

An effect of peak abilities on recollection during young and middle adulthood

We prepare the poster as concise as possible and we would like to report some additional analyses in this page before beginning to write a manuscript. We will be honored if you will comment on additional information about the present study, as well.

Age at event analyses were conducted to test whether age at encoding has an impact on episodic reexperiences between young adults and middle ages. For this reason, bumpy events are distant events for middle ages, and they are recent events for young adults. Childhood events are corresponding to the distant events for both groups and distance from encoding to retrieval differs in terms of the age of the participants. If reminiscence bump is a unique period in terms of event characteristics rather than cognitive or maturational difference, middle age group should reminisce more episodic details about events from bump period than young adults' although it is recent for young adults. 93 young adults and 28 middle aged people' episodic reexperiences about reminiscence bump event and childhood events were analyzed by 2*2 mixed ANOVA. Results revealed no interaction and no main effect of memory type ($F(1,119) = .011, p > .05, \text{power} = .051$; $F(1, 119) = .279, p > .05, \text{power} = .082$, respectively) (reminiscence vs. childhood) but main effect of age group was found significant in a way that young adults experience more episodic detail when they are required to elicit events from different periods regardless of the periods' characteristics, $F(1, 119) = 19.949, p < .001, \eta^2 = .144, \text{power} = .993$.

For the second events, same analyses were implemented. 80 young adults and 18 middle ages report second events for both reminiscence and childhood period. Although less number of events were elicited for second events (due to fatigue), direction of results were similar. Main effect of memory type and interaction of memory type and age group were not significant ($F(1, 96) = .009, p > .05, \text{power} = .051$; $F(1,96) = .004, p > .05, \text{power} = .050. \eta^2 = .000$). Main effect of age group was consistently significant ($F(1,96) = 6.754, p < .05, \eta^2 = .066, \text{power} = .730$). Mean and standard deviations were shown in Table 1.

2*2 mixed ANOVA was separately conducted for first and second memories by memory type (twenty years ago and a year ago) and age group (young adults, middle ages) to test whether temporal distance determines the level of detail in terms of episodic reexperience between age groups. There were 93 young adults and 33 middle ages who report both type of first memories. Main effect of memory type and interaction effect were not significant ($F(1, 124) = 2.099, p > .05, \text{power} = .301, \eta^2 = .017$; $F(1,124) = .586, p > .05, \text{power} = .118, \eta^2 = .005$). Main effect of age group was found significant. Young adults provide more episodic details than middle ages, ($F(1,124) = 21.963, p < .001, \eta^2 = .150, \text{power} = .996$). Same analyses were conducted for second memories. 80 young adults and 18 middle ages report second memories for both types. Results revealed similar trend as the result of first events. Main effect of memory type and interaction were not significant ($F(1, 96) = .964, p > .05, \text{power} = .164, \eta^2 = .010$; $F(1,96) = .894, p > .05, \text{power} = .155, \eta^2 = .009$). Main effect of age group was significant ($F(1,96) = 8.303, p < .05, \eta^2 = .080, \text{power} = .814$). Means and standard deviations were provided in Table 2.

As it is indicated in the poster, we collected phenomenological experiences for each events by thirteen items and 5 point Likert scale. Age at encoding for phenomenology analyses were conducted only for the events corresponding to the period of reminiscence bump because phenomenological experiences for childhood events were considered unpredictable. In other words, one may tend to overestimate or underestimate actual experience of event more easily for childhood events than other periods. Also, since overall episodic reexperiences were low, credibility of ratings for childhood memories might be questioned.

To examine whether events corresponding to the period of reminiscence bump are differentially experienced in terms of phenomenological properties between groups, events recollected from twenty years ago for middle adults and a year ago for young adults were

matched as they are corresponding to the events from the period of reminiscence bump and mean differences between young adults and middle ages in phenomenological properties were analyzed by separate independent sample t tests after showing first and second memories from the period of reminiscence bump were not significantly different from each other ($p > .05$).

Regarding the first events, independent sample t test revealed that young adults' phenomenological experience was higher than middle ages overall. Their ratings were significantly higher in intensity-then, reliving, sound, involuntary thinking, think & talk about the event, using the consequences of events on future decisions. Regarding the second events, only importance was found significantly higher in middle ages than in young adults. Although this result is inconsistent with general pattern of the results of the present study, it might be considered as the fact that middle ages use their ratings for first events as a baseline when rating the second events. Since target events in this analysis is recent events for young adults, this does not happen to young adults as they can be able to recollect recent events easier than middle ages' distant events. These results indicate that cognitive abilities account is sufficient in explaining the reminiscence bump with considering episodic and phenomenological reexperiencing.

Overall, peaked cognitive capacity during reminiscence bump years would provide young adults advantages in recollecting autobiographical events from different periods of their life while this does not mean that peak abilities account is a unique account in explaining the bump. Moreover, the present study replicates the reminiscence bump by showing that middle aged participants report more detailed events from that period compared to events they recollected from other periods. Theoretical explanations are not necessarily mutually exclusive as it is also the case for reminiscence bump (Koppel & Bernsten, 2015).

Data will be coded further in terms of internal and external details in order to investigate whether narrating events from different periods differ between young adults and middle ages.

Previous studies have shown that while external details remain intact with age, ability to recollect internal details decreases as external details mostly indicate semantic knowledge (Levine et al., 2002).

Table 1. Analyses of episodic reexperiences considering age at encoding

Dependent variables	Young adults (N = 93)				Middle Ages (N = 28)			
	Reminiscence period		Childhood period		Reminiscence period		Childhood period	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Episodic reexperience 1st	4,62	3,57	4,84	3,06	2,18	2,70	2,04	2,13
Episodic reexperience 2nd	4,35	3,32	4,36	3,14	2,39	3,18	2,44	2,66

Table 2. Analyses of episodic reexperiences considering age of events

Dependent variables	Young adults (N = 93)				Middle Ages (N = 33)			
	Distant		Recent		Distant		Recent	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Episodic reexperience 1st	4,84	3,06	4,62	3,57	2,48	2,83	1,79	2,22
Episodic reexperience 2nd	4,36	3,14	4,35	3,32	2,56	3,13	1,89	2,03