

SCIENCE AS A QUEST

DON QUIXOTE, NEUROSCIENCE AND THE INTERROGATION OF TRUTH

ROMÉN REYES-PESCHL

Neuroscientist Rodrigo Quian Quiroga has wondered whether «scientists, embarked upon their personal quests – their quixotic endeavours – spend their time just thinking». This adjectival invocation of Cervantes's Don Quixote pitches science as an epic quest that equates scientific rationality with the Don's delusions. Does science quest after truth in a quixotic, literary way that philosopher Nicholas Maxwell terms «rationalistically neurotic»?

Keywords: Quixote, quest, neuroscience, brain, Borges.

This article stems from comments from a book recently published by a neuroscientist. However, this is not a book predominantly about his findings; these he has outlined previously elsewhere, and the more recent book is actually about an important literary writer.

So what do these things have to do with each other? According to the scientist in question, Rodrigo Quian Quiroga, the common root of his research on memory and the writings of Jorge Luis Borges can be found in the history of neuroscience, all of which he covers in *Borges and Memory* (2012). The book was originally published as *Borges y la Memoria* in 2011 in the author's native Spanish. Given this, Quian Quiroga thanks his translator Juan Pablo Fernández in the following way: «Borges, who was raised bilingual, joked that the Spanish version of *Don Quixote* was a bad translation from the English original. It may actually be the case that the English translation of [*Borges and Memory*] surpasses the original» (Quian Quiroga, 2012: 204). Thus, this article will be about the pursuit and negotiation of truth across multiple cultural spheres, be they linguistic or disciplinary, in translation or historical, in neuroscience or literature. The article will suggest that from its early codification in the times of William Whewell up to the present day of Quian Quiroga, science has been pitched as an epic quest in the quixotic mould, paradoxically equating science's putative rationality with the delusional

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contents of Don Quixote's head and thus raising a further question: to what degree have scientists suffered from what philosopher Nicholas Maxwell terms «rationalistic neurosis»? Considering *Don Quixote*'s early translation, widespread popularity and subsequent cultural ubiquity as a metaphorically misgiven quest for truth, this article will outline the effects of a literary figure such as the Don upon science – much like Quian Quiroga's admission that a Borges short story somehow spurred on or elucidated

his own scientific quest – and preliminarily evaluate the truth claims of such real-life people who not only read but *act* in response to fictions, to borrow cognitive literary scholar Norman Holland's characterization. The overarching aim is to locate these claims within what historian of science Max Stadler has described as «a cerebral romanticism inscribing the neurosciences, wittingly or not,

into an age-old, anthropological quest of ultimate significance, the final capstone on the long-winded path to human nature exposed» (Stadler, 2012: 137).

■ TRANSLATION AS A QUEST

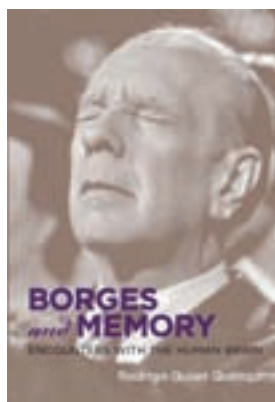
The wealth of commentary generated by Miguel de Cervantes Saavedra's *Don Quixote* since the publication of its first part over 400 years ago is mesmerising. Besides this paradigmatic text's perennial

centrality in the Hispanic world's canon, it is worth stating its nigh-on instantaneous universal reach; Manuel Durán and Fay Rogg note that as it was «[t]ranslated almost immediately after its publication in 1605, [*Don Quixote*] influenced writers from its inception» (Durán and Rogg, 2006: 4). What is widely considered the first novel proper was from the outset subject to both intra- and inter-lingual scrutiny. Indeed, translation is an issue inscribed into its textual fabric, as the very narrative is framed as the Spanish transcription of an orally translated Arabic original. With this structure of translations in mind, Durán and Rogg ask:

Why do Don Quixote and Sancho captivate us? How does the work penetrate and play on the modern mind? And so, like Don Quixote, we begin our quest. We choose as a point of reference Edith Grossman's translation of *Don Quixote* because the contemporary vocabulary makes for much easier reading.

