

Highly Superior Autobiographical Memory as Reminiscence

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Highly superior autobiographical memory (HSAM) is observed in people who have the ability to recall memories for personal history for most or all the days of their adult lives. The events recalled are often organized around dates and can include events the person experienced personally or news events to which the person devoted attention. This paper summarizes research based on case studies and on comparisons of samples with and without HSAM. The paper outlines the defining features of both HSAM and reminiscence and provides a comparison of the two constructs. Overall, the paper concludes that, qualitatively, persons with HSAM have the same experience of reminiscence as persons without HSAM, but that, quantitatively, the number of autobiographical memories to which they have access is astonishingly greater, which carries both positive and negative possible consequences.

Keywords: highly superior autobiographical memory, reminiscence, case studies

The history of memory research is filled with stories of abilities that appear to defy the limits of what we assume is possible. One of the best known is A. R. Luria's famous case study documenting the ability of a man identified as S. to encode and recall tremendous amounts of information (Luria, 1968). Another is Suresh Kumar Sharma, who recited values for the irrational number Π (π) out to 70,030 digits without the use of external memory aids, taking 17 hours and 14 minutes to do so (Pi World Ranking List).

The existence of these and other examples of remarkable memory has been known for many decades, but a new form of exceptional memory has been identified more recently—that of Highly Superior Autobiographical Memory (HSAM). The story of HSAM, at least in the modern cognitive science literature, began in 2006 when Parker, Cahill, and McGaugh published a case report describing the experiences of a woman, known initially in the literature as AJ, who claimed to be able to recall events from every day of her life dating back to the age of 14. In an initial e-mail to James McGaugh in 2000, AJ said, "I just hope somehow you can help me. I am 34 years old, and since I was 11 I have had this unbelievable ability to recall my past" (Parker et al., 2006, p. 35). She went on to say that "Whenever I see a date flash on the television (or anywhere else for that matter) I automatically go back to that day and remember where I was, what I was doing, what day it fell on, and on and on... It is non-stop, uncontrollable, and totally exhausting." Later in the e-mail she added that "Most have called it a gift but I call it a burden. I run my entire life through my head every day and

it drives me crazy!!!" (for a much longer excerpt from this initial e-mail, see Parker et al., 2006)

After several years of studying the extent of AJ's capacity for autobiographical recall and other aspects of her cognitive and psychosocial function, McGaugh's team of researchers published studies reporting their findings to the scientific community, and they engaged in media interviews that brought the phenomenon of HSAM to the attention of the wider public. Through this increased public awareness, other people contacted McGaugh's lab to say they believed they fit the description of a person with HSAM. As a result, the size of the population of people believed to possess HSAM has expanded to more than 100 (Talbot, et al., 2024). Subsequently, McGaugh's and other labs have gradually conducted careful assessment of the extent and limits of HSAM (Davididi et al., 2022; LePort et al., 2012), the performance of persons with HSAM on tests of other forms of memory (Davididi et al., 2022; LePort et al., 2012), the characteristics of this group on psychosocial variables such as anxiety, depression, and obsessive-compulsive tendencies (LePort et al., 2012; Patihis, 2016), and neuroanatomical differences associated with HSAM (Brandt & Bakker, 2018; LePort et al., 2012; Mazzioni, et al., 2019; Santangelo et al., 2021).

Research on HSAM to date has done a great deal to situate it within our understanding of memory systems and even cognitive neuroscience as a whole, but what can HSAM tell us about the role memory plays in shaping and maintaining one's sense of identity—the experience a person has of what it's like to be "them?" The goal of this paper is to explore the degree to which the field of reminiscence and life review can help with this question. If Robert Butler is correct, and life review is indeed a "universal process" (Butler, 1963)—experienced and pursued by everyone—should highly superior autobiographical memory best be thought of as a rare and extreme form of reminiscence that is still recognizable as such in terms of its defining features and functions, or as

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something else? Is highly superior autobiographical memory better understood as a cognitive ability that overlaps with reminiscence in basic ways (e.g., both access information about events in the past), but whose origin, experience, purpose, effects, and consequences make it a qualitatively different experience from that of reminiscence? To address these questions, I first summarize the major findings regarding highly superior autobiographical memory to identify its core features. Then, I describe what are thought to be the defining characteristics of reminiscence and its functions. Finally, I compare the properties of highly superior autobiographical memory to those of reminiscence to decide if they should be characterized as one and the same, as close family members, or as distant relations.

