

MINIMAL DESCRIPTION IN 20TH-CENTURY SHORT FICTION:
DANTE'S *DIVINE COMEDY* IN BORGES' "THE ALEPH"

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What makes Dante Alighieri's 14th century poem, *La divina commedia*, so lasting? Its ability to survive the changes wrought across time that create generational gaps in appreciation and understanding. Persisting literature is universal. Yet, Dante's poem would seem so specific in time and place, nailed to his own religious beliefs, his city's political strife, his epoch's now-antiquated cosmological understanding, and medieval Florentine *terza rima*.¹ There is universality in the poem, however. Most clearly expressed in the opening of Paradiso, Canto 10 (2-9), when Dante urges his reader to pause, to stop reading and to look up: "Lift, therefore your gaze to the high wheels with me, reader, ... and there begin to marvel [at] the ineffable Power [who] made all that turns in the mind or through space with so much order that one who contemplates it cannot be without a taste of it." Lift your gaze with me and marvel, he says. Contemplate and taste the infinite. This remains.

Dante's contemplation of space was metaphysical; beyond reality and the visible universe there was the source, the cause and purpose. For the universe itself for Dante was finite, its end would have been about 73 million miles away. However, since Dante made his journey to the metaphysical heavens, in the jubilee year, 1300, when the poet was famously middle-aged—"nel mezzo del cammin di nostra vita"—science has turned an ontological eye on the sky, cosmologists study the origins, without necessarily implicating teleology or metaphysics. And so, to the modern mind, the sky, the heavens, are no longer a beyond-reality that is infinite, but reality, the universe, itself that is infinite. Furthermore, physics, and theoretical physics, have introduced the infinite to contemplate at lesser, sometimes incomprehensible, magnitudes. Not only the sky or the sea, but atoms and quantum particles now represent infinity. Humans have been re-situated, no longer at a center that expands out

towards the source, and is self-similar to the source, but one magnitude of a universe that is seemingly-endlessly self-similar—atoms, solar system, galaxies—and where every point is the center and the source. Dante depicts a universe that is ordered by circles within circles, mirroring frames within frames, all mirrored and contained within spheres. His universal order repeats itself, projects itself, reflects itself.

The structure of his celestial spheres and explanation of celestial mechanics is part Christian, part classical and medieval neoplatonic,² and part his own invention. Paradiso’s planetary spheres are from the Ptolemaic model, while the dynamics of these visible spheres are described similarly to Aristotle’s conception of an invisible *primum mobile*,³ that Dante, however, populates with ranks of Christian angels. Dante’s cosmology, as a whole, though figuratively Christian, is neoplatonic. Plotinus taught that our universe was a finite projection of “the One” beyond being, simple, ineffable, all powerful, the source of reality and its teleological end. Our reality, as a projection of the One, was considered wholly the same but wholly different, its derivative. The Nous represents the point of our derivative that arrives closest to the One, it is the highest plane of consciousness, pure intellect. Through contemplation, we can arrive at the One, witness it, for the One is one, which means we are all part of it. But we cannot conceive of it so as to utter it.

I describe this architecture in order to show that Dante’s cosmos resonates bidirectionally, with both ancient philosophy and with a modern fractal conception of design in nature. The neoplatonic and the fractal reveal a goal and a result of Dante-the-pilgrim’s journey to the ineffable core of his tale. The goal is understanding through contemplation, while the result of understanding is humility and compassion. Read and look up, contemplate and taste the infinite, and understand your relationship to that infinite. Dante, himself, looks down from Saturn at the earth, ‘a tiny threshing floor, so pitiful’ he says, ‘it moved my smiles.’⁴ He sees our place, the earth’s entirety from a new perspective, minuscule relative to the whole yet whole in itself, and he smiles in pity/compassion.⁵ Remember this image when we consider Borges and his Aleph. And consider, that this communing with the universe (through beautiful poetry or the sublime sky) and learning humility, Dante’s ‘right love,’ is not far-

removed from Kant’s foundation for modern aesthetics, which sees reflective judgment as the basis for shared value systems arrived at freely and individually.

