

A Small Book About a Big (Vast) Memory

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Beginning (Introduction)

The beginning of this episode can be dated back to the twenties of this century. To the laboratory of the author – then only a young psychologist – came a person and asked to test his memory. The person – we will call him S. – was a reporter for one of the newspapers, and the editor of the department of the newspaper was the initiator behind his coming to the laboratory.

As always, in the morning the editor of the department gave his contributors instructions; he went through a list of places to where they were supposed to go and named what they were supposed to find out in each place. S. was among the collaborators who received instructions. The list of addresses and instructions was fairly long and the editor, with great surprise noticed that S. had not written down any instructions on paper. The editor was ready to reprimand the inattentive subordinate, but S. on his request repeated everything exactly that he was assigned to do. The editor tried to find out more closely about what was the matter and began to ask S. questions about his memory, but the latter expressed his puzzlement: is it that he remembered everything that was said to him so extraordinary? do not other people do the same thing? The fact that he possessed some sort of exceptional memory, which contrasted him with other people, remained to him unnoticed.

The editor sent him to the psychological laboratory for the investigation of memory – and now he sat before me. He was at that time no less than thirty years of age. His father had been an owner of a bookshop, his mother, although had not received a higher education was a well-read and polite woman. He had many brothers and sisters – all were ordinary, even-minded, sometimes gifted people; there were no instances of any mental disease in the family. S. himself grew up in a little place, attended school; but then his aptitude for music was discovered and he entered a musical institute; he was to become a violinist, but after his disease of the ear his hearing became lower and he saw that he would meet with little success preparing for a career as a musician. For some time he sought for something he could take up and chance brought him to the gazette, where he began to work as a reporter. He did not have a clear line of life and his plans were somewhat vague. He gave an impression of a somewhat delayed, sometimes shy person, who was perplexed by the given instruction. As was already said, he saw in himself no exceptionalities and could not imagine that his memory somehow differed from the memory of those around him. He with some embarrassment gave me the editor's request and with curiousness awaited what the investigation might give if it was undertaken. This is how our acquaintance began, which lasted for almost thirty years, filled with tests, conversations, and letters.

I proceeded with investigating S. with an ordinary for a psychologist curiosity, but without great hope that the experiments will give something notable. However even the first tests changed my attitude and gave rise to a state of confusion and perplexity, and this time not in the subject, but in the experimenter. I offered S. lines (rows) of words, then numbers, then letters that I read aloud slowly or presented in printed form. He attentively listened to a row or read it and in exact order repeated the presented material. I increased the number of presented

elements to him, giving 30, 50, 70 words or numbers – this did not produce any difficulties. S. did not require any study time and if I presented to him a row of words or numbers, he read them slowly and distinctly, he attentively listened and sometimes requested to stop or repeat a word with more clarity, sometimes doubting if he heard the word correctly, re-asked about it. Usually during the time of the experiment he closed his eyes or looked at one point (in one direction). When the experiment had finished, he asked to make a pause, mentally checked the retained information, and then gradually, without delay produced the entire row.

The experiment showed that with the same easiness he could produce a long row in the reverse order – from the end to the beginning; he could easily say which word comes after another and which word was in the row before the mentioned word. In the latter case he would make a pause, somehow trying to find the correct word, and then – easily answered the question, usually without making any mistakes.

To him it was indifferent whether presented to him where words with meaning or nonsense words, numbers or sounds, whether they were given verbally or in printed form; all he needed at most was for one element of the presented row to be separated from the other with a 2 – 3 second pause, and the following reproduction did not present any difficulties for him. Very quickly the experimenter began to have a feeling, turning into perplexity. Increases in the rows did not lead S. to any noticeable increases in difficulty and it became necessary to admit that the capacity of his memory did not have any clear boundaries. The experimenter found oneself powerless in, what could be called one of the most simplest for a psychologist task – measuring the capacity of memory. I appointed S. a second, then a third meeting. After those there followed even more meetings. Some of the meetings were separated in days and weeks, some – years.

These meetings made the position of the experimenter even more complicated. It turned out that S.'s memory does not only have clear boundaries in its capacity, but also in its reliability of retention. Experiments showed that he with success – and without any noticeable difficulty – can produce any long row of words, given to him a week, month, year, or several years ago. Some of these experiments, inevitably ending in success, were conducted 15 – 16 years after the first memorization of a row and without any warning. In these instances S. sat down, closed his eyes, made a pause, and then said: “yes-yes ... this happened with us at that apartment ... you sat at the table, and I was in the rocking-chair ... you were wearing a grey dress suit and looked at me like this ... here ... I see what you were saying to me ...” – and afterwards followed an unflawed reproduction of the read row. If we were to consider that S., who by this time became a famous mnemonist and was required to remember many hundreds and thousands of rows – this fact became even more perplexing.