The Science of Highly Superior Autobiographical Memory

The literature on HSAM can be divided into two parts, based on the distinction between two complementary approaches to research: case-based and group-based. Both address important research questions, although these questions differ in fundamental ways, and neither can substitute for the other.

In the cognitive and behavioral sciences, researchers are trained, for the most part, to learn about features of human ability, behavior, personality, and other individual difference variables by determining average levels of performance and response across large numbers of persons, all of whom are members of a particular population of interest. One factor supporting a research strategy based on the study of averages is that these values allow comparisons between a population of interest and other groups. In our case, averages allow us to compare persons with HSAM to persons without HSAM—or to more specific groups of people with other forms of enhanced or impaired memory. Because group-based studies yield conclusions on the basis of data collected from large samples of people, it is difficult to argue that averages calculated from these data are wildly different from the values one would calculate using data from everyone in that population. If the goal is to learn what all or most of the members of a population have in common—and how they differ from members of other populations—averages provide powerful and effective tools for doing this.

When investigating aspects of human behavior that are rare or difficult to identify, however, the first systematic observations reported are often those of single individuals. But even when many people present with a particular characteristic or condition of interest, the case-based approach rests on the assumption that there is as much value in learning a tremendous amount from just a few people—or even a single person—as there is in learning just a few things about a much larger group of people. Researchers adopting case-based methods learn about human characteristics one person at a time,

acknowledging that differences among people are often as informative as similarities. Case-based researchers are also very much aware that the averages on which group-based researchers place their trust can sometimes be misleading. For example, let's say the numbers of hours slept by a group of six people with clinically elevated levels of depression are 4, 5, 3, 9, 11, and 10. The group-based researcher reports that the average (mean) amount of sleep for the group is 7.0 hours, a value not that different from the average number of hours of sleep in the general population. But, in the context of this particular group, this average of 7.0 is highly misleading; by averaging across all six scores the researcher misses the fact that *nobody* in the group actually got seven hours of sleep—or anywhere close to it! Only by examining each person's profile of data separately can the researcher accurately identify patterns of similarity and difference among their participants.

Fortunately, the scientific literature on HSAM has taken advantage of the strengths supplied by both group-based and case-based methodologies. I discuss the contributions of case-based research reports first because Parker et al.'s 2006 case study first brought the phenomenon of HSAM to the attention of scientific and lay audiences, with group-based research following quickly after that.

Case Studies of HSAM

AJ (Jill Price)

The case of AJ (Parker et al., 2006) brought attention to what is now known as highly superior autobiographical memory through the work of James McGaugh and his lab. Although the experiences of other individuals with HSAM have been published subsequently (e.g., Ally et al., 2013; Brandt & Bakker; Santangelo, 2021) or even long before (Henkle, 1871), I think it's useful to focus initially on the person whose experiences were first reported in the modern era and for whom, arguably, the most information is known. Jill Price (AJ) is by no means representative of all people with HSAM, but her story is compelling and recognizable at the level of a person living the day-to-day challenges of life.

In 2000, Jill Price agreed to take part in an extensive set of cognitive tests and interviews that took several years to complete. In these sessions she revealed a number of important pieces of information about her life with HSAM. As mentioned earlier, she has the ability to remember events taking place on every day of her life since the age of 14, and for many—but not all—days before that, starting at the age of 11. She first noticed this ability when she was about 13 and attributes it, at least in part, to her frequent habit of recalling memories of her previous home life after moving from New Jersey to California when she was 11. She was always very interested in calendar dates, and this careful attention to dates may have provided a ready-made structure for organizing her autobiographical memories—so much so that when given any calendar date occurring after the age of 14, she can recall the day of the week on

which that calendar date fell, specific personal events occurring on that day, and news events, if she had been interested in them at the time.

