

RESEMBLANCE MADE ABSOLUTELY EXACT:  
BORGES AND ROYCE ON MAPS AND MEDIA

*John Durham Peters*

Josiah Royce, the American idealist philosopher (1855-1916), is best known to readers of Borges in connection with a recursive map-within-a-map drawn upon the soil of England. Indeed, Borges ranks “el mapa de Royce” side-by-side with his beloved Zeno’s paradox in “Otro poema de los dones” (336), a Whitmanesque catalog of a few of his favorite things. Borges appreciated Royce as a fellow-wanderer through the late nineteenth-century thickets of both Anglo-American idealism and the new mathematics of transfinite numbers. Royce was not so much an influence on Borges as a fellow-traveler who had arrived in a somewhat similar place after passing through Berkeley, Schopenhauer, and Cantor.

After cataloging connections between the two thinkers and explicating Royce’s map, I will suggest that both figures are theorists of infinity and metaphysicians of the copy who offer fertile suggestions to our understanding of media in general and maps in particular. Though Royce and Borges both can strike some readers as architects of suffocating idealist structures, there is a difference. Royce thinks his figures of infinity really do disclose the truth about the universe. Borges sees in such figures the paradoxes and slippages involved in any project of perfect duplication, and his skepticism about philosophical representation is designed, ultimately, to provide oxygen and exit from totalitarian systems. In this I would view Borges as a follower of Royce’s close friend, Harvard colleague, and philosophical antagonist: William James.

## WHO AND WHAT

Who was Royce? Royce is remembered, if he is remembered at all, as the philosophical sparring partner of William James, as the inventor of the concept of the "community of interpretation," and as an advocate of the metaphysical position of absolute idealism, a stance that may well have no living advocates on the planet today. As Royce himself noted one century ago: absolute idealism "is, I admit, a thesis which many of the most distinguished among my colleagues, who are philosophers, nowadays view sometimes with amusement, and sometimes with a notable impatience" (Royce, *Loyalty* 315). James's companionate polemics against Royce were part of a two-sided dialogue, but most of us know Royce only through James, which can make him look vaguely ridiculous. Royce is much more than a gaseous Hegelian. Though his prose style can wax pulpity in a King James register and his buoyant tone can put off readers whose tastes have grown used to the more nihilistic mood of twentieth-century thought, Royce anticipates existentialist and poststructuralist themes, and his last great work, *The Problem of Christianity*, is a rare amalgam of pragmatism and idealism that leans in weirdly wonderful semiotic directions. We should follow Borges's example and read Royce, who Charles Sanders Peirce called "our American Plato" (*CP*, 8: 108).

Royce's importance for modernist literature is not confined to Borges but is equally notable for T. S. Eliot, who wrote his doctoral dissertation under Royce's supervision. Eliot's poetic method in *The Waste Land* owes much to the idealist notion (deriving more, however, from Royce's colleague and rival F. H. Bradley) of a transpersonal locale of consciousness from which the span of human experience may be imperfectly viewed, embodied in that poem's narrator Tiresias. Needless to add, Borges and Eliot both pushed idealist themes in stranger directions than Royce ever did. Borges and Eliot stand to Royce as Marx and Kierkegaard stand to Hegel: post-idealist radicals who remove the triumphal affirmative cork of absolute reconciliation and let the spirits flow freely where they will. Royce loved to hike through metaphysical wastelands, frequently drawing on the geographical imagery of

the American west across which his English parents had in fact trekked to his native state of California. But however far he hiked, he always arrived home with a bang and never a whimper. Compared to Royce's stamina, Borges and Eliot sport a greater load of metaphysical weariness.

References to Royce are few but important in Borges's works. They deal with two of Borges's favorite themes: recursive self-representation and the mystery of time. (This paper focuses on the first.) In "Cuando la ficción vive de la ficción" from 1939 Borges says that he first discovered Royce's map around 1921 in "una de las obras de Russell" (325). This must have been Bertrand Russell's *Introduction to Mathematical Philosophy* (1919), a work we know to have been of enduring importance for Borges.<sup>1</sup> As of 1939, the map-within-a-map is a perplexity to be paraphrased from Russell and there is no earlier mention of Royce in Borges's work. By 1944 Royce is quoted favorably in version A of "Nueva refutación del tiempo" (150) as sharing Borges's own metaphysical position about time. The work cited is Royce's two-volume magnum opus *The World and the Individual* (1899, 1901), which was first given as Gifford Lectures in Scotland and stands as his fullest statement of absolute idealism. Borges never cites any other work of Royce, and he must have read or perused it between 1939 and 1944.

