The interrelationship between the literary and medical representations of cases of prodigious memory, as depicted by J. L. Borges, Alexander Luria, and Oliver Sacks

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In 1959 the British scientist and novelist C.P. Snow delivered his inaugural lecture entitled ‘The Two Cultures’ in which he described the polarity between the intellectual disciplines of literature and science, and lamented their inability to connect. Snow also criticised the British education system for promoting literary culture yet failing to appreciate the equal value of scientific knowledge. The ‘two cultures’ argument had originated in the nineteenth century between Matthew Arnold and T.H. Huxley, and as a result of his polemic, Snow received an abrasive reaction from the literary academic F.R. Leavis.¹ One of the central issues of the debate is that literature is unique in its ability to communicate the essence of human experience, whilst science can only measure or inform us of human functions. Yet both fields are concerned with the human condition, so it is likely that some aspects will be shared, especially given the singular culture in which both writing practices are embedded. However, Snow reigned a controversial debate that has not only continued into the twenty-first century but has become even more important with the development of the comparatively new discipline of medical humanities. Following on from Snow’s lecture, in 1981 the cultural historian George S. Rousseau claimed that scholars have shown less interest in the interaction between ‘literature and medicine’ than ‘literature and science’, because ‘literature and medicine’ is often unrecognised or problematical, yet it is actually more profound.² Rousseau also claimed that the inter-relationship between the two often appears to be following a sole trajectory - ‘from medicine to literature’ - with an author’s acquired knowledge of contemporary medicine influencing his narrative. The period in which a novel is written usually reflects the medical preoccupation of its time and, as Susan Sontag argued in Illness as Metaphor (1978), it popularises and mythologises the given condition; this seldom works the other way, from literature to medicine, although literary language and metaphors are often incorporated into medical accounts.³ However more recently, in Medicine, Health and the Arts (2013), Anne Whitehead advances Patricia Waugh’s suggestion that ‘imaginative fiction’ can enhance science by creating a space in which ideas may be explored and familiar topics can be reconsidered.⁴ This article will compare narratives on prodigious memory from both fields using a fictional tale offered by the Argentine author J.L. Borges, a medical case study from the Russian neurologist A.R. Luria, and a case study documented by Oliver Sacks, Anglo-American professor of neurology and psychiatry. Consideration will be given to the authors’ treatment of prodigious memory and whether it is portrayed as a disability or a gift, also indicating whether the fields of literature and (scientific) medicine are integrated or separated by the respective narratives, with regard to Snow’s thesis and the ideas presented by Rousseau, Whitehead and Waugh.

In each account of prodigious memory the authors present a tableau of exceptional abilities that operate using collective techniques. They also suggest that whilst extreme memory is remarkable it can be detrimental to ordinary life; this is a perspective that empirical case studies rarely explore in depth. In Borges’ short story ‘Funes the Memorious’ in Labyrinths (1942), Funes’ memory enables him to appreciate the minutiae of life that others cannot see, for example every hair on a horse or at a glance ‘all the leaves and tendrils and fruit that make up a grape vine’.⁵ He has highly specific recall and can remember details from a particular date and time; for instance, ‘he knew by heart the forms of the southern clouds at dawn on 30 April 1882’. In common with Luria’s mnemonist, Solomon Shereshevsky, (known in the text as S.) Funes can remember ‘every leaf of every tree of every wood’ including every single occasion on which ‘he had perceived or imagined it’. He also exhibits synaesthesia, the stimulation of a sense or part of the body that occurs simultaneously with another,
and this faculty meant that ‘each visual image was linked to muscular sensations, thermal sensations, etc’. Funes’ memory techniques are not explained but his innate skills are further stimulated by central nervous system damage following an accident, which along with his chronometric ability, hint at the medical condition of ‘savantism’.  