The accuracy of her autobiographical memory was tested in several ways. In one procedure, she was given dates at random and asked to describe events occurring in her life on each day. These descriptions were confirmed as accurate when compared against diary entries made on those days many years before. An example of recall associated with a specific random date is provided below:

April 27, 1994? – “That was Wednesday. That was easy for me because I knew where I was exactly. I was down in Florida. I was summoned to come down and to say goodbye to my Grandmother who they all thought was dying but she ended up living. My Dad and Mom went to New York for a wedding. Then my mom went to Baltimore to see her family. I went to Florida on the 25th which was a Monday. This was also the weekend that Nixon died. And then I flew to Florida and my Dad flew to Florida the next day. Then I flew home and my Dad flew to Baltimore to be with my Mom.” (From Parker et al., 2006)

The validity of these findings is supported by the facts that (1) AJ was not told beforehand the dates on which she would be tested, and (2) she claimed that she almost never reviewed entries in her diaries. The reason she gave for not reviewing diary entries was that she had noticed that listing events on given days could, in part, help prevent those memories from becoming intrusive. In another test, AJ was asked for the dates on which Easter had fallen for the previous 24 years (since the age of 14) and to list events that had occurred on those days. She completed the task in ten minutes, indicating that performance was automatic, and provided the correct dates for 23 of the previous 24 Easter holidays (the one error being off by two days). When asked to perform the same task two years later without prior warning, she listed largely the same personal events that had occurred on these days, and she now provided the correct dates for all 24 of those same Easter holidays. In a third type of test, three years after the start of data collection with JP, the researchers asked her to name the dates of all of their previous testing sessions. She was able to do so quickly and easily (the dates being easily verifiable), when none of the researchers themselves could.

When AJ was asked to complete a comprehensive battery of tests of cognitive and neuropsychological function, an interesting pattern emerged. On an overall measure of cognitive and intellectual function, her full-scale IQ score was in the normal range but not higher than normal. She described her performance in school as average and, notably, maintained that her ability to rote memorize material was poor. In contrast, her overall score on the Weschler Memory Scale was much higher than normal, as were scores on measures of attention and the ability to concentrate. When specific forms of memory were examined, the profile of performance was mixed. As

expected, she had a perfect score on the standardized Autobiographical Memory Test, and her performance was far above average on tests of memory function where structure for the material to be remembered was provided. However, she displayed below-average performance on memory tasks where the test taker is required to organize and provide structure for the to-be-remembered material, such as learning lists of words. In addition, she performed poorly on tests of executive function requiring the test taker to form concepts and to reason in abstract ways. She displayed signs of perseveration during performance of these executive function tests, indicating lower levels of mental control and inhibition. Consistent with the presence of perseveration, AJ's behavior patterns indicated the presence of obsessive tendencies. Overall, formal testing indicated that AJ did not display superior encoding of autobiographical information but superior powers of retention and retrieval of the information that had already been recorded or encoded.

Interviews with AJ provided a great deal of information about her subjective experience of memory for personal history. She does not retain memories for every waking moment of her life, but, rather, she recalls memories for the same types of events that most of us do. The difference is that she has the ability to go back to any day of her life, past the age of 14, and recall memories for events that the rest of us would have forgotten. The library of memories to which she has access is thus vastly greater than that available to others. AJ doesn't appear to have recorded or encoded more memories than other people; rather, she has, for better or worse, been denied the opportunity to forget the vast majority of memories that normally cease to reappear in the conscious thoughts of others. Parker et al. (2006) describe her memories as “vivid, like a running movie and full of emotion...her remembering is automatic and not under conscious control” (p. 38). Parker et al. further describe this running movie as one where “recollection of one event from her past links to another and another, with one memory cueing the retrieval of another in a seemingly ‘unstoppable’ manner” (p. 46). Her experience is not of one continuous scene, like a webcam streaming events of the past from a single vantage point that one can never stop watching, but of one scene of the past triggering another scene and then another. It's the narrative flow of a movie in which one scene leads naturally to another one, but the events displayed do not form one continuous shot. AJ's experience of her past is like one event acting as a domino, continually tipping over the next associated domino of an event. In this way, as difficult as it may be for most of us to imagine, AJ's world appears to be one in which her past is a much larger part of her present than what most of us experience. It's a world where her autobiographical memory is at the same time both an intrusive “burden” and a source of structure, organization, and comfort. Her experience of memory is still one where real people did real things for real reasons, and she describes her autobiographical memory as a record of experienced events, in which the perceptual echoes of those events are