If we allow for a change in conception of time and space, which come to be understood in modern times *a priori* as mental constructs that help us organize the world, which allows for an internal, subjective reality that Dante could not have conceived of, then Dante’s message in *La divina commedia*, has much in common with Immanuel Kant’s *Critique of Judgment*,⁶ the foundation of modern aesthetics. Dante says, “Read and look up at the sky, contemplate, taste the infinite, see one’s place in the whole, and learn right love.” Kant argued that through aesthetic reflection (on art or nature), one learns to recognize the beautiful or sublime, and it encourages sympathy as it creates a bridge with the external world that feels like a reason, a purpose, a communion with the world. It creates a sense of harmony that will teach man to act ethically of his own free will. So Kant says, in a sense the same, “Read and look up at the sky, contemplate the beautiful and sublime, in poetry and nature, taste the infinite, and learn to commune, learn right love.”

So we see that much remains in Dante beyond his hyper-local political concerns, his medieval Christian morality. There is a fundamental attempt to describe the universe, beyond that described in Catholic doctrine, and to guide the reader to a moment of sublimation, awe inspired through grandeur or beauty. It is this which remains for Jorge Luis Borges, some 700 years later, when in a talk he gives in 1977 he says that *la Comedia*, as he calls it, is the greatest gift the Middle Ages gave the modern world. Borges says that the poem is, for him, the height of literature, not because his and Dante’s theologies coincide or because he agrees with his mythologies, but because, he says, “no other book has yielded in me such intense emotions through aesthetics.”⁷

Borges’ 1943 short story, “El Aleph,” evokes *la Comedia*. In it, Borges is author, rememberer/narrator, and protagonist, as was Dante. The story, Borges insists, with a wink, is autobiographical (it’s useful to note here that Borges argues that Dante too was winking about his own pilgrimage). It takes place in 1941, when Borges is 43, precisely, *nel mezzo del cammin di sua vita*, for he dies aged 86. There is the dead Beatriz Viterbo (Dante’s Beatrice Portinari), whom Borges loved unrequitedly in her life, and

continues to memorialize and live for in her death. There is Carlos Argentino Daneri (Dante’s Virgil), poet and guide. There is the initial descent, then the vision of the infinite Aleph (Dante’s eternal light in Paradiso, Canto 33) and there is the same incommunicability trope upon viewing the ineffable. At first light, Borges’ tribute seems to mock or disparage. Daneri is no Virgil, but a self-involved pedant.⁸ Beatriz proves not a saint, but a divorcee with a secret lover. And the story ends in Borges declaring, upon reflection, that his vision was false.

So what can we make of this story? In light of Borges’ admiration for the epic poem, he must not be mocking it. Could he be attempting to summarize it instead? He states in 1977 that he would never claim that he could abbreviate Dante, and goes on, “it would be an irreverence on my part to say in other words that which Dante has said, for all eternity, in Italian.”⁹ I believe, however, that “El Aleph” is, in fact, an attempt to abbreviate Dante, and that his claim against this is partly Borgesian false-modesty and partly truthful, for, indeed, he does not attempt to produce *la Comedia argentina*. To do so would be an incommunicable failure. Just as Dante surpasses Virgil, his guide, both metaphysically, by being allowed to view the ineffable, and poetically, through his communication of it, so Daneri is surpassed by Borges. Both are allowed to view the ineffable now, but Daneri is stuck poetically, unable to surpass Dante. He is mocked by Borges for this attempt to describe the Aleph, in an artificial, anachronistic poem titled *The Earth*. Daneri’s poem seems to mime Dante in a different way than “El Aleph;” it is in endless cantos, antiquated language, it is artificial for its fussy neologisms and self-promoting references. It is, to quote Borges, “long-winded ... verbal ostentation ... [and] pedantic hodgepodge.”¹⁰ This sort of writing in the 20th century is a barrier rather than an access point to understanding. While when Dante wrote *la Comedia*, his style was brand-new and his experiments with the vulgar and with autobiography, as Borges says, made Dante’s tale more intimate to his readers than his contemporaries’ tales.¹¹

