zealand (Friedman & Janssen, 2010), as well as with Japanese participants (Janssen et al., 2013). A similarly significant age effect was seen in a German sample for the question of how fast the last five years have passed (Winkler et al., 2017).

The standard explanation for this age effect in time perception is related to autobiographical memory. Retrospective judgements of time rely on memory processes. The more contextual changes have been stored in memory during a given time interval, the longer duration is judged in retrospect (Zakay & Block, 1997). As we get older, we experience increasingly more routine in our lives, and the lack of novelty leads to a decline in the number of events stored in our memory (Draaisma, 2004; Fraisse, 1984). It has been shown that more routine in life, both on vacation and at work, leads to a faster passage of perceived time (Avni-Babad & Ritov, 2003). However, there is only slight evidence that the linear speeding up of subjective time across age groups can be ascribed to a decline in autobiographical memory. For example, a so-called reminiscence bump can be detected for the (slower-passing) years when people are in their teens and in their twenties, i.e., more autobiographical memories can be recalled for the ages between roughly 15 and 30 years (Kawasaki et al., 2011). In one study, people were asked to recall life events of the last five years just before judging the passage of time for that life

interval. People who activated more than four memories judged time as having passed more slowly (Kosak et al., 2019); there was no further linear increase of passage of time judgement with larger numbers of recalled events. A test of the memory hypothesis was undertaken in a study where subjects were asked to form chunks from their distinct memories when writing about last year's events and activities (Landau et al., 2018). This grouping of memories into broader categories of experience led to a relative speeding up of subjective time as compared to a control condition where participants did not chunk their memories. The authors suggested that this process could be responsible for an autobiography-related age effect in the perception of the passage of time.

Experienced time pressure is another factor that contributes to the feeling that time passes more quickly as we age. One study found that participants who reported to have been experiencing more time pressure 10 years ago thought that time had passed more quickly over the previous 10 years (Janssen et al., 2013). The feeling of time pressure could be related to a memory bias. It seems that we can more easily recall moments of time pressure that have happened in recent times as opposed to in the distant past (Janssen, 2017). This memory bias could lead to the impression that in life periods that are further back in the past, time passed more slowly than it does today. In another study, more time pressure (together with a higher presence of routines in life) positively predicted the perception that time went by more quickly in the present but not the assessment of how fast the previous five years had passed (Winkler et al., 2017). Felt time pressure was a small but significant predictor — regardless of age — in a study aimed at assessing the perceived passage of time over the last 10 years (Wittmann et al., 2015). In conclusion, there are indications that the widespread impression that time passes more quickly as we age, as related to the intervals of the past five and 10 years, partially depends on memory processes and is perhaps mediated through the factors of time pressure and routine.

Time pressure is a major characteristic of parents' life, which typically involves juggling children's schedules with their own work activities and personal engagements (Roxburgh, 2006). In addition, the increasing amount of routine activities, which are particularly important to get through everyday tasks with children and give them structure and a feeling of safety, may have a strong influence on autobiographical memory. These two factors combined might cause subjective time to speed up considerably for adults with children as compared to adults without children. Since no empirical evidence has been reported in the literature regarding this hypothesis, we used the study data collected by Wittmann and Lehnhoff (2005) (see Note 1).We re-assessed these data on subjective time relative to the question of how the last 10 years had passed, taking into account whether the participants had children or not, controlling for age and gender and the potential moderating effects of time pressure.

2. Methods

2.1. Participants

The number of people who took part in the initial study is $n = 499$ (Wittmann & Lehnhof, 2005). For the present analysis, we focused on individuals aged at least 20 (among whom we expected to find a reasonable percentage of fathers and mothers). This brought the number of participants down to $n = 431$. In this subset, 220 had at least one child, while 221 did not have any children. Although we will present *descriptive* data from all subjects with ages > 20, we will later narrow the group of participants by focusing on the age group between 20 and 59 ($n = 306$), so as to concentrate on people who are raising children at present and are thus confronted with the experience of time as affected by child care. In this subgroup $n = 132$ have children and $n = 174$ do not have children. See Table 1 for the full descriptive statistics pertaining to the number of participants having a child (1) or not (0), to the mean number of children (among those who have children), gender distribution, as well as regarding the educational level according to the German/Austrian school system, ranging from 0 (no school qualification), 1 (primary school; *Hauptschule*), 2 (secondary school; *Realschule*), 3 (high school; *Gymnasium*), to 4 (university degree).