infused and conjoined with the emotions that accompanied them. I will examine this issue more carefully later, but, at face value, AJ's experience of autobiographical memory retains the richness, meaning, and utility of what we recognize as reminiscence, although perhaps in a rare and exaggerated form.

GC

In another case reported by Santangelo et al. (2021), a 75-year-old Italian man known as GC responded to public notices requesting participation by people who suspected they might possess HSAM. The man performed exceptionally well on two screening tests for HSAM. One was the Random Dates Test where he was asked to describe events occurring on 18 random dates. The other was the Public Dates Test where he (1) provided the dates on which 15 events known to the general public had occurred, and (2) described the public events occurring on 15 dates. He performed these tests twice, once when he was 75 and the second time when he was 80. For both tests, his performance at age 75 was very close to the mean level of performance for a comparison group of younger adults (mean age = 32.5) who had each met the criteria for HSAM. His performance at age 80 was slightly worse for the Random Dates Test than it had been at age 75, but his performance at age 80 was slightly better for the Public Dates Test, indicating not only that there was no age-related decline over the five-year period between the ages of 75 and 80, but that his performance at both ages was indistinguishable from that of younger adults. GC's recollections displayed more episodic details than normally seen in older adults, and the percentage of episodic statements was similar to that seen in younger adults.

Overall, this case study is important because it demonstrates that, at least for this one individual, highly superior autobiographical memory is not subject to the same declines in autobiographical memory function that are experienced by many older adults (Levine, et al., 2002). In addition, unlike AJ, there was no indication on the part of GC that he possessed obsessive tendencies, as supported by his scoring in the normal range on a standardized measure of obsessive-compulsive behavior.

Other Modern Case Studies of HSAM

Other case studies of persons with HSAM have been published; however, these are not reviewed here either because they cover much of the same ground as described above or because they focus on neuroimaging data identifying neurological differences between persons with and without HSAM (e.g., Ally et al., 2013; Brandt & Bakker, 2018; Mazzioni et al., 2019). These neuroimaging studies are interesting and important for defining the neurophysiological conditions under which HSAM is observed, but this growing literature falls outside the scope of this paper.

Before closing this section, it is important to note that a case report exists suggesting that AJ's is not the first recorded case of highly superior autobiographical memory. Although reporting standards were clearly different when this case was published, many aspects of this until-recently forgotten case are remarkably similar to those of AJ.

Daniel McCartney

A paper titled "Remarkable Cases of Memory," published in the *Journal of Speculative Philosophy* in 1871 (Henkle, 1871), includes a detailed description of Daniel McCartney, born in 1817, whose ability to take random dates and recall events on those days sounds remarkably similar to AJ's. For example, the paper describes recollections provided for about 30 random dates. When asked about August 9, 1854, McCartney replied: "Wednesday. It was very warm, dry weather; oh, it was uncommon dry! This was the time that I was out here in Columbiana County, and we helped take up Dave Camp's oats, about five miles south of this on Cold Run" (p. 19). When asked about March 15, 1840, he responded: "Sunday. It was somewhat sloppy weather—warm and pleasant, however, for the time of year. One of our neighbors had a cow out in the woods with a young calf, and our boys went and helped drive her home" (p. 17). Although the researcher, W. D. Henkle, was not in a position to verify the verbal recollections supplied by Daniel McCartney, Henkle's description of the manner in which they were supplied—quick, automatic, without great effort—is consistent with descriptions of AJ's responses to queries about the contents of her autobiographical memory. Although AJ may not be the first recorded case of highly superior autobiographical memory, her story is arguably the most well-documented and compelling.