What Borges thought of Royce can be inferred from the fact that Borges pairs him with Schopenhauer twice, three decades apart—the highest praise possible for Borges. The first is in a 1945 preface to a Spanish translation of William James's lectures on pragmatism, where Borges notes that James did philosophical battle against "Hegel y a los hegelianos Bradley y Royce y fue tan asombroso como ellos, y mucho más legible" (Borges, "William James," 220).<sup>2</sup> Praise for his thought did not extend to his prose. The second is a passing comment in his late story, "There Are More Things" from 1975 (43). In both sources, Borges treats Royce and

<sup>1</sup> It is mentioned, for instance, as one of the sources in his 1936 essay, "La doctrina de los ciclos."

<sup>2</sup> Of course hardly anyone writes as well as James, but Royce is certainly not as miserable a writer as Bradley. Where Bradley is opaque and interminable, Royce is hortatory and school-teacherly.

Schopenhauer as metaphysicians worthy of the enigma of time and rightly discerns the huge stamp of Schopenhauer on Royce. Perhaps most famously, in “Magias parciales del Quijote” (1949) Borges purports to quote Royce on the map within a map, though he in fact renders a quite telescoped translation of Royce’s original (669). Adding the line from “Otro poema de los dones” mentioned above makes a complete inventory of Borges’s published references to Royce as far as I know. One of the remarkable things about Borges is his lack of jealousy about literary priority: once Borges read Royce, he was happy to attribute ideas to Royce that he had long been thinking for himself. Idealism is a check on the ego’s pretension of being original: it teaches the irrepressible joy of being a copy.

Here we should pause to consider the irregularities of international philosophical reception. That Borges calls Royce a Hegelian shows his debt to between-war English-language philosophical doxa, a view that misunderstood both Royce and Hegel. First, Hegel was never an absolute idealist in the English style. Late nineteenth-century Anglo-American idealists inflated Hegel to such a degree that James mocked them for acting as if they were going up in a hot-air balloon every time the notion of the transcendental Ego crossed their minds (1: 365). German and French thinkers would rediscover a very different, more worldly and dynamic (i.e. Marxist) Hegel in the 1920s and 1930s, a Hegel that did not start to appear in English until well into the second half of the twentieth century. Second, Royce is not exactly a Hegelian. He partook in a much wider legacy of post-Kantian idealism than just Hegel, and was critical of Hegel on several counts, including his hostility to the empirical sciences and his neglect of logic and mathematics.<sup>3</sup> Royce gets called a Hegelian for the same reason that members of the Church of Jesus Christ of Latter-day Saints get called Mormons: the correct description is too long. In his own words, Royce’s philosophy was: “post-Kantian, empirically modified, Idealism, somewhat influenced by Hegelian, but

<sup>3</sup> *The World and the Individual*, I: 526. For Royce’s contrast with Hegel, see Trotter, *On Royce* 22-23. Royce’s *Spirit of Modern Philosophy* clearly demonstrates his debt to nineteenth-century thought, including a large dose of Schopenhauer.

also not uninfluenced by Schopenhauerian motives, with a dash of Fichte added" (Clendenning, 212). We can thus forgive Borges the expedient of "hegeliano." Though Royce called his philosophy absolute idealism for most of his career, his thinking grew increasingly close to James, eventually leading to a final position he called, without considering it an oxymoron, "absolute pragmatism" (Royce, *Problem of Christianity 2*: 123). It is certainly fair to include Royce under the broad pragmatist umbrella, at least as a participant in the conversation.

