

**Rodrigo Quian Quiroga. *Borges and Memory: Encounters with the Human Brain*. Trans. Juan Pablo Fernández. Cambridge (Mass.): Massachusetts Institute of Technology Press, 2012. ISBN: 9780262018210**

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In “The Circular Ruins” Argentine author Jorge Luis Borges pursues the implications of (what we today might call) an intertextual view of reality to a somewhat vertiginous conclusion, entertaining the notion that one may not “be a man,” but “the projection of another man’s dream”<sup>1</sup> that we may be little more than an assemblage of the various beliefs, anxieties and obsessions that gripped generations prior to our own. A similar logic applies to books: no one person writes any book, nor is any reading of it independent of all other readings. Inasmuch as “universal history is the history of the various intonations of a few metaphors,”<sup>2</sup> as Borges reminds us, quoting Pliny the Elder: “*ut nihil noniisdem verbis redderetur auditum*” [nothing that is heard can be repeated with the same words].<sup>3</sup> Writer and reader are each a combination of an infinite number of impressions, experiences, and ideas, both remembered and forgotten.

Such is the case for neuroscientist Rodrigo Quian Quiroga, author of *Borges and Memory: Encounters with the Human Brain* (2012), whose efforts to understand the functions of human memory were clarified in a story written by Jorge Luis Borges over 70 years ago. Quian Quiroga details how



Borges' story *Funes, El Memorioso* ("Funes, His Memory" [1998]) contributed to his understanding of the workings of memory in the human brain. Quian Quiroga's book is an instructive example of the benefits of paying attention to the broader cultural context in which all research exists (science and humanities alike), and how solutions to questions may lie beyond one's immediate professional sphere.

In the course of his research into "how memory works," Quiroga and his colleagues were "lucky enough to find neurons in the human brain that respond to abstract concepts, ignoring particular details" (5). The key to abstraction and hence the creation of memories, is, paradoxically, the ability to forget. Quian Quiroga found that neurons in the hippocampus were responsible for the conversion of "raw sensory data" into (factual) memory. The neurons in the hippocampus encode perceptions into abstract form by identifying their relation to abstract concepts already present in the mind, thereby placing disparate fragments of information into a coherent order. The identification of associations between data and concepts allows the inclusion of the former into a pre-existing body of knowledge, thereby becoming a part of an existing memory-structure.

The creation of memory, in fact, involves a degree of forgetting. Raw sensory data becomes meaningful through its alignment with already existing concepts and structures. Such a process necessarily involves a forgetting of specific details of the perception, and an ignorance of those aspects of a scene or thing that is deemed irrelevant or uninterpretable. The role of forgetting in the formation of memories was clarified for Quian Quiroga in Borges' *Funes, El Memorioso*. Indeed, Quian Quiroga's own story resembles a Borgesian account, in which the key protagonist is Borges himself. Several of Borges' stories relate a narrator's astonishment at discovering, in the most unlikely of places, a key piece of information, which solves a particularly perplexing question or "puzzle" (5). A moment of apparent felicity has the author encounter a source that holds the key to understanding an until-then insurmountable mystery, be it a lost book or missing volume ("Tlön, Uqbar, Orbis Tertius"), a Christian missionary-turned-sinophile ("Garden of the Forking Paths"), or even a jaguar ("The God's Script"). It is not without irony, then, that the solution to Quian Quiroga's own neuroscientific conundrum would be found within one of Borges' own tales:

[T]he scientist, obsessed with trying to understand discoveries whose interpretation was already there, in a book written more than half a century before, a book that I had read as a youngster and that lay lost in my memory (5).

In *Funes, El Memorioso* Borges' recounts the story of his meeting with

one Ireneo Funes, who, after being thrown from a horse, awoke to a present moment that was “so rich, so clear, that it was almost unbearable, as was his oldest and even his most trivial memories.”<sup>4</sup> The fictional Funes recounts to the (equally fictional) Borges how, prior to the accident he had lived “as though in a dream: he looked without seeing, heard without listening, forgot everything, or virtually everything.”<sup>5</sup> Borges listens as Funes ridicules Pliny’s dictum, his senses no longer impeded by reductive abstraction:

He knew the forms of the clouds in the southern sky on the morning of April 30, 1882, and he could compare them in his memory with the veins in the marbled binding of a book he had seen only once, or with the feathers of spray lifted by an oar on the Río Negro on the eve of the Battle of Quebracho.<sup>6</sup>

As Quian Quiroga shows, Funes’ abilities are exhibited by well-known contemporary savants, like Kim Peek (source of the film *Rainman*), Daniel Tammet (who could recite the first 22,514 digits of  $\pi$ ) and Stephen Wiltshire (renowned for his detailed and accurate drawings of vast city-scapes). Yet, like Funes, each of these men has an “amazing power to perceive and memorise details but cannot turn them into general, abstract concepts” (114–5). These parallels impelled Quian Quiroga to consider Borges’ tale, as a source through which to reflect upon and interpret his own research, revealing to him the integral role forgetting plays in the formation of abstract concepts. Such a thesis is indeed evident in Borges’ own account of Funes: it is only in virtue of the fictional Borges’ own fallible memory that he is able to offer a coherent summary of “the many things” Ireneo Funes told him that night.<sup>7</sup> Funes himself, like the savants Quian Quiroga discusses, could offer no such summary, only an endless succession of associated details, devoid of any overreaching concept that might group them together.

Quian Quiroga is careful to point out that he is not trying to force a link between “Funes” and his own research, “or suggest that Borges foresaw modern neuroscience” (8). Instead, *Borges and Memory* shows how Borges’ tale and Quian Quiroga’s own research each provide an important means of interpreting the other.

Yet efforts to understand human behaviour have never been the exclusive preserve of science. As Quian Quiroga points out, it has been a topic of contemplation and investigation for Ancient Greek philosophers, Cartesian rationalists, and British empiricists; not to mention the likes of Borges, the “brilliant intellectuals who defy any categorisation ... who reached astounding conclusions guided only by his reasoning and his prodigious imagination” (4).



Quian Quiroga's book is enlivening because he does not ignore (or forget) the parallel speculations he found between his own research and that of academics and thinkers well beyond his professional sphere. Instead of merely referring to such sources in a buried footnote at the end of a paper or book, or ignoring them altogether, Quian Quiroga seeks to understand how it is possible that "Borges had perhaps already dreamed results like the ones I was lucky enough to discover" (7).

*Borges and Memory* presents a timely reminder of the cultural context that all research exists within; that we may all be "simply sharpening and rephrasing the same questions that Aristotle asked himself more than two millennia ago" (7). Nonetheless, Quian Quiroga demonstrates that any abstraction necessarily involves a degree of "forgetting." While identifying the important balance struck between remembering and forgetting in the formation of memory, *Borges and Memory* more broadly suggests the value of cross-disciplinary dialogue in conducting research.

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#### NOTES

<sup>1</sup> Jorge Luis Borges, *Collected Fictions*, trans. Andrew Hurley, (New York: Penguin Books), 100.

<sup>2</sup> Jorge Luis Borges, *The Total Library: Non-Fiction 1922–1986*, trans. Esther Allen, Suzanne Jill Levine and Eliot Weinberger (London: Penguin Books), 353.

<sup>3</sup> Borges, *Collected Fictions*, 134.

<sup>4</sup> *Ibid.*, 135.

<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*, 134.