Group-Based Studies of HSAM

Following public media attention to the phenomenon of HSAM, a number of research groups have sought out individuals who fit the profile of HSAM, and people fitting this description have responded to these requests. These studies have greatly expanded the range of characteristics studied and contributed greatly to our understanding of what persons with HSAM have in common and of individual differences within this group.

LePort et al. (2012) administered a variety of measures of cognitive function as well as measures of obsessive-compulsive behavior and depression to 11 individuals carefully screened for HSAM. A number of interesting findings emerged when scores for the HSAM group were compared to those of age- and sex-matched comparison groups. As expected, performance of the HSAM group was remarkably better than that of a non-HSAM comparison group on three different measures designed specifically to assess autobiographical memory (the Public Events Quiz, the 10 Dates Quiz, and the

Autobiographical Memory Test). As a representative example of group differences between the HSAM and non-HSAM groups, when participants were given 10 dates at random occurring from when they were 15 years of age to the date of testing, the HSAM group correctly stated the day of the week 97% of the time, compared to 14.6% of the time (near chance of 14.3%) for the non-HSAM control group; individuals with HSAM recalled a verifiable public event for 87% of those random days, compared to 1.5% of days for persons without HSAM; and HSAM participants recalled an autobiographical event (unverifiable) for 71% of target days, compared to 8.5% of days for non-HSAM participants.

When asked about their superior memory for personal history, persons classified as possessing HSAM reported that, on average, they first noticed they had exceptional memory for life events at 10.5 years, and that they first noted their intense interest and ability regarding calendar dates at 11.6 years. All 11 individuals in the HSAM group could name the day of the week for any day after the appearance of HSAM, and they could do this without apparent effort. LePort et al. (2016) noted that participants in the HSAM group were intensely interested in calendar dates and that this interest may help them to organize events in their lives chronologically; however, the authors did not feel that interest in calendar dates could fully explain the level of detail for life events available to persons with HSAM.

When examining memory for content that was not specifically autobiographical in nature, differences in performance between the HSAM and non-HSAM groups were observed for some measures but not all. Participants with HSAM performed significantly better than individuals without HSAM on (1) memory for associations of new names with new faces, (2) recall of image details for 15 objects, and (3) free recall for the contents of a novel story. No significant group differences were observed for (1) holding strings of digits in memory and recalling these strings in the order presented or in backward order, (2) a paired-associates word recall task in which eight pairs of words were presented and participants were then asked to recall the second word in the pair after the first word was given, or (3) the ability to draw a complex abstract design from memory. The profile of tasks where the HSAM group performed especially well and where they did not led LePort et al. (2012) to speculate that the source of superior memory performance in this group was at the stages of storage and retrieval of information rather than initial encoding.

On non-cognitive measures, the HSAM group did not differ significantly from the non-HSAM group on the Beck Depression Inventory, but HSAM participants scored significantly higher than non-HSAM participants on a measure of obsessional thoughts and behaviors. In addition, nine of 11 HSAM participants reported significant obsessive tendencies (e.g., hoarding, germ phobia, etc.). The higher average level of obsessive tendencies in the HSAM group is consistent with reports of obsessive tendencies in detailed case studies, such as

that of AJ. LePort et al. (2012) tempered the link between obsessiveness and superior autobiographical memory by noting that persons with HSAM “do not view their memories as excessively intrusive, persistent, and/or unwanted or as disruptive of their daily life” (p. 89). This group-based observation is clearly different from the negative, case-level description provided by AJ, making it evident that there is variability among the members of this group in terms of reactions to the presence of HSAM in their lives, even when the details of how their memory functions in everyday life are similar.