All this forced me to change my task and undertake not just to measure his memory as much as to give it an accurate analysis, to portray its psychological structure. Henceforth to this joined another task, of which was mentioned above – tentatively study the unique psychological processes of this remarkable mnemonist. To these two tasks the further experiments were devoted to, the results of which only now, after many years – I will try to describe systematically.

Originating Facts

Throughout our whole experiment the S.'s retention carried an ingenuous character, and his mechanisms boiled down to that he would continue to see the presented rows of words or numbers, or transformed the dictated words or numbers into viewer symbols. One of the simplest structures was that of the retention of a table to numbers, written with chalk on a board.

S. attentively looked at the written material, closed his eyes, for a moment opened his eyes again, turned away in another direction and at a signal reproduced that written row, filling the neighboring squares, or quickly repeated in order the given numbers. It cost him no difficulty to fill the empty squares of the drawn table of numbers, which were pointed out to him at random or to name a certain row in the reverse order. He easily could name the numbers apart of any vertical row, "rename" them in the diagonal or in the end make one meaningful number from the many numbers.

For the imprinting of a table of 20 numbers he needed 35 – 40 seconds, during the duration of which he several times peered at the table; a table of 50 numbers took some more time, but he easily imprinted it in about 2.5 – 3 minutes, during the duration of which he several times fixated on the table and then – with closed eyes – checked himself ...

How did this process of "imprinting" and the following "readout" of the tables progress?

We had no other way of answering this question other than asking our subject himself. From the first glance the results received during the questioning of S. seemed very simple. S. declared that he continues to see the imprinted table, written on a board or on a piece of paper, and he only needs to "pickup" it, going through the numbers or letters in the table, which is why for him it remains indifferent whether he "picks it up" the table from the beginning or the end, repeating the elements vertically or diagonally, or just reading the numbers within the framework of the table itself. The transformation of several separate numbers into one large number for him was not more difficult than it would be for any one of us, if we were to present the table with numbers so that we could look at it for a long duration. The "imprinted" numbers S. continued to see on the same black board, just as they were presented, or on a piece of white paper; the numbers had the same configuration in which they were written, and if one of the numbers was written indistinctly or ineligible S. could inaccurately "pick it up", for example take a 3 and 8 or a 4 as a 9. However, even with this case, several peculiarities drawing attention to themselves showed that the process of memorization (retention) carried not just a simple character.

Synesthesia

Everything began from something a little and it seemingly insignificant observation.

S. more than once noticed that if the experimenter read some words, for example "yes" or "no" to confirm the correctness of the reproduced material or pointing out the mistakes – a spot would appear on the table, flowing and covering (screening or hiding) the numbers; and he would need to mentally "change" the table. The same thing happened when in an auditorium there begins some noise. This noise would instantly turn into "puffs of steam" (or "waifs of steam") or "splashes", and "picking up" the table became even more difficult.

These details made one think that the process of retaining the material is not exhausted by the simple saving of ingenuous viewer traces and that in him extra elements are added, which shows the highly developed synesthesia in S.

If we can trust S.'s recollection about his early childhood – and to them we will need to

return – these kinds of synesthesias could be observed in him even in early childhood.

“When – at about 2 to 3 years of age – said S. – they began to teach me prayers in the ancient Hebrew language, I did not understand them, and these words remained in me in the form of puffs of steam or splashes ... also now I see “when they tell me some kinds of sounds...”

The phenomenon of synesthesia occurred in S. every time when he was given some kind of tones. The same kinds of synesthesical events occurred in him but with even more complexity when he perceived a voice and following the sounds of speech. Here is a protocol of tests that were conducted on S. in the laboratory of physiology of sound of the Institute of neurology Academy of medical sciences:

He is given a tone with a pitch of 30 Hertz and with 100Db. He states that at the beginning he saw a stripe with a width of 12 – 15 cm with an old silvery color; gradually the stripe narrows and moves away from him, and then turns into some kind of object, shining like steel. Gradually, the tone takes on a character of evening light, the sounds continues to ripple in the silvery shine...

He is given a tone with a pitch of 250 Hertz and with 113 Db. S. states: “something like a firework, colored in a pinkish-red color..., a stripe course (rough)..., unpleasant taste, something like brine...its possible to injure one’s hand..”