Borges's reading of Royce raises the larger question of the international reception of American pragmatism. Borges's appreciative reading of James and Royce follows in the footsteps of Borges's mentor Macedonio Fernández, a devoted reader of James who carried on a lost correspondence with him (Nubiola, Schwartz). Borges's interest in Royce reflects the hospitality that American pragmatism found in Latin climes. Such thinkers as Fernández in Argentina, Unamuno in Spain, and Papini in Italy had all written about pragmatism by World War I, with James being its main international face. Though the full story of pragmatism's uptake in the Latin world is yet to be told, Nubiola and Zalamea tell us a lot about Peirce, and note that the first book-length treatments of pragmatism in Spanish were published in Uruguay in 1909 and Argentina in 1910, although the boom of scholarship did not take off until the 1970s. Borges's reading of Royce during World War II fell between two waves of interest, and though Borges read on his own schedule, perhaps Royce's late-life campaign against German imperialism in 1916 gave him further relevance during the war years of the 1940s.

#### EL MAPA DE ROYCE

From "Magias parciales del Quijote" one could get the impression that Royce's map is pithily presented. But *The World and the Individual*, a work of over one thousand pages, is a thorny thicket indeed, and the map metaphor extends at great length. (Indeed, reading Borges and Royce side by side leads one to the inescapable conclusion: Borges is unique among idealist metaphysicians for the concision of his prose. Only Berkeley rivals him.) The fo-

llowing long passage provides the central exposition and gives a good taste of Royce's discursive style.

It would seem as if, in case our map-drawing powers were perfect, we could draw our map wherever we chose to draw it. Let us, then, choose, for once, to *draw it within and upon a part of the surface of the very region that is to be mapped*. What would be the result of trying to carry out this one purpose? To fix our ideas, let us suppose, if you please, that a portion of the surface of England is very perfectly levelled and smoothed, and is then devoted to the production of our precise map of England. . . . But now suppose that this our resemblance is to be made absolutely exact, in the sense previously defined. A map of England, contained within England, is to represent, down to the minutest detail, every contour and marking, natural or artificial, that occurs upon the surface of England. . . . For the map, in order to be complete, according to the rule given, will have to contain, as a part of itself, a representation of its own contour and contents. In order that this representation should be constructed, the representation itself will have to contain once more, as a part of itself, a representation of its own contour and contents; and this representation, in order to be exact, will have once more to contain an image of itself; and so on without limit. We should now, indeed, have to suppose the space occupied by our perfect map to be infinitely divisible, even if not a *continuum*. (Royce, *World 1*: 504-05, original emphasis)

As Royce comments on the map over the next 80 pages as well, it is impossible to summarize, or perhaps even understand, all the subtleties. The context is a good place to start. The map comes in a 115-page supplementary essay to volume 1 of *The World and the Individual* and was invented to score a metaphysical point in a technical dispute with F. H. Bradley. The essay is a skirmish, in other words, between the two leading absolute idealists of the English-speaking world circa 1900 about the relation of the human ("the individual") and the absolute ("the world"). Of this essay Royce said it was "one of the most serious and important things that ever I shall be able to write, or that ever I have written" (Kuklick 370). The "absolute" served late nineteenth-century idealism as a structural equivalent to God or Hegel's *Geist* – the principle that guarantees ultimate order in the universe and meaning to life. Basically,

Bradley's absolute did its work behind the backs of experiencing human beings: it was infinite and inaccessible, but still somehow essential to the ultimate order of things. (James's response was to invite Bradley to jettison the absolute and join the ranks of the pragmatists, since the absolute had no practical tie to human experience besides offering the comfort of ultimate metaphysical order.) Bradley bars the absolute from communication with humanity because we can never approach it without getting stuck in an endless series of relations.<sup>4</sup> Bradley's absolute, rather like his individual, suffers from solipsism. Royce, whose absolute is immanent within experience, cannot tolerate Bradley's icily inhuman conclusion. He says Bradley's system yields "results wholly vain and negative" (Royce, *World 1*: 499) and rather wickedly calls his absolute "a sort of self-absorbing sponge" (565).