(Borges 91-93) Borges often uses reflective or labyrinthine techniques in his fiction and the intricacy of his story ‘Funes the Memorious’ echoes its subject’s complexity, creating a profundity that medical studies cannot replicate. The tale itself is a memory, a tribute to Funes, containing further ironies that emphasise the paradox of his condition. For example as a gaucho, Funes represents freedom, disorder and illiteracy, the narrator initially recalls him ‘running along a high place’ yet later remembers him ‘motionless’ and restrained by ‘certain incurable limitations’. Funes occupies his time cataloguing historical cases of exceptional memory and in particular recounts Pliny’s ancient discourse on memory, citing that nothing, which is heard, can be retold in the same words. More significantly, the narrator compares him to ‘a precursor of the supermen, “a vernacular and rustic Zarathustra”’, like the ‘Superman’ conceived by the philosopher Friedrich Nietzsche; with his restrained life cut short Funes is anything but akin to Zarathustra, yet this association is significant and it foreshadows his fate.  

(Borges 87, 89)

In Untimely Meditations (1873), Nietzsche discusses the importance of forgetting which is ‘essential to action of any kind, just as not only light but darkness too is essential for the life of everything organic’. In ‘Funes the Memorious’ this counterbalance of remembering and forgetting manifests through the motif of darkness. Funes sits ‘in the dark’, his voice emanates from ‘the darkness’, and he perceives the unfamiliar as ‘homogeneous darkness’, yet he is deprived of the cerebral darkness that is indispensible to life. This vital equilibrium is impossible for him because ‘anything he thought of once would never be lost to him’. Funes’ inability to discard unnecessary images or memories renders his mind ‘like a garbage heap’ because it contains ‘more memories than all mankind’ and the distress of this compels him to imagine suicidal oblivion ‘at the bottom of the river’. Indeed Funes personifies Nietzsche’s belief that when man is compelled to live in this manner ‘there is a degree of sleeplessness, of ruminaton, of the historical sense, which is harmful and ultimately fatal to the living thing’. True to this edict his sleepless life of infinite cogitation becomes unsustainable and he succumbs to a premature death. (Borges 90, 92, 94) The contradictory nature of Funes’ brilliant, yet pointless abilities is reiterated throughout Borges’ tale. For example Funes develops a numbering system that ascribes a name to each figure, such as ‘Máximo Pérez’ in place of ‘seven thousand thirteen’, and a language system in which ‘each bird and each branch would have its own name’; both are discarded because they are ‘too general to him, too ambiguous’. Although the projects seem commendable, they are in fact ‘useless’, ‘senseless’, thus emphasising the absurdity of his condition through his inability to generalise. Borges also highlights the necessity of generalisation, categorisation and order.  

(Borges 91, 93, 94) Borges cannot understand ordinary concepts such as mathematical shapes, and without the ability to generalise Funes is unable to recognise. For example the generic symbol ‘dog’ represents a ‘diverse size and form’, but Funes perceives each nuanced image of a dog as a completely new entity that is disconnected to the previous one. Similarly each mirror image of his face or hands represents an entirely new visual experience that ‘surprised him every time’. Moreover, recognition along with remembering and forgetting may be considered an essential component in the operation of healthy memory; ‘Funes the Memorious’ movingly conveys the difficulty of existing without this function.  

(Borges 91, 93, 94)

Borges explores the metaphysical concepts of time and space through the subject of prodigious memory, thus exemplifying the innate interface between literature and science and the singular nature of human experience. For Funes and S. time is a linear series of disconnected moments that elapse into an interminable bank of memories, ostensibly without termination, to infinity. Funes exists in
the ‘eternal now’, the infinite instant that is both chaotic and ‘almost intolerable in its richness and sharpness’.\textsuperscript{14} He cannot make a distinction between past and present and his suspension in time is especially ironic given that before his accident he had the knack of ‘always knowing what time it was, like a clock’. (Borges 88, 91) Funes considers his memory to be a gift; he claims to have woken up from the typical human condition of being ‘blind, deaf, addle-brained, absent-minded’ and seems unaware of his former skills, his ‘exact perception of time’ and ‘his memory for proper names’. Funes is ‘singularly remote’ he exists, as ‘a perpetual prisoner’ yet he feels his immobility is ‘a minimum price’ for the gift of ‘infallible’ memory and perception. Indeed, in all three accounts of prodigious memory it is the narrator who expresses the deep adversity of the condition, not the subject himself, thus illustrating the intermediate role of the practitioner in the case study. (Borges 87, 89, 91)