With “El Aleph,” Borges attempts the same, an intimate communication of the ineffable, in modern terms, which implies an updating of both content and form in order to recreate for contemporary modern readers the fantastical realism that Dante created for his contemporaries. The content changes; figurative, religious symbolism to depict a ‘concrete’ metaphysical infinity is replaced by

mathematical symbolism that depicts a possible ontological infinity. Borges utilizes an unreliable narrator to increase the capacity in the modern reader for a suspension of disbelief in an incredible vision. And, most importantly to this talk, the account is shortened to just 4%¹² the length of *La divina commedia*, in part to more *realistically* recreate a vision, necessarily fleeting, but for further reasons investigated here as well. That which follows here is an apology for this shortening, which is an abbreviation in message length, but which, I argue, is lossless in the data contained in the message. Borges does not attempt to transmit Dante’s entire message, but only the core vision of the poem and its effects: Dante’s intensity of emotion as he urges readers to “Look up. Contemplate. Taste the infinite.” Let it inspire awe and humility. This is the universal, lasting content I will look for in “El Aleph” to ascertain if Borges’ abbreviation of it is lossless in data.

I will begin by ‘looking up.’ Borges can no longer go beyond the universe, as we now consider it possibly, and probably, limitless. Indeed, while space is still, for modern readers, a canvas that invokes awe as a representation of an unfathomable totality, it is the realm of real exploration and discovery, not of the metaphysical, not the realm of a discrete and external godhead. Borges, therefore, turns his gaze inward, rather than outward, to explore an earth-bound infinity, the Aleph, which expands forever, at decreasing magnitudes, within itself. While for Dante, we are miserable as the smallest sphere and the furthest from the center of a fractal-ish cosmos, our place is still somehow central, and at least known. Borges sees a fractal at a lesser magnitude, partial, yet containing the whole, what he calls *multum in parvum*, making our own sphere, whether considered the sphere of the individual, of the Earth, of the solar system, or galaxy, absurdly dislodged from any sort of definite relationship with a central realm, a source, a godhead. It is in this dislodging that he offers his readers contemplation of the sublime.

To better illustrate Borges’ bounded infinity, *multum in parvum*, we can consider infinite sets of numbers for which a given sequence remains bounded. The Mandelbrot set is a famous example, often used for illustration. It is an infinite set of complex numbers—that is, both real and imaginary—that does not return results tending towards infinity when a given mathematical operation is iterated on it. Rather, the results describe an increasingly intricate bounded space that is self-similar

at endless magnifications. This set and others like it are part of a field called ‘complex dynamics’ which describes the complex plane, or, the plane created by a real axis orthogonal to an imaginary axis. If we consider metaphysics a study that goes beyond reality, while ontology is a study of existing things, categories of reality, then complex numbers and complex dynamics have a foot in the ontological as well as the metaphysical and are one of modern man’s attempts to conceive of a space beyond, that is not necessarily non-ontological, for it is conceivable, utterable, and provable, but, somehow tending towards the purely metaphysical, as it is unseeable, existing in a category of reality we do not fully comprehend, due to, for example, its dimensionality.

While Borges would not have seen a Mandelbrot set illustration specifically, complex dynamics were first investigated in the early 20th century and may have been known to Borges. Other self-similar and bounded sets, like the Julia set, existed long before Mandelbrot popularized them. This determination is essentially a mute point, however, for Borges’ very choice of a name for his infinitesimal infinite, the Aleph, as well as his description of it, prove that he was deeply concerned with and aware of these fractal descriptions of the cosmos. For, the Aleph, as Borges states in the story, “is the first letter of the Hebrew alphabet.... [and its] use for the strange sphere in my story,” he says, “may not be accidental. For the Kabbala, that letter stands for the *En Soph*, the pure and boundless godhead; it is also said that it takes the shape of a man pointing to both heaven and earth, in order to show that the lower world is the map and mirror of the higher; for Cantor’s *Mengenlehre* set theory, it is the symbol of transfinite numbers, of which any part is as great as the whole.”¹³

So he defines the Aleph symbol as a representation of the godhead/the whole/infinity. That is, as a part that represents, or is, the whole. But the name of the Aleph is not inherent to the thing itself, which is nameless, as it is unutterable. Dante’s godhead was the same. He carries his readers across 99 cantos only to leave them, now poised for revelation, with a sight that cannot be described: “My mind was struck by a flash / ... Here my high imagining fails of power.” (Paradiso, Canto 33) Borges does not take 99 cantos, but a few pages to prove unable to say the unsayable. He, like Dante, begins by warning us that he is not up to the task of description. Using linear language to describe a simultaneous, unfathomable experience of an object infinite in time and space, “is impossible,” he says,