The experiments were repeated during several days and the same tones stimulated the same accounts.

This means S. really does belong to the remarkable group of people, to which belonged also the composer Scriabin who retained in an exceptional form a complex of synesthesical sensitivity: every sound gave birth to feeling of light and sound and as we will see further also – taste and touch...

The synesthesical experience in S. appeared even when he heard/perceived someone’s voice.

“What a yellow and crumbly voice” – said he one time while conversing with Lev Vygotsky. “There are people, who talk somehow with multiple-voices, those that give whole compositions, bouquets... - he said later – such as voice had the late S. M. Eisenstein, as though some kind flare (blaze) with veins encroached upon me...”

“From the colored hearing I cannot get rid of even to this day... at first appears the color of the voice, then it begins to move away – because it is a nuisance...one time I said a word – I see it, but if suddenly there is a nearby voice – spots appear, insinuating syllables and I cannot make anything out...”

“Lines”, “spots”, “splashes”, appeared not only by a tone, noise, or voice. Every sound of speech immediately produced in S. a vivid viewable symbol, every sound had a viewer form, its color, and its contrasting tastes...the same held for numbers.

“For me 2, 4, 6, 5 – are not only numbers. They have form. 1 – is a sharp number, independent of its graphical representation, its something finished, hard...5 – complete finishing in the form of a conic, tower, fundamental, 6 – is the first before “5”, white. 8 – not guilty, bluish-milk, something like exhaust, etc.

This means that S. did not have that clear boundary, which in each of us separates vision from hearing, hearing from touch or taste... Synesthesia occurred very early and

remained with him until the very late of time; they as you will see further put in a stamp on his perception, understanding, thinking, and they were a substantial (significant) component of his memory.

Remembering “by lines” or “by splashes” came about in those situations in which S. was presented separate sounds, nonsense syllables and unfamiliar words. In these situations S. pointed out that the sounds, voices or words produced some kind of viewable impressions – “puffs of smoke”, “splashes”, “smooth or broken up lines”; sometimes they would produce a feeling of taste on his tongue, sometimes a feeling of something soft or sharp (stinging), sleek or course.

These synesthysical components of every viewable and hearing irritations were in the early development of S. very substantial character of his memory, and only later on – with the development of meaning and symbolic memory – moved to the background plan, continuing however to remain in every recollection.

The meaning of these synesthysical for the elements of the remembering process was that these synesthysical components created a sort of background for every memory, carrying extra “excess” information and guaranteeing exactness of retention: “if for some reason (we will see further) S. reproduced a word incorrectly – the extra synesthysical senses that did not fall into place with the incorrect word, gave him to feel that in his reproduction “something is not right” and made him correct the inaccuracy.

“I usually feel the taste and the weight of a word – and I do not need to do anything else – it is remembered by itself..., but to describe it is difficult. I feel in my hand – something slides (skims) that is oily – from the mass of little points, but very lightweight (unsubstantial) – it is a light tickling in my left hand – and I do not need anything else...” (experiment 22/V, 1939).

The synesthysical feelings, emerging openly from the remembering of a voice, separate sounds or sound complexes, lost their chief (leading) meaning and were put on a second level when remembering a word...

Every word gave rise to (stirred up) a lookable image and the S.’s only difference from an ordinary person was that these images were just much more vivid and stabile, and also that to them joined those synesthysical components (feeling of colorful spots, “splashes” and “lines”) which reflected the sound structure of the word and the sound of the speaker.

It is natural therefore that the viewable characteristics of remembering, those that we saw above, retained their chief meaning at the retention of words...

“When I hear the word “green”, a green pot with flowers appears; “red” – a person with a red shirt appears, that comes towards the pot. “blue” – from the window someone is waving with a blue flag...even numbers stir up images.. “1” – is a proud, lean person; “2” – a cheerful woman; “3” – a gloomy person, I do not know why...

It can easily be seen that in the images that appear from the words and numbers, there are included some viewable representations and those worries, that are characteristic for synesthesia in S. If S. heard an understandable word – these images screen (shield) the synesthysical feelings; if the word was incomprehensible and stirred up no image – S. would remember it in “lines”: the sounds again transformed into colorful spots, lines, splashes, and he imprinted that viewable equivalent, this time from the sound element of the word.