In a follow-up study exploring the relative contributions of initial encoding and later retrieval of autobiographical information to the appearance of HSAM, LePort et al. (2016) compared HSAM and non-HSAM groups on the decay of autobiographical memories encoded one week, one month, one year, and 10 years prior to recall. Participants were asked to recall as much detail as they could about events occurring in their lives on 28 different days. In a first session they were asked to describe events for the seven days immediately preceding the interview. Then they were asked to describe events occurring on those same seven calendar days a year previously. Finally, they were asked to describe events occurring on those same seven calendar days but 10 years previously. As an example, if the interview day was June 16, 2025, participants would be asked to describe events occurring from June 9 through June 15, 2025; then events occurring from June 9 through June 15, 2024; then events occurring from June 9 through June 15, 2015, for a total of 21 days. To evaluate consistency and accuracy of recall of events a month after they had occurred, the researchers asked participants to perform the task again but this time they were asked to recall events occurring a month earlier on the seven original target dates.

The results of the study showed that over the most recent seven days the rate of forgetting was somewhat lower in the HSAM group than the non-HSAM group but not markedly so. In contrast, when recalling events occurring a month, a year, and 10 years earlier, the HSAM group recalled roughly 50% of the number of events a month after target dates as they had a week after those target dates. They recalled approximately 48% of the number of episodic events on dates occurring a year earlier compared to a week earlier, and they recalled about 45% of the number of events occurring 10 years earlier compared to a week earlier. Thus, for persons with HSAM, forgetting of episodic events occurred, but relatively few additional events were forgotten after a month had passed. In striking contrast, the non-HSAM group recalled about 11% of the number of episodic events a month after target dates, compared to a week after target dates, and they recalled practically no specific episodic events that occurred a year or 10 years previously on those target dates. Thus, non-HSAM participants displayed near complete loss of autobiographical memory for episodic, personally relevant events occurring a year or more previously on specific dates. The authors interpreted this pattern as further evidence that persons with HSAM do not

display an unusually heightened ability to encode new autobiographical memories, but it is their ability to recall the autobiographical information that *has* been encoded that is stunningly superior. Coupled with data showing that persons with HSAM are just as prone to false autobiographical memories resulting from encoding errors (Patihis, et al., 2013), highly superior autobiographical memory is the result of superior recall, not superior encoding.

Criteria for HSAM

After briefly discussing the behavioral literature on HSAM (by no means has this been a comprehensive review), it is possible to identify a number of its defining characteristics. In the initial article describing HSAM in the modern scientific literature, Parker et al. (2006) proposed two “defining features” of HSAM: “(1) the person spends an abnormally large amount of time thinking about his or her personal past, and (2) the person has an extraordinary capacity to recall specific events from their personal past” (p. 47). In addition to these, Talbot et al. (2024), in their detailed review, note that other characteristics describing persons with HSAM include (1) the ability of internal or external cues to elicit extraordinary recall of autobiographical memories and (2) the ability to form associations between temporal cues, such as dates, and co-occurring personal events. Talbot et al. also interpreted the pattern of test results across studies of memory function as indicating that initial encoding of autobiographical information is normal in persons with HSAM, but that consolidation of this normal number of encoded memories is superior to that observed in the non-HSAM population. Consequently, the ability to retrieve autobiographical memories at a later date is greatly enhanced in persons with HSAM because the ability to forget these memories is greatly lessened.

Defining Characteristics of Reminiscence

To compare directly the experience of HSAM to reminiscence, we also need to understand the defining characteristics of reminiscence. Acknowledging that there is probably no set of criteria specifying what does and does not qualify as reminiscence on which all, or even most, researchers and practitioners in the field of reminiscence and life review would agree, one early and notable effort in this regard was made by Jeffrey Webster and Barbara Haight (1995) with their proposed *Five Dimensions of Recall*. In this paper, Webster and Haight used five characteristics to compare and contrast the related but not synonymous activities of reminiscence, life review, autobiography, and narrative. I believe it may be useful here to use these same five dimensions to compare the cognitive act of reminiscence to that of autobiographical memory, as experienced by persons with HSAM. The dimensions or descriptive characteristics identified by Webster and Haight were as follows: (1) *Spontaneity*,

referring to the degree to which the act of recall is unplanned and it is difficult to predict beforehand which events will be recalled; (2) *Structure*, referring to the degree to which the topics for recall are specified ahead of time, and the contents of recall are systematically organized, such as chronologically; (3) *Evaluation*, referring to the degree to which the activity is conducted to evaluate the meaning and purpose of one’s life; (4) *Frequency*, referring to how often recall occurs as a result of participating in the activity; and (5) *Comprehensiveness*, referring to the degree to which events are recalled from a wide range of periods from one’s life, and the collection of memories recalled includes events from many different types of situations (e.g., family trips, places lived, friends throughout school, jobs, personal relationships, travel, etc.).