“for any listing of an endless series is doomed to be infinitesimal.” ... Then he tries anyways. He says the Aleph is an iridescent sphere of almost unbearable brilliance, which seems to be revolving. (Remember Dante looking down at the tiny Earth.) Its diameter is about an inch yet it holds all space, all things. This he experiences as spacelessness due to a simultaneity of distance. He sees through space as if all points were in one point: “I saw convex equatorial deserts, and each of their grains of sand,”¹⁴ he says. Likewise, Dante, arriving at the godhead, says “Nor amplitude, nor height impeded. But my view with ease took in the full dimensions, near or remote,” and “in one volume, whatever the universe unfolds. Compounded, yet one individual light. The whole.”¹⁵

The Aleph holds similarly, all time, all change, which Borges experiences as timelessness due to a simultaneity of change. He conveys this sense by giving readers disjointed examples of that which was revealed to him. Mostly the list is quotidian: Beatriz’s corpse rotting, his own blood, splintering labyrinths,¹⁶ ferns, an ancient Persian astrolabe,¹⁷ the shore of the sea. (NB: These are all fractal.) He leaves off after only a few examples, for, as he says, any linear list is infinitesimal relative to infinity, so 5 or 5 million could be considered equal. Furthermore, he does not want his account to resort to symbols, metaphors that would contaminate it with fiction, and so he only puts into words those things for which terms, not metaphors, exist.

He ends the description by giving us the sense that, in containing all time and space, the Aleph contains itself as part of time and space. Thus it holds, not infinity, but infinite infinities. “In the Aleph I saw the earth and in the earth the Aleph and in the Aleph the earth,” he says. Borges-the-author explodes this tiny space here, forcing us to contemplate this astonishing idea, of infinities held within infinities, and while the reader marvels, Borges-the-pilgrim weeps at the sight of, what he calls, the “unimaginable universe.” Still unimaginable for us who have read only of ferns and sand. Then the infinite he witnessed expands within the pilgrim, as it did within the Aleph. “I felt infinite wonder, infinite pity,” he says. Here we see again the process that Kant describes in his theory of aesthetics, the subject mirroring the external reality onto the internal. Seeing the infinite without, makes us see the infinite within. Through this communion, offered by these authors, we can learn Dante’s ‘right love’, Kant’s ‘individual ethics’, Borges’ ‘infinite pity’. Look up with me reader, they all

say. Contemplate and taste the infinite. Be awed and humbled. While Borges’ *Aleph* is not a physical ‘looking up’, it produces the same effect of sublimation and Daneri, significantly, says to him, when he comes into the basement and interrupts the vision: “One hell of an observatory, eh Borges?”¹⁸

Borges-Pilgrim and Dante-Pilgrim experience the same flash of a vision, and both try to convey it realistically according to and bending the rules of the realism of the ages in which they each lived. Borges’ story is shorter partly because it leaves out the figurative and metaphorical as much as possible, as well as leaving out the moralizing and political. But the central message, that which exists in both accounts, has been, itself, compressed in Borges. This compression can be illustrated by two principles of data transmission: (1) the Minimal Description Length in computational theory, which describes a lossless compression scheme for data, and (2) the rule of informational entropy, which states that the more often a query is performed, the lower its informational entropy and the shorter the string it takes to return the results of the query.

Regarding the first, the regularity of the form and content of *La divina commedia* is impressive—its 3 canticles of 33 cantos each, plus the introduction, 99+1, its *terza rima*, its constant circling, its constant return to imagery and themes. This regularity makes it a perfect candidate for compression according to the Minimum Description Length Principle which is based on the following insight: “any regularity in a given set of data can be used to compress the data, i.e. to describe it using fewer symbols than needed to describe the data literally.”¹⁹ To give just one possible example of this minimal description, Borges credits Dante with discovering that a writer can represent a character in a single moment, the moment that defined him. Dante introduces a legion of characters according to this literary technique. Borges does this same thing, but only defines one character, himself. Instead of giving us a string of explicitly repetitive data, circle after circle, character after character, he expresses it in a compressed form that conveys the same complexity of message: $ab \times n$, for example. More simply put, he gives us compressed data and leaves us to extrapolate. Remember that, in a linear listing of the infinite, a list of 5 or 5 million can be considered equal. This compression assumes that the reader knows the process for extrapolation, which could not, perhaps, have been assumed for Dante’s readership. Which brings me to my next and final point, the effect of evolution on literature

as described by informational entropy, and a general tendency in literature, due to lower informational entropies, towards short form.