Although scientific knowledge of prodigious memory circulated before Borges’ story was published, Borges anticipated the real-life case that Luria presents in \textit{The Mind of a Mnemonist}, and he widely detailed the features of prodigious memory before science documented it. Luria later affirmed that Borges’ ‘imaginary portrait’ of memory in ‘Funes the Memorious’, ‘repeated’ some of his observations of S.\textsuperscript{15} This raises Rousseau’s argument that literature does not tend to inspire science or medicine. Debate has focused on \textit{The Mind of a Mnemonist}’s impact on ‘Funes the Memorious’, yet it’s possible that Luria drew inspiration from Borges’ tale; however, the influence of Borges on Sacks’ account, as discussed later, is unquestionable. Furthermore, in the recent text \textit{Borges and Memory} the neuroscientist Rodrigo Quian Quiroga explains how the story of ‘Funes the Memorious’, ‘with astonishing clarity ended up sorting the pieces of the puzzle I had been working on’, in fact Quiroga’s discourse on Borges and his connection to neuroscience represents an ideal literary-scientific symbiosis.\textsuperscript{16} Although Borges’ tale was published fifty years before Quiroga’s work, it seems twenty-first century science may profit from early twentieth century fiction.

Alexander Luria published numerous scientific texts during his medical career yet his later writing, which he categorised as ‘romantic science’, established the medical case study as a distinctive literary genre. Luria claimed that ‘classical’ scientists took a reductionist approach by focusing purely on observable features in order to formulate scientific laws, a criticism that invokes aspects of the two cultures debate. In contrast, ‘romantic scholars’ considered the whole person and aspired to ‘preserve the wealth of living reality’ with all its richness.\textsuperscript{17} Luria’s combination of these two approaches creates a unique and insightful account of S.’s memory in \textit{The Mind of a Mnemonist} that established his humane patient portraits as a ‘part of literature as well as science’ (Borges xii). \textit{The Mind of a Mnemonist} is a medical study of Solomon Shereshevsky’s prodigious memory yet Luria uses literary tropes to enrich his work and remarkably, its epigraph quotes stem from the nineteenth century tale \textit{Through the Looking Glass} by Lewis Carroll. Luria states that alongside Alice and the reader, he aims to penetrate the ‘cold surface of the looking glass’ and into the depths below; he later reveals that his ‘amazing’ findings invoke feelings akin to Alice’s when she ‘found herself in a strange wonderland’.\textsuperscript{18} It is interesting that as a scientist, Luria humbly considers his curiosity to parallel that of a fictional child, which could not be further removed from the sphere of clinical medicine. Moreover, the adoption of literary tropes validates Whitehead and Waugh’s notion that imaginative fiction can encourage new approaches to established medical customs and themes, and ironically Luria’s case study was published just nine years after Snow’s lecture.

Like Borges’ fictional tale, Luria’s account presents a tableau of exceptional abilities as observed in his thirty-year study of S. One of the most significant aspects of S.’s memory is that it operates, like Funes’, with highly complex synaesthesia. In S.’s mind, any sound ‘immediately produced an experience of light and color’, with each tone having ‘its own distinct form, color, and taste’. Synaesthesia can stimulate physiological functions and S. possesses a ‘far greater control over his
own body processes’ than ordinary people, for example, he can raise his pulse by imagining that he is running for a train. But conversely synaesthesia impairs S.’s life and makes it difficult for him to ‘locate any dividing line between one sensation and another, or between sensations and actual experiences of events’. Furthermore, S.’s memory is limited because it can only function with visual images; if he cannot immediately see words or numbers, then he converts elements into pictures. Interestingly, S. tries to create an original numerical system and assigns a picture to each number for instance ‘2 is a high-spirited woman; 3 a gloomy person’, which is rather like Funes’ hopeless venture.\(^9\) Like Funes, S.’s extraordinary gifts reveal a paradox of ability and disability as an inherent aspect of his condition. (Luria 16, 21, 24, 25, 80,139) S.’s exceptional memory gifts him with a perspicacity that others can ‘only dimly imagine’, but whilst this vision allows him to ‘become more deeply involved in a narrative’ conversely, the profusion of images can inhibit interpretation and easily ‘lead him astray’. Similarly, synaesthesia aids S.’s recall yet when it comes to recognising faces the patterns of ‘light and shade’ confuse him with their variability. His copious synaesthetic memories also mean that he continues to be ‘flooded and disturbed by the images of [his] childhood’, which suggests a loss of control. S. cannot distinguish general information so rather than being guided by logic, as is normal, he is directed by a series of overwhelming spontaneous images. Luria evaluates that S.’s ‘wealth of thought and imagination were curiously combined with limitations of intellect’, which are not only frustrating but impede his cognitive development so that it could not mature beyond that of an adolescent. In fact Luria’s investigation reveals that virtually all of S.’s skills are incompatible with normal life and come at the vast expense of necessary functioning. (Luria xxiv, 64, 96, 97, 113, 131, 133) Like Borges, Luria communicates the infinite capacity of prodigious memory and the fundamental equilibrium between remembering and forgetting. S.’s recall remains constant years after processing information, if he fails to remember something it is due to initial processing problems rather than forgetfulness.