When S. read a long row of words – every one of those words stirred up a viewable

image; but there were many words – and S. “placed” these images in a long row. Very often – and this remained with S. for the rest of his life – he would “place” these images one some kind of path. Sometimes this was the street from his home city, the courtyard of his home, vividly imprinted in him from childhood. Sometimes it was one of Moscow’s streets. Very often he would be walking on this street – not rarely this was Gorky street in Moscow, beginning from Mayakovski plaza, and slowly moving down and placing the images in the houses, gates, and windows of store, and sometimes unnoticeable to himself would end up in his native Torzhke and ended his way...at the house of his childhood...it could be easily seen, that the background he chose for his “mental walks” was similar to the format of dreaming and was different only in that it disappeared at any distraction and just as easily appeared again, when S. encountered the task of remembering the “imprinted” row.

This skill of converting the presented row of words into and observable row of images made it understandable why S. with such simplicity (easiness) could reproduce a long row in the orderly or backward fashion, quickly name a word, which came before or after another: for this he only needed to begin his walk from the beginning or the end of the street or find the image of the needed object and then “peer” on that which was on either side of it. The differences from normal memory were rooted in that that images S. had were exceptionally vivid and stable, that he could “turn away” from them and then “turn towards” them to see them once again.

Convinced that S.’s memory was practically without boundary and that he needed no “memorization”, but only to “imprinting” the images was enough, that he could call up these images after a long duration (we will give an example of how a presented row was exactly reproduced by S. after 10 or even 16 years) and we naturally lost any interest in our attempts to “measure” his memory; we referred to the question from the other end: can he forget and we tried to thoroughly record instances when S. overlooked (missed) one or another word from the reproduced row.

These kind of instances were met, and what is most interesting, they were met quite often.

How can we explain “the forgetting” in a person with such a powerful (capable) memory? How can we explain, further, that in S. we would meet instances of missing the remembered elements and never did we meet instances of an inaccurate reproduction (for example, instead of the required word a synonym or an associative word close in meaning)?

The experiments almost immediately answered both questions. S. did not “forget” the words given to him; he “missed” them during his “comparison” and these misses were always easily explained.

It was enough for S. to “place” the given image in such a position (location) so that it would be difficult for him to “make out” (“discern”), for example “placing” it in a poorly lit area or do it so that the image would blend into the background and became difficult to distinguish (discriminate), how during his “comparison” between the arranged images this image was overlooked, S. “walked by” this image and did not “notice” it.

These misses which we quite often noticed in S. (especially during the first period of observations when the skill of remembering was not completely developed), showed, that they were not defects of his memory, but defects of perception, in other words, they could be explained by not the not well known in psychology neurodynamic qualities of the retention of

traces (retro-proactive braking, fading of traces, etc) and the same well known qualities of viewer perception (resolution, contrast, selection of a figure from a background, lightness, etc.).

The key to his mistakes (errors) lay, therefore in the psychology of perception, but not in the psychology of memory.

We will illustrate his excerpts from multiple protocols. Reproducing a long row of words S. missed the word “pencil”. In another row he missed the word “egg”. In the third – “banner”, and in the fourth – “airship”. Finally, in one of the rows S. missed an unfamiliar word to him “putamen”. This is how he explained his errors.

“I placed the “pencil” near the fence – you know the fence outside – and the pencil merged (blended) with the fence and I walked by it...the same happened with the word “egg”. It was placed on the background of a white wall and blended with it. How could I discern a white egg on a background of a white wall?...and here is “airship”, it was grey and blended with the grey pavement...and “banner” – a red banner, and you know that the building of the Mossovet is red, I placed it near the wall and walked by it...and “putamen” – I do not know what this is...it is such a dark word – I did not discern it...and the street lamp was far away...”

Difficulties

In the presence of all the advantages of this image remembering it gave rise to natural difficulties in S. These difficulties became even more pronounced the more S. was required to remember a vast and continuously changing material – and this became appeared quite often when he left his first-time job and became a professional mnemonist...

Now the second stage begins – the stage of working to simplify the forms of remembering, the stage of development of new ways, which would provide an opportunity to enrich the retention, to make it independent from chance, to provide a guarantee of a quick and exact reproduction or any material in any circumstance.

Edotechnics

The first thing on which S. began to work – was the release of these images from those chance influences, which might make difficult their “comparison”. This task turned out to be very simple.

“I know that I need to be cautious not to miss an object – and I make it larger. I told you before – the word “egg”. It is easily overlooked... and I make it larger...and put it against the wall of the house and better light it with the street lamp...”