2.2. Materials

2.2.1. Subjective Time Questionnaire

The Subjective Time Questionnaire (STQ; Mioni et al., 2020; Wittmann & Lehnhoff, 2005; Wittmann et al., 2015) assesses typical time experiences concerning the passage of time at present and for past time intervals. Here we focus on the question "How fast did the last 10 years pass for you?" The answer categories are: −2 = very slowly; −1 = slowly; 0 = neither fast nor slowly; 1 = fast; 2 = very fast. This longer time interval has repeatedly been shown to capture the faster passage of time with increasing of age (see introduction). For comparison, we also assess the smaller time ranges covering the last year, the last month, and the last week with the same answer categories. In addition, the subscale "Time pressure" will be used in our study since individuals aged between 20 and 59 reported more time pressure (Wittmann & Lehnhof, 2005). This is the age group that is involved in both work-related duties as well as parenting. Five statements were presented to the participants for which an average score is calculated: (a) I don't have enough time to complete my tasks; (b) I often feel time pressure; (c) I often don't have enough time for important things; (d) I often feel like time is running out; (e) I have to set priorities, because I cannot do all the things I would like to do. The answer categories for each statement are: 0 = strong rejection; 1 = rejection; 2 = neutral; 3 = approval; 4 = strong approval.

Table 1.
Descriptive statistics of number of subjects, separately for gender, number of individuals with children, number of children, and mean education level across the six age groups.

Age group (years)	20–29	30–39	40–49	50–59	60–69	> 70
n subjects	106	82	58	60	70	55
n gender (m/w)	(44, 62)	(33, 49)	(23, 35)	(26, 34)	(33, 38)	(20, 35)
Child: *n* yes/*n* no	20/86	35/47	36/22	41/19	53/17	35/20
If child: mean *n* of children (SD); range *n* children	1.6 (0.5)	1.7 (0.4)	1.6 (0.5)	1.6 (0.5)	1.5 (0.5)	1.6 (0.5)
	1–3	1–3	1–4	1–4	1–4	1–4
Education: mean (SD); range	2.7 (1.0)	3.0 (1.0)	3.1 (1.1)	2.7 (1.2)	2.2 (1.1)	2.4 (1.3)
	0–4	1–4	0–4	1–4	1–4	0–4

3. Results

When plotting the subjective passage of time score for the question "How fast did the last 10 years pass for you?" across all included individuals (age > 20) for the groups of people with and without children (see Fig. 1), it becomes clear that the effect on the last 10 years is mainly visible for the age groups between 20 and 59. We applied the *t*-test for this subgroup and found a significant difference between the two groups of people with children (mean: 1.22; SD: 0.77) and without children [mean: 0.76; SD: 0.86; $t_{296{\cdot}1} = -4.95$; $p < 0.001$]. The time interval of the last year [$t_{290{\cdot}6} = -1.92$; $p = 0.055$] shows a tendency to the same group difference, but the time intervals of the last month [$t_{274{\cdot}2} = 0.204$; $p = 0.838$] and the last week [$t_{277{\cdot}3} = 0.504$; $p = 0.615$] do not. In short, this means that the participants in our study who have children reported experiencing a faster passage of time over the last 10 years compared to those who do not have any.

In a subsequent ANOVA concerning the dependent variable of experiencing the last 10 years, next to the difference between having a child or not (factor 1), we tested the main factors (2) age (age groups: 20 to 29, 30 to 39, 40 to 49, 50 to 59), (3) gender (male, female), and (4) education (range: 0–4) on the subjective passage of time over the last 10 years. Only the child factor ($F_{1,228} = 11.10$, $p < 0.001$) and the age group factor ($F_{3,228} = 2.77$, $p < 0.042$) had a significant effect on the felt passage of time over the last 10 years. No other main factor or interaction was significant (all $p > 0.2$). The child factor represents the effects found in the *t* tests;