DURÁN AND ROGG, 2006: 5

So what does this have to do with cognitive/neuroscience? A first clue is Durán and Rogg's appeal to the almost delusional quest-like quality of attempting yet another critical reading of *Don Quixote*; Grossman, the translator of the edition chosen for this reading, similarly emphasises that «[e]ndeavouring to translate artful writing, particularly an indispensable work like *Don Quixote*, grows out of infinite optimism as the translator valiantly, perhaps quixotically, attempts to enter the mind of the first writer through the gateway of the text» (Grossman, 2005: xviii). This age-old work, as Durán and Rogg observe, continues to «penetrate and play on the modern mind»; equally but oppositely, to «quixotically» «enter the mind» of the novel's writer, as Grossman implies, is the ideal way of heroically approaching the text. The common idiom here means delusional questing becomes the mutually reinforcing norm: the Don and his squire (and their author) burrow into one's skull so that one may then burrow into theirs, ad hoc exploratory neurosurgery seemingly the order of the day.



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Quixotic quests are embedded in the English-language cultural lexicon. The everyday meaning of the noun «quest», as in a search or pursuit, always feels somewhat grander, more significant or aspirational than the prosaic act of looking for a lost item of clothing, for instance. This more epically charged aspect of a quest is reflected in the OED's 6th definition of it: «In chivalric or Arthurian romance: an expedition or search undertaken by a knight or group of knights to obtain something or achieve some exploit. Now also: a similar search or journey in any fictional narrative» (OED Online, March 2014). This definition dates back to the late 15th century, but interestingly, the OED also claims that instances of *Quixote*, roughly equivalent both in noun and adjective form to present

day use of the word *quixotic*, were first in evidence in 1644, this earliest example credited to English poet John Cleveland. While the modern word «quixotic» ranges in meaning from idealistic and whimsical to foolhardy, capricious or delusional, Cleveland's usage suggests the latter end of this scale: «The Quixotes of this Age fight with the Wind-mills of their owne Heads» (OED Online, March 2014; *sic*). Note the specific location of the delusional action here is the «head». Evidently the illusory and cranium-bound quixotic quest has been on the Anglophone linguistic horizon for a long time – almost as long as *Don Quixote* itself.

Turning to the entrance of another term into general vocabulary – the now ubiquitous word «scientist» – in 1986 JAV Chapple contradicts the OED's entry by saying that William Whewell did not coin the term in 1840's influential *Philosophy of the Inductive Sciences*, but in an 1834 piece for the *Quarterly Review* (and this has since been verified and updated by the OED).

In this earlier piece, Whewell describes the argument at the previous year's meeting of the British Association for the Advancement of Science over what to call a person engaged in science: «some ingenious gentleman proposed that by analogy with *artist*, they might form *scientist*, and added that there could be no scruple in making free with this





Since its early codification in the times of William Whewell up to the present day of Quian Quiroga, science has been pitched as an epic quest in the quixotic mould, paradoxically equating science's alleged rationality with the delusional contents of Don Quixote's mind. The picture shows one of the many illustrations by the artist Gustave Doré for the 1863 edition of *Don Quixote*.

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termination when we have such words as *sciolist*, *economist*, and *atheist*» (Chapple, 1986: 1). Though satirical, this logic proved sound and the word «scientist» stuck, becoming far less controversial than at that meeting. More interestingly, according to Chapple, Whewell's third person accreditation to an «ingenious gentleman» secretly referred to himself. This aligns him directly with Cervantes's most famous creation. By Whewell's time, Don Quixote of La Mancha's full title of *El Ingenioso Hidalgo* had been translated into English many ways. These ranged from «Valorous and Wittie Knight Errant» in Thomas Shelton's pioneering translation of 1612, to «the most Renowned Don» as per John Phillips's 1687 version (Ardila, 2009: 61; 73, note 6). But by far the most common version and a cognate phrase for the Don's name itself was, and still is, «ingenious gentleman». There is therefore a strong suggestion that by the 1830s the linguistic and cultural tropes of *Don Quixote*'s translations had become so embedded in the brains of pace-setting proto-scientists like Whewell that they had become guiding metaphors for how the new specializations of science emerging in the nineteenth century went about organizing and referring to themselves.

■ THE SCIENTIFIC DISCOVERY OF QUEST(IONS)

Like Chapple, Charlotte Sleight writes convincingly about Whewell's interaction with the literary writers of his day. Sleight also highlights Whewell's distinction between deductive and inductive reasoning, where deduction is akin to pure logic or mathematical thinking, while «[i]nduction consisted in gathering evidence, generalising it, and then making an explanatory leap to postulate a general conclusion» (Sleight, 2011: 83). This «explanatory leap», which also required prior knowledge in the mind, was a piece of imaginative reasoning central to Whewell's philosophy. As Sleight says:

Whewell's influential model of scientific method [...] was based on idealism, according to which a person had to have the correct idea in mind before she or he could weigh up the claims of scientific observation. When it came to the novel, this implied that readers were [...] liable to be misled by books if they were not the right sort of person.