The enlargement of the dimensions of the images, their illumination, the correct positioning – all this was the first step of that “edotechnics”, which was characterized by the second stage of S.’s memory development. The other technique was the reduction and symbolism of images to which S. did not refer to in the earlier formation of his memory but which later became one of the main techniques during his period of working as a professional mnemonist.

“In the past to remember, I needed to picture the whole scene. Now all is necessary is to take some kind of conditional (cued) detail. If I was given the word “horseman” all I need to

place his leg together with the saddle...the present images do not appear so clear and fine like in the years before...I try to discern that which is needed..."

The technique of reduction and symbolism of image led S. to a third technique, that gradually acquired a central meaning for him.

Given during his performance sessions thousands of words, sometimes purposefully complex and nonsense, S. needed to transform these meaningless to him words, into meaningful symbols. The most shortest route for him was to place these long and meaningless phrases into their component elements, trying to make sense of the components using a close association....

We will limit ourselves to a few examples that illustrate that virtuosity with which S. used the techniques of semantization and endotechnics.

In December 1937, S. was read the first stanza from "Divine Comedy".

Nell mezzo del camin di nostra vita

Mi ritroval par una selva oscura,

Che le diritta via era smarita,

Ahi quanta a dir qual era e cosa dura.

As always, S. asked to pronounce the words of the given row separately, making between each word a small pause, which were enough to transform the meaningless to him sounds into meaningful images.

Naturally, he reproduced the few stanzas from "Divine Comedy" without any error with those accents with which they were pronounced to him. It was also natural that this reproduction was repeated during a test that was suddenly given to him...after 15 years! These are the paths that S. used for remembering:

"Nel – I was paying the membership fees and there in the corridor was the ballerina Nelskaia; mezzo – I am a violinist; I placed the violinist right next to her; close by – cigarettes "Deli" – that was del; next to that I put camin, di – is a hand showing the door; nos- is a nose, a person walked into the door and the door closed on his nose; tra – he raises his foot to cross the door and there is a baby – that is vita, vitalize; mi – I placed a Jew that keeps saying "mi has nothing to do with this"; ritrovai – a retort, a transparent tube that disappears and a Jewish woman is running and screaming "vai" – that is vai. She is running and at the corner of the Lubyanka – there is walking her father – per. On the corner of the Suharevki a police officer is standing upright like the number one – una. Next to him I place a stage and on that stage Silva is dancing; but so that she was not Silva – underneath her the stage is breaking – that is the sound "e"...

We could continue the excerpts from the protocols but the methods of remembering are quite clear from this above example. It seems that the chaotic flow of images would only complicate the task of remembering the four stanzas of the poem; but the poem was given in a foreign language and the fact that S., spending only a few minutes listening to the composition, and could without error reproduce the given text and repeat it after 15 years, "comparing" that meaning with the used images shows what kind of importance to him became these methods...

The reading of these protocols may produce a natural impression of the vast, but not very logical work, that S. makes to remember the given material.

There is nothing more far from the truth that this kind of impression. All the vast and virtuous work, the many methods of which we have described above, give S. a characteristic of

working with images, or like we stated – edotechnics, that is far from any logical reworking of given material. This is probably exactly why S. is extremely capable of arranging the given material into meaningful images and at great lengths (details) becomes very weak in logically organizing the retained material, and the methods of his edotechnics turn out to have nothing in common with the logical mnemotechnics, the development and psychological structure of which was the object of study of such a large number of experiments. This fact can be easily seen from that remarkable dissociation of the vast image memory and the complete disregard of any possible methods of logical retention, which could easily be shown in S.

We will bring forward only two examples of our experiments dedicated to this task.

In the beginning of our work with S. – at the end of the twenties – Lev Vygotsky offered him to remember a row of words, which included a few bird names. After a few years – in 1930 – A.N. Leontev studying then the memory of S., offered him a row of words, which included a few names of some liquids. After these tests were conducted, S. was asked to separately rename the bird names in the first and the names of the liquids in the second.

During the that time S. remembered mainly in “lines” – and the task of sorting out the words from one category turned out completely beyond him; the fact that in the given categories there were similar words was unnoticed and only became aware of them after he “compared” all the words and placed them between them...

We said of S.'s remarkable memory almost everything that we learned from our experiments and conversations. It became so clear to us – and remained incomprehensible. We learned much about its complex structure..and still how little we know about this remarkable memory! How can we explain that reliability with which the images are retained in S. for many years, if not for decades? What explanation can we give for the hundreds and thousands of rows which he remembered and that do not slow down one another, and that S practically could return to any one of them after 10, 12, 17 years? Where did this unextinctable reliability of traces come from?