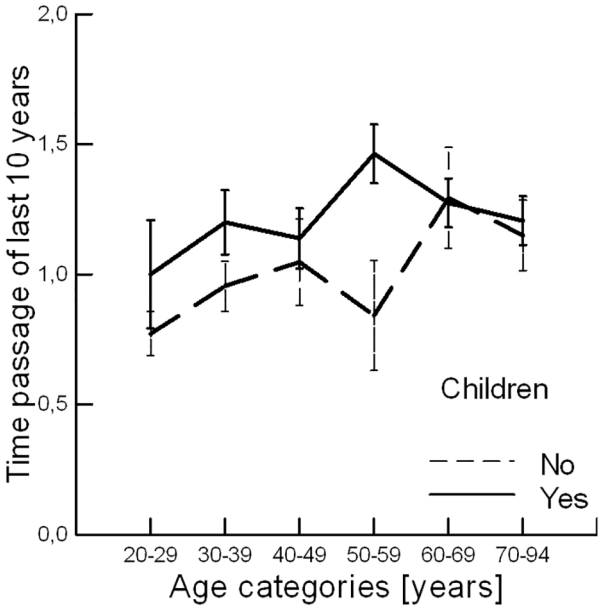

Figure 1. The subjective measure of speed of passage of time over the last 10 years (range: −2 to +2) for the different age groups and separately for individuals with (yes, continuous line) and without (no, broken line) children.

the age group factor reflects the fact that time passes faster as age increases. The level of education does not influence subjective time and there is no difference between men and women. The lack of interaction between gender and having a child clarifies that women and men alike perceive the same increase in the speed of time as a consequence of having a child.

In a subsequent analysis, we focused on the participants aged between 20 and 59 who had a child to see whether the number of children had an effect on subjective time. A Pearson's correlation revealed a small and barely significant effect ($r = 0.175$, $p = 0.044$). The more children people have, the faster time passes for them. Finally, we wanted to test whether the perceived time pressure had an effect on the passage of time, across all selected subjects (in the age range between 20 and 59) and separately for the two subgroups with and without children. Across all subjects there is a small but clearly significant association as tested with a Pearson's correlation ($r = 0.162$, $p = 0.005$). A similar effect of time pressure on the subjective passage of time over the last 10 years is found in both the subgroup with children ($r = 0.146$, $p = 0.054$) and that without children ($r = 0.179$, $p = 0.040$). Due to the lower number of subjects (and low power) when separating between the two subgroups, these correlations fail to or barely reach the significance level. However, it is reasonable to assume that time pressure is a general factor for any person, regardless of whether they have children or not.

4. Discussion

We found clear differences in the experience of the subjective passage of the last 10 years between adults who have children and adults who do not. The following effects were seen for the age groups between 20 and 59, i.e., the age group that is in the child-rearing age, and not for older adults. When comparing the two groups, it emerged that for adults with children time over the last 10 years passed subjectively more quickly. Potentially moderating factors, such as education or gender, did not influence subjective time. A small positive correlation between number of children and perceived speed of time was detected. As a potential mediator we tested whether the time pressure factor could be responsible for the subjective time effect. More time pressure was associated with a faster passage of time in all adults, but it did not differentiate between adults with and without children.

We are aware that the demographic distribution of the sample is not even for gender and education across age groups. This limitation is due to the fact that the data was not gathered specifically to tackle the question presented here. In future systematic studies one would also look into the question of what age the parents' children have when they participate in a study. In this retrospective analysis our intent is to show that raising children might have a speeding effect on subjective time for their parents. We showed that raising children is associated with a faster passage of time. Since this was originally not a study about the mediating effects of having children on subjective time, we did not systematically select and assess possible factors such as the experience of daily routines or the number of daily hassles that occur in the context of child-rearing.

A different explanation for the effect we found could lie, for example, in the perception of how quickly children grow. Over ten years, children go through dramatic changes not only in their physical appearance, but also in their cognitive abilities and their status. Experiencing such remarkable changes in a person we live with, while adults change minimally might lead to the perception of accelerated time. This perceptive bias would explain why parents think that time has passed more quickly retrospectively. This hypothesis could easily be tested by investigating the subjective passage of time in adults who work with kids of unchanging ages (e.g., schoolteachers). A potential alternative explanation is that parents dedicate a large amount of their time to their children and consequently have less time available for they own interests. Without necessarily generating time pressure, this feeling of having less time for themselves might lead to the impression that little time has elapsed, as time devoted to their own life was objectively reduced. This hypothesis could be tested by investigating this same issue in parents who devote more time to their personal life (e.g., parents who manage to cultivate a specific hobby). Lastly, having kids is considered by many as an important step in life, and reflecting on having crossed this threshold in one's life could have an influence on autobiographical memory. Further studies must

investigate more deeply the underlying mechanisms of the parenting effect on subjective time acceleration.

Note

1. A post-hoc analysis of data from previous studies is a natural source of knowledge which has certain merits, but caveats have to be kept in mind. Since the study had not been systematically designed for the hypothesis under question, important mediating factors may not be sufficiently controlled for. A retrospective analysis functions as a first investigational step to test a hypothesis (Kane & Webster, 2013).