Comparing HSAM to Reminiscence

The final section of this paper compares the experience of memory for personal history among persons with HSAM to the experience of reminiscence among people without it. I acknowledge that there is no one-to-one correspondence between the dimensions used to characterize reminiscence and HSAM, but I believe there are enough common points of reference to make this comparison worth pursuing.

Webster and Haight rated reminiscence in terms of whether it was low, medium, or high on each of their five dimensions of recall. Acknowledging that substantial individual differences exist for the activity of reminiscence, they rated reminiscence as high on spontaneity, low on structure, medium in its use for self-evaluation, high in frequency, and low in terms of comprehensiveness. Taking what we know about HSAM, we can now see how it compares to reminiscence on each of these five dimensions.

Spontaneity

Like reminiscence, the autobiographical memories experienced by persons with HSAM appear to be elicited in a highly spontaneous fashion by both external and internal cues. When memory for a day’s events is brought into consciousness by randomly overhearing a calendar date, and a rolling wave of associations with those events brings further memories into consciousness, it is clear that little or no preplanning was involved. To be sure, persons with HSAM have the ability to search their autobiographical memory for memories of specific events, but a high percentage of events recalled by persons with HSAM appear to be unrelated to a need for information.

Structure

For the dimension of structure, the comparison of HSAM with reminiscence is mixed. If by structure one means that it was possible to predict in everyday life which

autobiographical memories would be elicited shortly before providing a memory prompt, the answer most of the time appears to be “no.” Cues for autobiographical memories experienced by persons with HSAM appear to be unstructured. However, if by structure one means that the autobiographical memories of persons with HSAM are organized in a manner that allows them to be easily searched and retrieved, then the answer is “yes.” In cases of highly superior autobiographical memory, the frequent association between specific events and the calendar dates on which they occurred means that stating a specific date automatically triggers a rich outpouring of memories for specific events occurring on that day. The storage of events in the equivalent of a filing system, where each date is a separate file, constitutes a high level of structure. The resulting situation appears to be one in which the storage of autobiographical memories for persons with HSAM is highly structured, but retrieval of these memories is often prompted by unstructured encounters with random cues.

Evaluation

Webster and Haight (1995) assigned a moderate level of propensity for reminiscence to be used as part of taking stock of one’s life in terms of its meaning and purpose. The characterization of autobiographical memories in persons with HSAM as automatic and effortless leaves one to conclude that self-evaluation is also not a characteristic of the types of memories associated with HSAM. This is not to say that persons with HSAM do not use reminiscence to assess the meaning of their lives—there is no suggestion in the literature that they do not—but the descriptions of autobiographical events that we find so astonishing in persons with HSAM are not those of people struggling to understand their place in the world around them. When given a calendar date, they provide factual information about those days: the weather, the day of the week, what they did, who did what to, for, and with whom. Persons with HSAM provide amazing amounts of detail about *what happened* on those days, either involving them personally or in the news; but these descriptions generally do not appear to be concerned with questions of self-actualization. They describe the sequences of events and actions that populate their lives and give them context. My interpretation is that the extra memories afforded to persons with HSAM answer in great detail questions about the *wheres* and *whens* of life, but they place relatively little emphasis on questions of “*why*” or “*what if*.” I see no reason to think that persons with HSAM are any less invested in, or capable of, exploring questions related to the meaning and purpose of life; I just don’t see their extraordinary powers of autobiographical memory as providing an added advantage in pursuing them.