His unique memory, without argument will remain his genetic and individual characteristic and all the methods that he uses only build on this memory, and do simulate it with different methods.

Up to this point we portrayed the remarkable qualities that S. showed in remembering separate elements – numbers, sounds, and words.

Do these qualities remain during the transition to remembering much more complex material – lookable situations, texts, faces? S. himself not once complained at the bad memory for faces.

‘They are so unstable – said he – they depend on the mood of the person, from the moment of the meeting they constantly change, get mixed up in the tinges, and that is why they are difficult to remember’

In this case the synesthesical feelings, which in earlier descriptions during different experiments guaranteed the required exactness during recollection of the retained material, here transformed into their opposing traits and began to hinder the retention in memory. The work in contrasting existing points of recognition which every one of us does during remembering of faces (a process which is still poorly studied in psychology) probably vanishes in S. and the perception of faces comes closer to that of perceiving constantly changing light

and shadow, which we observe when we sit near a window and look at the constantly changing river waves. And who can “remember” the constantly changing river waves?

Not more surprising was the fact that remembering whole excerpts turns out not to be so remarkable in S.

We already said that during our first acquaintance with S. he gave an impression of a somewhat unprepared and delayed person. This appeared quite clearly when he was read a story that he was supposed to remember.

If the story was read quickly – one S.’s faces there appeared an expression of perplexity which gave way to an expression of embarrassment.

“No this is too much... every word gives rise to images and they find each other and there is chaos...I cannot make anything out of it..and there is also your voice and also spots...and everything blends together...”

That is why S. tried to read slowly, separating the images by their places, and as we will see further, completed such a task, that is much more difficult and exasperating than the one we were doing: for us every word of read text did not call forth visual images and the separation of the more significant meanings, carrying the maximum information, goes by us in a much more simple manner than in S. with his image and synesthesical memory.

“In the previous year – we read from one of the protocols of conversation with S. (14 September 1936) – we read the task: “A tradesman sold this much fabric...” As soon as we pronounced “tradesman” and “sold” I see a store and the tradesman standing behind the counter...he is trading drapery...and I see a customer standing with his back to me..I am standing in the front door and the buyer is moving a little to the left...I see the drapery and see some kind of account book and all the details that have nothing to do with the task...and I cannot hold on to the main idea...”

Art of Forgetting

We came close to the last question that we needed to answer, characterizing S.’s memory. This question by itself is a paradox and the answer to it remains unclear. And despite this we need to refer to it.

Many of us think: how can we find a way so that we can remember better. No one works on the question: how is it better to forget?

With S. the opposite is true. How to learn to forget? – this is the question that has worried most of all...

S. very often gives a show every evening with several sessions and sometimes these sessions take place in the same auditorium, and the tables with numbers are written on the same board.

“I am afraid so that the different sessions do not mix up. That is why I mentally erase the board and cover it with a screen, which is completely opaque and impenetrable. This screen I kind of take away and hear its crunching. When the session is finished I wash away everything that was written, walk away from the board and mentally take away to screen..I converse and during this time my hands sort of crumple this screen. And despite this as soon as I get near the board these numbers can appear again. A little similarity and I cannot notice how I begin to read

the original table.”

...S. went further; he began to throw away and then to burn the papers on which was written the material he needed to forget...

However the “magic of burning” did not help and one time, throwing the paper with the written numbers into a burning oven, he saw that on the remaining burned paper the traces still remained and he was in despair: it means that even fire cannot erase the traces of that which was supposed to be destroyed!

The problem of forgetting, which did not allow any naïve methods of burning papers, became one of the most tormenting problems with S. And here came a solution, the idea of which remained incomprehensible equally to S. and to those who were studying this person.

“One time – this was 23 April – I was performing 3 times per evening. I physically was exhausted and began to think how I will perform a fourth time. The first three tables will appear...this was for me a terrifying question...Now I will look whether the first table will appear or not...I am afraid that this will not happen. I want to – I do not want to...and I begin to think: the table does not appear now and it is understandable why – because I do not want it to! Aha!!... Consequently if I do not want to that means it does not appear. which means all I needed was to recognize this.”

It is remarkable but this method had its effect. Its possible that here played its role the fixation on the absence of the image and its possible that this turning away from the image using self-thought also – but is it necessary to guess at something that will remain unclear? But the result is there.

That is all that we can say about the remarkable memory of S, about the role of synesthesia, about the methods of mnemonics, and the mechanism of which to this day remain unclear...