How many generations of storytellers have attempted to bring readers in communion with the ineffable? I would say that as many generations as have told stories. And each generation builds on the last. Borges is able to convey his message in fewer symbols because he is communicating with readers who have 700 more years of ontological queries to support the current one. We, as educated readers, do not need the narrative structure that Dante’s readers or listeners needed, we do not need such explicit aid to arrive at an equivalent conclusion, for we have learned an improved formula for extrapolation. Informational entropy lowers with each iteration of a query, as less of the ultimate answer is sought each time. In order to increase the information entropy of a given communication, conversely, one must shorten the message. Borges mocks Daneri’s attempt to convey the Aleph with his “endless” epic poem, he sees it as pedantic and boring. Borges’ own attempt to convey the same object/revelation pays attention to the rules of informational entropy and shortens the string of data for message transmission, in an effort, perhaps, I say with a Borgesian wink, simply not to bore the modern reader.

His defining moment, I would argue, is not the moment of the viewing of the Aleph, but the moment of the writing of “El Aleph.” For in Dante and Borges alike, as Borges sees it, the Beatrices and Daneris and godheads are artifices, that which is salvific, that which is the true thing and the truly infinite, is none other than the literature itself. Indeed, in his talk on *la Comedia*, Borges cites Johannes Scotus Eriugena, an Irish neoplatonist who lived in the 9th century, and who said that ‘a text encloses infinite paths that one can compare to the iridescent feathers of a peacock.’”²⁰

¹ It is certainly an aural masterpiece, the wordplay in the Italian tercets, the neologisms, the latinisms, the perfect rhyme and meaningful alliteration (e caddi come corpo morto cade), make it still aurally impactful, beautiful and moving. But what about to the reader? And, most significantly does it mean to its foreign readership, which cannot access the form directly?

² Collectively, the Neoplatonists constituted a continuous tradition of philosophers which began with Plotinus.

³ Ptolemy thought that planets had souls and moved of their own accord. Plato and Plotinus thought that fire flew up into the celestial spheres and when it couldn't go further began a circular motion. Aristotle thought that aether, the fifth element, was unchanging and moved circularly. Aristotle also proposed divine unmoved movers, and the celestial spheres tried to mimic them. Ptolemy rejected the prime mover.

⁴ Paradiso: Canto 22

⁵ Paradiso: Canto 22: I straight obey'd; and with mine eye return'd / Through all the seven spheres, and saw this globe / So pitiful of semblance.

⁶ Kant, Immanuel. *Critique of Judgment*. 1790

⁷ Borges. "La divina comedia." 35

⁸ Borges, Jorge Luis. "The Aleph." in *The Aleph and Other Stories*. 17

⁹ "no pretendo abreviar lo que Dante ha dicho." (27)

¹⁰ The Aleph. 20-1

¹¹ Augustine's Confessions, autobiographical, 400 AD in Latin; Borges. "La divina comedia." 23

¹² 4,630 words compared to 111,030.

¹³ 29

¹⁴ 26, 27

¹⁵ Paradiso: Canto 30

¹⁶ developed in 1968 by Aristid Lindenmayer, a Hungarian theoretical biologist and botanist. Describes the recursive, splintering, self-similar growth of multicellular organisms. Good example is the growth of a tree, from trunk, to branches, to twigs, to leaves.

¹⁷ a very ancient astronomical computer for solving problems relating to time and the position of the Sun and stars in the sky. Several types of **astrolabes** have been made. By far the most popular type is the planispheric **astrolabe**, on which the celestial sphere is projected onto the plane of the equator. Even this, the celestial sphere is projected down onto our own, mirrored on it

¹⁸ (28)

¹⁹ Grünwald, Peter. "MDL Tutorial". Retrieved 2010-07-03.

²⁰ (11)