SLEIGHT, 2011: 20

Though perhaps an anachronistic «explanatory leap» too far given Sleight's mention of «the novel», it is hard not to spy Whewell's critique in Don Quixote's mind-altering bookishness – as his housekeeper says early in Part 1 of *Don Quixote*,

«Those books should go straight to Satan and Barrabas, for they have ruined the finest mind in all of La Mancha» (de Cervantes, 2005: 44). Counterpoising Whewell's position with the superficially similar one of Edgar Allan Poe, Sleigh writes that «[f]or Whewell, the organising ideas that made sense of experience had to come from a respected person, but Poe's narrators are far from respectable; they are drunken, mad and murderous» (Sleight, 2011: 98). Despite being more famous for his fictions, Poe was also an astute (but often playful) commentator on scientific matters, and his reliably unreliable narratives stretch to these ostensibly non-fiction writings: «Critics even disagree on the fundamental question of whether Poe's essay "Eureka" about the nature of the universe is serious or spoof» (Sleight, 2011: 99). This may be because this piece, first published in 1848, flits between cosmology, religion and Poe's repertoire of literary motifs. Its title is a transliterated reference to the Ancient Greek for «I have found it», an expression most commonly attributed to Archimedes of Syracuse. Whilst Archimedes's cry of «Eureka!» legendarily accompanied the spilling of bath water, Poe's *Eureka* spills over into his lengthiest work of non-fiction and one which has only fuelled further historic, scientific and literary uncertainty – his loquacious take on «I have found it» signals something more like the beginning of a search than the end.

Since at least the times of Whewell and Poe, then, it is not certainty that follows searching, but uncertainty – questions lead to quests lead to more questions, and so on. In *Borges and Memory*, Rodrigo Quian Quiroga dispels the notion of a «Eureka!» motivating scientists, positing instead the cyclical questions and quests just described: «What is it, then, that makes scientists wander about in a universe of ideas and experimentation?» (Quian Quiroga, 2012: 2). Note that this question ties the world of ideas to the world of experimentation through the act of wandering. This echoes Don Quixote's response to Sancho Panza regarding the true value of knight errantry given its largely unobserved nature. The Don replies: «it is necessary to wander the world as a kind of test, seeking adventures, so that by concluding some of them, the knight acquires a reputation and fame, and when he goes to the court of some great monarch he is known by his deeds» (de Cervantes, 2005: 158). Apparently having amply made his point, the Don then spews forth a protracted list in the quixotic mould of fortuitous and fanciful consequences of this «wandering» as a «test». Quian Quiroga answers his own question regarding a scientist's motivations with another ambitious list, summarised as follows: «the



While the modern adjective *quixotic* ranges in meaning from idealistic and whimsical to foolhardy, capricious or delusional, John Cleveland's early usage suggests the latter end of this scale: «The Quixotes of this Age fight with the Wind-mills of their owne Heads». The image shows an illustration by Gustave Doré from the 1863 edition of *Don Quixote*.

search for knowledge or, in more mundane terms, simple curiosity. Nagging questions; the pressing need to figure something out and the inability to do anything else until the answer is found» (Quian Quiroga, 2012: 2). These «pressing» and «nagging» questions border on the compulsive, meaning the search he mentions does not sound like a choice, but a mental and physical imperative. Already this «simple curiosity» starts to read like something requiring more complex interrogation than is being allowed for. Quian Quiroga continues by saying that «[o]ne can then



ask whether scientists, embarked upon their personal quests – their quixotic endeavours – spend their time just thinking» (Quian Quiroga, 2012: 3). Although he subsequently claims the reality is more repetitively mechanical than this theoretical loftiness, his adjectival invocation of *Don Quixote* is striking for two reasons: firstly, it specifically pitches science as a romantic or epic quest; but secondly, by admitting that the quixotic quest underpins and even validates the monotonous reiterations of the empirical experiment, he equates science’s putative rationality with the delusional contents of the Don’s head – the quest *itself* is enough to justify and explain one’s vivid mental life in the face of a humdrum existence. Quian Quiroga elaborates:

[...] in my quest to understand different aspects of how the brain works [...] it is rare, very rare, to come by a “Eureka.” Problems are usually left open, answers usually lead to more questions, and the final solution is almost always elusive. But perhaps our obstinate perseverance may be nothing more than the knowledge that [...] the pleasure is not in finding the answer but in searching for it.

QUIAN QUIROGA, 2012: 3

This pleasure, then, would be that of repetitive questioning and measuring, with its ultimate aim intentionally illusory. This seems like a paradoxical rationalization, a wilful equation of scientific method with the delusional quixotic quest, raising a further question – to what degree do scientists such as Quian Quiroga suffer from what philosopher Nicholas Maxwell terms «rationalistic neurosis»?