References

Avni-Babad, D., & Ritov, I. (2003). Routine and the perception of time. *J. Exp. Psychol. Gen.*, *132*, 543–550. doi: 10.1037/0096-3445.132.4.543.

Draaisma, D. (2004). *Why Life Speeds up as You Get Older: How Memory Shapes our Past*. Cambridge, UK: Cambridge University Press.

Droit-Volet, S., & Wearden, J. H. (2015). Experience sampling methodology reveals similarities in the experience of passage of time in young and elderly adults. *Acta Psychol.* (*Amst.*), *156*, 77–82. doi: 10.1016/j.actpsy.2015.01.006.

Fraisse, P. (1984). Perception and estimation of time. *Annu. Rev. Psychol.*, *35*, 1–36. doi: 10.1146/annurev.ps.35.020184.000245.

Friedman, W. J. & Janssen, S. M. J. (2010). Aging and the speed of time. *Acta Psychol.* (*Amst.*), *134*, 130–141. doi: 10.1016/j.actpsy.2010.01.004.

Janssen, S. M. J. (2017). Autobiographical memory and the subjective experience of time. *Timing Time Percept*, *5*, 99–122. doi: 10.1163/22134468-00002083.

Janssen, S. M., Naka, M., & Friedman, W. J. (2013). Why does life appear to speed up as people get older? *Time Soc.*, *22*, 274–290. https://doi.org/10.1177/0961463X13478052.

Kane, J. E., & Webster, G. D. (2013). Heuristics and biases that help and hinder scientists: toward a psychology of scientific judgment and decision making. In G. J. Feist & M. E. Goreman (Eds), *Handbook of the Psychology of Science* (pp. 437–465). New York, NY, USA: Springer Verlag.

Kawasaki, Y., Janssen, S. M., & Inoue, T. (2011). Temporal distribution of autobiographical memory: Uncovering the reminiscence bump in Japanese young and middle-aged adults. *Jpn. Psychol. Res.*, *53*, 86–96. https://doi.org/10.1111/j.1468-5884.2010.00451.x.

Kosak, F., Kuhbandner, C., & Hilbert, S. (2019). Time passes too fast? Then recall the past! — Evidence for a reminiscence heuristic in passage of time judgments. *Acta Psychol.*, *193*, 197–202. https://doi.org/10.1016/j.actpsy.2019.01.003.

Landau, M. J., Arndt, J., Swanson, T. J., & Bultmann, M. N. (2018). Why life speeds up: Chunking and the passage of autobiographical time. *Self Identity*, *17*, 294–309. https://doi.org/10.1080/15298868.2017.1308878.

Lee, Y. M., & Janssen, S. M. J. (2019). Laypeople's beliefs affect their reports about the subjective experience of time. *Timing Time Percept.*, *7*, 15–26. https://doi.org/10.1163/22134468-20181140.

Mioni, G., Wittmann, M., Prunetti, E., & Stablum, F. (2020). Time perspective and the subjective passage of time in patients with borderline personality disorders. *Timing Time Percept.*, *8*, 86–101. https://doi.org/10.1163/22134468-20191165.

Roxburgh, S. (2006). "I wish we had more time to spend together…" The distribution and predictors of perceived family time pressures among married men and women in the paid labor force. *J. Fam. Issues*, *27*, 529–553. https://doi.org/10.1177/0192513X05284008.

Winkler, I., Fischer, K., Kliesow, K., Rudolph, T., Thiel, C., & Sedlmeier, P. (2017). Has it really been that long? Why time seems to speed up with age. *Timing Time Percept.*, *5*, 168–189. https://doi.org/10.1163/22134468-00002088.

Wittmann, M., & Lehnhoff, S. (2005). Age effects in perception of time. *Psychol. Reports*, *97*, 921–935. doi: 10.2466/pr0.97.3.921-935.

Wittmann, M., Rudolph, T., Linares Gutierrez, D., & Winkler, I. (2015). Time perspective and emotion regulation as predictors of age-related subjective passage of time. *Int. J. Environ. Res. Public Health*, *12*, 16027–16042. doi: 10.3390/ijerph121215034.

Zakay, D., & Block, R. A. (1997). Temporal cognition. *Curr. Dir. Psychol. Sci.*, *6*, 12–16. https://doi.org/10.1111/1467–8721.ep11512604.