In fact there are no limits to the stability of S.’s impressions, which remain ““imprinted” in his memory just as they [first] appeared’. Luria is reduced to ‘a state verging on utter confusion’ on realising that he cannot scientifically quantify S.’s memory because it ‘had no distinct limits’. Moreover, S.’s challenge, like Funes’, is not one of capacity or retrieval but rather revolves around how to forget, or in other words, how to fail to recall. As the psychologist William James stated, ‘one condition of remembering is that we should forget’.\(^{10}\) S.’s failure to forget leaves him ‘desperate’ to discard the superfluous memories that ‘became a torment’. Echoing Funes’ ‘garbage’, S. also possessed a ‘junk heap of impressions’ - copious amounts of indelible images and memories that were impossible to annihilate. When S. later becomes a professional mnemonist performing for public entertainment, he attempts to erase surplus memories because he fears they will encumber his performances, he believes that by writing them down he can negate the compulsion to remember them. This proves unsuccessful but S. develops an ‘inexplicable’ ability to inhibit the free recall of images which allows him some control, and the sensation of being ‘free’. (Luria xxii, 11, 20, 70-72) Unlike Funes and the twins, when S. becomes a professional mnemonist he decides to adapt his methodology through ‘training’ in order to manage the large quantity of meaningless information given to him during a performance. S.’s techniques ‘gradually became enriched with new devices’ and ultimately ‘presented quite a different picture psychologically’. S. wishes to simplify his method for rapid recall and he does this by practicing eidotechnique, a ‘shorthand’, or abbreviated system that extracts a small detail which stimulates the recall of the whole image. His eidetically produced images are apparently ‘not as well defined or as vivid as the earlier ones’ but the technique allows him to convert ‘senseless words into intelligible images’. Interestingly, Borges describes this system inversely in ‘Funes the Memorious’ in order to inhibit total recall, whereby Funes ‘decided to reduce each of his past days to some seventy thousand memories, which would then be defined by means of
ciphers’. (Borges 93) However, like his other projects the interminability of Funes’ task renders it hopeless. (Luria 15, 42, 43) Luria notes that S. appeared to be discontented for the duration of his study and seemed to be waiting for something intangible. Although physically able, S. is actually more constrained than the incapacitated Funes, whose life is portrayed as one of acceptance and pride, with tacit frustration. (Luria xxiv) S.’s experience validates Nietzsche’s notion that without the ability to settle in the moment, forgetful of the past, happiness will remain elusive. Luria’s meticulous and compassionate account allows parallels to be drawn between the fictitious and the factual cases of prodigious memory, thus illustrating how literature and medicine can provide the ‘profound’ insight that Rousseau claimed.\(^{21}\)