«THE ILLUSORY AND CRANIUM-BOUND QUIXOTIC QUEST HAS BEEN ON THE ANGLOPHONE LINGUISTIC HORIZON FOR A LONG TIME – ALMOST AS LONG AS ‘DON QUIXOTE’ ITSELF»

■ NEUROTIC RATIONALITY?

Maxwell believes science has increased the knowledge and technical ability of humanity, but due to «rationalistic neurosis», not its wisdom. This has apparently led to:

[...] the crisis behind all the other current global crises: science without wisdom. In these circumstances, to continue to pursue knowledge and technological know-how *dissociated* from a more fundamental quest for wisdom can only deepen the crisis. As a matter of urgency, we need to free science and academia of their neuroses [...].

MAXWELL, 2004: XIII (original emphasis)

This may seem overblown, but it bears out Maxwell’s choice of the word «quest» here, as in

something bigger or more significant underlying the quotidian aspect of science, and he uses it again when arguing for a return to a more rational version of the pre-science, humanities-friendly practice of «natural philosophy» (Maxwell, 2004: 47). Maxwell’s aims are convoluted yet claim conceptual centrality; his entire argument is to do with the truth of aims. His point of departure in explaining «rationalistic neurosis» is the Oedipus complex, with the desire to love or kill a particular parent filtered out in favour of abstract aims. He re-represents the complex as a basic aim A in conjunction with another more problematic (and thus repressed) aim B resulting in the professing of an unwittingly false aim C: «Neurosis, as I have sketchily characterized it [...], is a condition that almost *any* aim-pursuing entity is likely to fall into, in so far as it is sufficiently sophisticated to represent, and hence misrepresent, the aims that it is pursuing» (Maxwell, 2004: 2; original emphasis). For Maxwell, science and, by extension, academia are rationalistically neurotic because they misrepresent their own aims.

Quian Quiroga’s aforementioned comments, which posit an illusory aim so as to continue asking questions, would at first glance appear to be neurotic in this way. However, with the illusory aim and its quixotic nature having been so readily admitted, it is actually much closer to Maxwell’s assertion that basically, science’s real, problematic and thus disavowed aim is «improving

knowledge of *explanatory* truth, the truth being presupposed to be explanatory, or comprehensible» (Maxwell, 2004:115; original emphasis). The issue here is this crucial metaphysical presupposition, which according to Maxwell is denied by science in favour of a standard empirical model that presupposes no truth without evidence. But Quian Quiroga makes no such denial, and instead openly admits the quandary: that the mere possibility of truth is an assumption. His quixotic quest is ironically more like the «explanatory leap» that Charlotte Sleight credits to William Whewell. If Maxwell’s assertion is true, that the first step in combating rationalistic neurosis is to freely confess to suffering it, then Quian Quiroga is well on the road to recovery. Besides which, Maxwell’s argument circularly rests on a Freudian model, itself somewhat awkwardly diagnosed with the same problem as the rest of science (Maxwell, 2004: 112). Similarly, his justifiably idealistic appeal

to the scientific «quest» becomes subverted in his commentary on the fallout from the so-called Science Wars: «In a world dominated by the products of scientific progress it is quixotic in the extreme to deny that such progress has taken place» (Maxwell, 2004: 127). This is not Quian Quiroga's questing for its own sake, but a self-denial, insisting that one's quixotic ends justify one's means, while simultaneously decrying this delusion in others.

■ THE PERVASIVE VALUE OF QUIXOTISM

Quian Quiroga is not a lone voice in the night unwittingly invoking *Don Quixote* in scientific thought and deed – even the briefest survey shows the contrary. Cognitive psychologists Stephen Goldinger and Tamiko Azuma title their 2003 paper «Puzzle-solving science: the quixotic quest for units in speech perception» while quantitative psychologist Patrick Curran expresses his continuous uncertainty in his 2009 article «The Seemingly Quixotic Pursuit of a Cumulative Psychological Science», writing that *Don Quixote* juxtaposes

the eager pursuit of unrealistic ideals with practical grounding in the reality of day-to-day life. The main character succeeded in capturing the very nature of idealistic pursuit to the point that over time his name developed into an adjective that describes something as foolishly impractical. So, is it fair to describe the pursuit of a cumulative psychological science as quixotic? On some days, I believe that it is, whereas on others I do not.