Frequency

Even allowing for considerable variability, Webster and Haight thought that people engage in reminiscence with a high degree of frequency. This certainly appears to

be the case for persons with HSAM. In some cases, such as that of AJ, autobiographical memories are elicited on a continual basis by internal cues but also by external cues outside the person’s control. Her statement describing her experience of autobiographical memory as “non-stop, uncontrollable, and exhausting” (Parker, et al. 2006, p. 35) provides at least case-based evidence that autobiographical memories are accessed as often, and likely more often, by persons with HSAM than by those without it.

Comprehensiveness

Webster and Haight considered reminiscence to be low in comprehensiveness, involving little conscious effort to access memories of events across a range of time periods or across a variety of situations. The autobiographical memories of persons with HSAM appear to follow the same pattern, with unanticipated cues eliciting a string of retrieved memories linked by previously formed associations. Any comprehensive coverage of memory for personal history across stages of life or across categories of events is accidental and unintended.

Final Thoughts

The topic of highly superior autobiographical memory should be of great interest to those interested in the experience of memory for personal history—both for the fascinating glimpse it gives us into what life would be like to possess it and the discomfort we should feel as scientists at our inability to explain it. It seems undeniable that the recollections of persons with HSAM constitute memories for personal history in the same sense as those of anyone engaged in the related activities of reminiscence, life review, autobiography, or narrative. The difficulty in adding HSAM to this list is that these are activities in which we can all engage, whereas the abilities displayed by persons with HSAM are rare and untrainable.

In answer to the question of whether HSAM qualifies as reminiscence, to the best of my understanding, the answer at this point is “yes.” The events recalled as a result of HSAM are real, capable of evoking emotional responses, and meaningful to those to who experience them. In light of Cappeliez and Webster’s (2011) view of reminiscence as “a personal memory that has an emotional impact” (p. 188), to the extent that evoked memories have the power to elicit emotions on the part of persons with HSAM, those persons are experiencing all the benefits and adverse effects of reminiscence. I see no reason to classify the memories of persons with HSAM as somehow akin to the output from a computer search—as qualitatively different from the pain, joy, tedium, and occasional confusion associated with the attempt by any of us to understand what has happened to us in our lives and why.

As a final observation, I think it’s fair to ask whether the tremendous access that persons with HSAM have to events in their lives carries benefits or costs commensurate with this high level of performance. For some people, there

certainly appear to be costs associated with the presence of HSAM, as reflected in statements by AJ characterizing the continuous intrusion of autobiographical memories into her conscious awareness as a “burden.” Other people with HSAM, however, do not find that it contributes negatively to their lives (LePort et al., 2012), as it represents their normal, everyday experience. An interesting topic for future research will be to explore the sources of these individual differences in the experience of HSAM.

A more puzzling question concerns the potential benefits of possessing HSAM. Certainly, there are advantages to having access to information that other people do not, such as being able to remind a friend of the name of the restaurant they went to 20 years earlier. But in terms of broader issues, like mental health, intelligence, creativity, performance in school and at work, coming to terms with the meaning of one’s life, or preparing for death, is there any evidence in the literature that persons with HSAM fare better or worse than their non-HSAM peers? It appears that the answer, at least for these aspects of personhood, is “no,” although this would be an interesting area for future research. There is evidence, for example, that persons with HSAM are more likely to display obsessive tendencies (e.g., LePort et al., 2012), that they are no more creative than persons without HSAM (Daviddi et al., 2022), and that HSAM is associated with superior performance on measures of some, but by no means all, types of non-autobiographical memory (LePort et al., 2012). The mean IQ in samples of persons with HSAM is comparable to that of non-HSAM samples (LePort et al., 2012). Jill Price (AJ), as a case example, reported having a poor memory for school-related information and described her performance in school as average (Parker et al., 2006). Furthermore, to my knowledge, there is no mention in the literature that persons with HSAM use their enhanced access to autobiographical memories to achieve a more well-developed sense of meaning and purpose in their lives, making this an additional topic for future research.

In terms of meeting the everyday challenges of life, persons with HSAM appear just as likely to succeed or fail as the rest of us. Perhaps the truly remarkable thing about highly superior autobiographical memory is that even when scores for this type of memory are off the charts—or unchartable—it still forces or allows (depending on one’s point of view) those who have it to lead normal lives.

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