Oliver Sacks described *The Mind of a Mnemonist* as ‘remarkable’ because it conveyed ‘the pathos and the poignancy and the drama, and all the feeling of a novel’ and presented ‘science and storytelling as complimentary’.\(^{22}\) Sacks intended to imitate Luria’s romantic science by producing ‘portraits’ of his own patients including the phenomenon of prodigious memory as documented in chapter twenty-three entitled ‘The Twins’, in *The Man Who Mistook His Wife for a Hat* (1985). Sacks’ epigraph asserts that ‘talk of diseases is a sort of Arabian Nights entertainment’ and with further allusions to fiction, the preface compares patients to ‘archetypal figures’ with ‘lives’ displaying ‘a quality of the fabulous’.\(^{23}\) Imitating Luria’s use of Carollian tropes, the twins are rather disparagingly introduced to the reader as ‘absurd little professors’, a ‘sort of grotesque Tweedledum and Tweedledee’, with mannerisms like ‘pantomime puppets’. According to Sacks, popular reports had previously concluded that there was ‘nothing much to them’ except for their ‘remarkable “documentary” memories’. Like Luria, Sacks endeavours to explore beyond the ‘obvious and testable “surface”’ and penetrate into the ‘depths below’ - with significant results. (Sacks 204, 205) The twins have a condition known as savant syndrome, which often includes the phenomenon of prodigious memory amongst other distinctive traits. The savant condition was widely publicized by Dustin Hoffman’s character Raymond in the 1988 film *Rain Man*.\(^{24}\) According to Sacks the twins are known as ‘calendar calculators’ and unlike S. they have already been the subjects of extensive medical study and they ultimately reside in a US medical centre for much of their lives. Like Funes and S. the twins demonstrate extraordinary abilities and can calculate the day on which any date in the past or future falls, for example ‘the date of Easter during the […] period of eighty thousand years’. They can also recall the weather or event that had occurred on any date in their lives after four years of age. Researchers had formerly attributed their technique to ‘pure calculation’ or computation, but Sacks perceives their eye movement as ‘the look of “seeing”’ of ‘scrutinising, an inner landscape’. Unlike Luria, he does not consider the twins’ childhood influences or the wider context and his investigation centres exclusively on observation and case analogies. Significantly, scientist William A. Horwitz et al had previously concluded that the twins’ abilities were due to ‘the prodigious and exclusive effort that they have devoted to the calendar for 15 years’, an important fact that Sacks overlooks.\(^{25}\) (Sacks 206) Like Luria and Borges, Sacks considers the shortcomings of the twins’ abilities such as the distress of remembering unhappy personal experiences, but he does not mention whether it is a problem for them in terms of the remembering-forgetting balance. Apparently the twins’ recollections invoke the ‘poignant anguish of childhood’ yet are delivered in a ‘documentary’ manner indicating ‘no personal relation, no living centre whatever’. Although this is representative of ‘obsessive or schizoid types’, Sacks advocates that their detachment suggests they ‘never had any personal character’ and that it supports the notion that they use eidetic memory, like Funes and S., but the association is not explained. (Sacks 207) Despite their incredible calculating feats, Sacks reports that the twins ‘cannot do simple addition or subtraction with any accuracy, and cannot even comprehend what multiplication or division means’. (Sacks 206) This suggests that like Funes and S., they have an inability to understand abstract concepts, seemingly an inherent aspect of their condition and as Sacks posits, surely an obstacle to
complex calculating. Nevertheless these peculiarities are consistent with other savants, whose abilities are characteristically deep and narrow and seemingly incongruous. Moreover, it had previously been suggested that the twins had ‘context-dependent division abilities’, which could only be clearly determined by further empirical testing. Either way, the inconsistency impels Sacks to look further into alternative explanations.

Sacks always observes the twins at the medical centre where they reside, and during one encounter a box of matches falls and the twins instantly call out the total number of matches strewn on the floor, including its multiple of three. The incident supports Sacks’ notion that the twins could literally ‘‘see’’ the properties of a number and could trisect it into its factors - ‘37, 37, 37, 111’; when asked how they do it they confirm his observation: ‘we see it’. The key to their memory is apparently ‘‘visualising’’ – of extraordinary intensity’, Sacks admits, ‘there is no doubt, in my mind’ that they can ‘retrieve’ almost anything from a ‘prodigious panorama’. He believes the twins’ memory for digits is ‘remarkable – and possibly unlimited’: like Funes and S., they seem to access an ‘immense mnemonic tapestry’ of infinite proportions. He also directly compares their abilities to S.’s as described in The Mind of a Mnemonist, whilst noting that the twins do not have his synaesthetic and organisational skills. (Sacks 208, 210) In his account of the twins, Sacks ruminates on the relationship between music and memory and reasons that they ‘must have “sense” in their numbers’ like ‘a musician must have harmony’. Apparently the twins’ visual capacity endows them with an ability to see ‘relations of form’ including a ‘“constellation” of numbers’. Sacks considers it ‘likely, or certain’ that they are dealing with ‘real’ properties, which are felt as ‘forms’ or ‘tones’ in their imagination. (Notably, S.’s synaesthesia also included tones, which in turn stimulated visual images.) Again Sacks deviates from the previous scientific explanation of ‘rote memory’ proposed by Horwitz et al. yet remarkably his explanation is inspired by his recollection of Borges’ ‘Funes the Memorious’,28 According to Sacks, the twins’ are accessing a visual ‘numerical “vine”’ that parallels Funes’ grape vine complete with ‘number-leaves, number-tendrils, number-fruit’; this allusion also implies that they use a system of eidetic memory. This invokes Rousseau and Whitehead’s discussion of the influence of literature on science. Imaginative fiction plays a crucial role in Sacks’ theory and encourages him to reconsider the established medical ideas; it enriches both the form and content of his tale. (Sacks 208-210, 214, 216)