CURRAN, 2009: 77

Nevertheless, he still calls it a «vitally important quest» (Curran, 2009: 79). Major names in neuroscience Semir Zeki and Christof Koch both have books with the word «quest» in the title, and some might say their work on the neural correlates of creativity and consciousness respectively is controversially quixotic (Cf. Zeki, 2009; Koch, 2004). Changing tack, political scientist Wolf Lepenies boldly argues that «poets anticipated the discoveries of science. Cervantes had, in his admirable *Don Quixote*, sketched out the true nature of insanity long before any biologist had done so; with profound insight he had described how our emotions influence our perceptions» (Lepenies, 1988: 39-40). Interestingly, this tallies with what Nicholas Maxwell concedes is a rare instance of sanity in the mire of rationalistic neurosis (though he ends up claiming the instance for himself anyway):

[s]ome things have moved in the direction of wisdom-inquiry. [...] There is greater recognition of the [...] fundamental role of emotion in cognition, [which] as far as neuroscience is concerned, has been stressed especially



Portrait of Miguel de Cervantes attributed to Juan de Jáuregui (c. 1600).

by Damasio [...]. Nearly two decades earlier, I stressed that emotion is essential to rationality, to rational inquiry, and to science.

MAXWELL, 2004: 117–118; also 118, note 1

In any case, if emotions quixotically influence perceptions, and scientific commentators choose to align themselves with the Don, then the quest of science seems to pre-require a quixotic, affective and wilfully imaginative or fantastical paradigm.

This is not to say, however, that Quian Quiroga is a reclusive genius who is currently ignored but who will be historically vindicated by the quixotic tradition. His book *Borges and Memory* is not about *Don Quixote*, nor even about the truth-value of science, per se. It is about Quian Quiroga's interest in a Borges short story, its uncanny congruence with his neuroscientific working life, and their potentially common roots. Describing his far from solitary «day job», he is quick to give credit to forebears and teams with whom he has worked. However, in a book on an ostensibly literary

topic, Quian Quiroga is also unabashedly willing to dwell in the supposedly quixotic edges of science, something which as shown is perhaps not as irrational (nor as uncommon) as it originally seemed. Like Don Quixote, Borges had a personal library which was the source of his imaginary adventures; and like the priest and the barber, characters who seek to cure Don Quixote by examining his library to assess his reading material, Quian Quiroga spends a whole chapter of his relatively short book describing in adulatory terms his visit to Borges's preserved library. Bizarrely, the quest of science here becomes a more traditionally philological endeavour, Quian Quiroga diagnosing the potential philosophical, literary or theoretical influences contained in Borges's library, which, if *Borges and Memory's* common-root thesis is correct, would unbeknownst to him be Quian Quiroga's own influences – and having influences in this way would not be objective, not detached, and would be most unscientific indeed.

But this is specifically Quian Quiroga's position: someone obsessed with the mind/brain, even beyond his fascinating empirical work on memory and concept abstraction at the neuronal level. He purposely enacts a quixotic quest because rather than obscure the truth, this temporary refuge from the quotidian tasks of laboratory neuroscience actually affords him a better view of his practice. A useful parallel can be taken from *Don Quixote*: towards the start of Part 2, the Don accidentally defeats the Knight of the Mirrors and his squire. Soon after it is revealed these two are merely another pair of amateur physicians secretly aiming to cure Don Quixote's mental problem by taking part in it. They are his fellow villagers, the bachelor Sansón Carrasco and his friend Tomé Cecial, the latter of whom says:

it's easy enough to think up and begin an enterprise, but most of the time it's hard to end it. Don Quixote's crazy, we're sane, and he walks away healthy and laughing, while your grace is bruised and sad. So tell me now, who's crazier: the man who's crazy because he can't help it or the man who chooses to be crazy?

To which Sansón responded:

The difference between those two madmen is that the one who can't help it will always be mad, and the one who chooses can stop whenever he wants to.

DE CERVANTES, 2005: 549

Actively participating in a delusion might gain one some bruises in the short term, but is ultimately far more desirable than simply allowing fiction to set one's «dorsolateral prefrontal cortex [...] both for non-action and action [and thus] become uncertain about [one's] own status in reality as well as that of the story», as Norman Holland (2012: 85) extrapolates from the neuroscientific theories of Llinás, Passingham and others. What Sansón Carrasco does not realise is he is as much «a man who *does act* in response to fictions» (Holland, 2012: 86; original emphasis), which is how Holland describes Don Quixote, but could equally represent Borges or Quian Quiroga. In the quest for science, as in any interrogation of truth, it is better to choose to be rationalistically quixotic than to passively lapse into neurosis. ☺

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Romén Reyes-Peschl. Assistant Lecturer at the School of English. University of Kent (United Kingdom).