In his autobiography, Luria’s discourse on ‘romantic science’ states that ‘sometimes logical step-by-step analysis escapes romantic scholars, and on occasion, they let artistic preferences and intuitions take over’. This may be the case in ‘The Twins’, which charts Sacks’ course of elucidation alongside his insight into the twins’ memory. Sacks counters previous explanations of the twins’ methodology boldly declaring that ‘they are not calculators, and their numeracy is “iconic”’. Interestingly, although the twins’ condition as savants differentiates them from Funes and S., their powers are attributed to the same phenomenon: ‘visualisation’. Like Funes and S. with their amazing acumen and their infinite visual experiences, the twins are deemed to be envisaging an immeasurable universe, ‘a whole world’ of iconic numbers. Unlike the other narratives Sacks’ account appears to be highly subjective, as a former ‘number brooder, a number “see-er”’ himself he identifies with the twins’ and their ‘peculiar passion for numbers’. Sacks intuits that their calculations use prime numbers and he tests his hypothesis by interacting with them, again in natural mode, as opposed to the test conditions usually employed by empirical scientists including Luria. However Sacks’ informal and opportunistic experiment perhaps allows him admission into the twins’ (ostensibly) insular world at a deeper level. The results are limited but significant; by some ‘unimaginable internal process’ the twins determine prime numbers up to twenty digits, and yet there is ‘no simple method, for primes of this order’. Unfortunately the question of how they do this remains unanswered. (Sacks 210, 211, 213, 215)
Sacks’ results offer a profound perspective on savant skills, yet extraordinarily he ‘had no way of checking’ the calculations beyond ten figures and could not verify his findings with other empirical evidence. (Sacks 213) When challenged, Sacks later admitted that his resources were ‘lost’ and his data may have been limited to just ‘8-digit’ primes. As Luria cautioned, intuition can sometimes take over and Sacks creates a fascinating tale with ‘The Twins’, but its scientific shortcomings may diminish some of its value as a faithful medical representation of prodigious memory. Furthermore, Sacks’ narrative voice is a distinct presence in his account, as is his active participation in procedures. This is uncharacteristic of medical case studies and differs from the methodology used in The Mind of a Mnemonist in which the patient speaks, through his transcripts, alongside the physician. It could be said that the twins are disadvantaged by their condition by virtue of their solitude and incompatible traits. Sacks claims that they ‘live exclusively in a thought-world of numbers’, with no interest in ‘the stars shining, or the hearts of men’; numbers are their only ‘friends’ in a world of isolation. Yet the twins are not imprisoned by their memories or incapacitated by a remembering-forgetting imbalance like Funes and S., their memories appear to enhance their lives and allow them to communicate with one another uniquely, and like S. it enables them to connect with others through demonstrations. In fact it is the only way in which they truly connect and it provides their lives with meaning and purpose; they are proud of their skills, they are defined by them and admired for them. Later in their lives the twins are deliberately separated for medical reasons, but once parted, they are deprived of their ‘numerical “communion”’ and apparently fail to flourish. However speculative, Sacks’ account remains true to his endeavour to disclose the ‘quality of the fabulous’ while it existed. (Sacks 217, 218, 220)

In conclusion, despite their widely differing contexts the literary and medical representations of prodigious memory reveal a number of comparable traits and a few contrasting ones. All three cases present highly specific memory recall. Funes and S. both have remarkable acumen and recollection, the twins also recall dates and events, as well as demonstrating complex arithmetic. In each case the ability to ‘see’ by visualisation is a key component of prodigious memory. Funes and S. retain copious numbers of vivid images that are virtually impossible to erase, whilst Sacks posits that the twins’ abilities are not computational as previously claimed but are due to visualisation and iconicity. Eidetic methods are represented variously in each account. S. adopts eidotechnique in order to assist at performances, although eidetically formed images were less distinct than ordinarily formed images. Interestingly, Funes uses the technique by employing ciphers in order to try to reduce the vast quantity of memories he retained. The twins were thought to use eidotechnique by envisaging huge figures as a number-vine that resembled the vision of Funes’ grapevine. The system of synaesthesia is presented in Funes and S.’s cases but not in the twins’. Both Funes’ and S.’s synaesthesia portrayed a connection between visual images and physiological sensations, with S. having the capacity to alter his physiology. Synaesthesia could be highly complex and particularly detrimental to normal functioning, as shown by S. Borges and Luria emphasise the fundamental reciprocity between remembering and forgetting, highlighting the importance of dispensing with memories and the debilitating effects of an imbalance. The inability to obtain this balance leaves Funes (and S.) almost suspended in time. All three cases reveal an intrinsic problem with prodigious memory, the inability to generalise or understand general concepts, which limits normal functioning. Each one explores aspects of ability, which are countered by disability, and reveal the inherent paradox of extreme memory as simultaneously a gift yet also a curse. Funes’ talents are extraordinary but ultimately useless to him and his impractical life results in an untimely death. S.’s abilities are well regarded but he is ultimately dissatisfied and unsettled, his decision to become a performer creates further problems. The twins’ abilities draw much admiration and are particularly advantageous because they facilitate communication, however the medical establishment defines them as abnormal.
Consequently these qualities are the source of their indefinite institutionalisation and harmful separation. In all three cases extreme memory causes incarceration and social isolation; although senses are enriched, lives are sadly impoverished.

Borges, Luria, and Sacks each present meaningful accounts of prodigious memory that demonstrate a strong interface between literature and medicine. Literary fiction is traditionally associated with creativity and subjective insight, whilst scientific discourse tends to be the opposite with its prosaic, narrow and objective style. Luria combines these traditions in his comprehensive medical study of Shereshevsky that remains highly regarded in both fields. Although following Luria’s tradition, Sacks’ study lacks Luria’s empiricism and sensitivity and sometimes relies on conjecture and creativity, rather like a work of fiction. In this sense it does not accomplish the literary-scientific equipoise that *The Mind of a Mnemonist* achieved, yet it endures as a popular and fascinating account. ‘The Twins’ does however, identify the twins’ methodology as one of ‘seeing’ rather than computing, which not only advocates a parallel to non-savant mnemonists, but also advanced further scholarship on the topic. Sacks’ account in particular, emphasises the connection between textual form and content, illustrating how the authorial agenda may shape the representation of its subject, in this case, prodigious memory. The lucidity and precision of Borges’ visionary tale is reinforced by the content of ‘The Twins’ and by the testimonials from Sacks, Luria and more recently, Quiroga. Ironically Borges’ legacy is just as valuable in the advancement of prodigious memory as that of the medical case studies. This refutes Rousseau’s notion that literature seldom influences medicine yet it supports Whitehead and Waugh’s ideas on the value of imaginative fiction; however, it should be noted that Sacks’ text was published after Rousseau’s 1981 analysis. As Rousseau and Sontag claimed, literature is influenced by the science of its time but equally, it can enrich scientific understanding and encourage new approaches, thus indicating a reciprocity that C.P. Snow would surely approve of.


9 Nietzsche, p. 62.


12 Ricoeur, p. 39.


16 Quian Quiroga, pp. 5, 7.

17 Cole et al., p. 174.


20 Quian Quiroga, p. 21.

21 Quian Quiroga, p. 39.


24 Wisconsin Medical Society. [20 March 2014]


30 Cole et al., p. 175.

31 Makoto Yamaguchi. ‘On the savant syndrome and prime numbers’. Undated. [26 October 2013 & 8 January 2014]
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