Royce's key move is to rethink the absolute mathematically. Bradley gets stuck in an infinite regress, claims Royce, because he does not understand the infinite, which is, after all, a mathematical concept. Drawing on Dedekind and Cantor among other avant-garde mathematicians of the time, Royce argues that "an Infinite Multitude can, without contradiction, be viewed as determinately real" (*World 1*: 476). Infinity can be a "well-ordered series" rather than a sprawling additive arrow. Royce rehearses how Cantor uses a one-to-one mapping procedure to show that the parts of an infinite set correspond to the whole. Though we might be tempted to think that there are twice as many integers as odd numbers, every odd number can be mapped onto an integer serially without limit. Thus, the size of the set of odd numbers is the same as the set of integers. In the same way, every prime number can be mapped onto an integer.

Borges, who learned of Cantor's set theory at least as early as 1921 from Russell, was already steeped in the lore of transfinite numbers when he read Royce.<sup>5</sup> In his 1936 essay "La doctrina

<sup>4</sup> Borges provides a nice summary of Bradley's regress in "Avatares de la tortuga," 257.

<sup>5</sup> Kasner and Newman's 1940 book *Mathematics and the Imagination*, which features an exposition of Cantor's work (42-64), was also a key source for Borges. This book has at least three distinctions: it invented the notion of a "googol" (10 to

de los ciclos” Borges showed a ready grasp of Cantor’s principle that a part of an infinite whole can have a one-to-one relation with the whole. As he says with characteristic pith: “conjunto infinito es aquel conjunto que puede equivaler a uno de sus conjuntos parciales” (“Doctrina” 387).<sup>6</sup> Characteristically pushing the exposition to extremes, he notes that every multiple of 3018 maps onto an integer, and even every exponent of 3018. The “cardinality” or countable order of (1) all integers (2) the odd numbers (3) the primes (4) the multiples of 3018 and (5) the exponents of 3018 are all the same, namely infinite. Cantor called this number  $\aleph_0$  (pronounced “aleph nought” in the UK or “aleph null” in the US), not without a bit of Kabbalistic coyness.<sup>7</sup>

Royce’s map-within-the-map on the soil of England is an illustration of Cantor’s discovery that infinity need not sprawl off into vertiginous seriation, but can take on manageable order, specificity and determinateness. His map is a vivid metaphor of the one-to-one mapping that is central to Cantor’s set theory. Royce wants to guarantee the possibility of concourse between temporal experience and eternal order. His absolute is a kind of species-wide communication of Spirit that stretches across time and space. Even in Royce’s breakthrough work, *The Religious Aspect of Philosophy* (1885), there is an implicit semiotic dimension to the absolute as that principle which makes shared meaning possible among distinct consciousnesses; in his terms, the possibility of error presupposes a larger framework of meaningfulness. (Royce’s characteristic gesture is affirmation ex negativo.) As the vanquisher of solipsism, the absolute is a principle of communication. As he put it in another context, the absolute is “the total spiritual conscious-

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the 100<sup>th</sup> power), its cover is adorned with a large, embossed aleph null (a bibliographic convention Borges would follow in 1949, sans the null), and Borges listed it as one of 75 books of his personal library.

<sup>6</sup> This phrase clarifies the title of “Magias parciales del Quijote” —i.e. a system within a system.

<sup>7</sup> It is debated whether Cantor was thinking of the pregnant term *Ein Sof*, literally *no end*, which starts with an aleph in Hebrew and can mean infinity, nothing, and God in Kabbalistic literature. We do know that Cantor said that *aleph* in Arabic means “herd of cattle” (*Rinderherde*).



ness that expresses, embraces, unifies, and enjoys the whole wealth of our human loyalty, endurance, and passion" (Royce, *Spirit* 216). The absolute is God and humanity at once – and at one.<sup>8</sup> His fascination with the mathematical infinite is part of his ongoing project to achieve the reconciliation of "the One and the Many."

The map metaphor illustrates Royce's claim that the absolute is an "internally Self-Representative System" (*World*, 1: 509). There is a world of difference between self-representation and self-absorption. The absolute has the form of a self, and for all idealist thinkers since Fichte, self-consciousness was the criterion of selfhood. Fichte, indeed, is an important ancestral figure for pragmatism, especially in his principle that the self constitutes itself as a self in an act of self-constitution. The choice to act is prior to any cognition. The Faustian-Fichtean idea that in the beginning was the act shows up in James's will-to-believe, Peirce's "primary and fundamental abduction" (Almeida 14), and Royce's idealism. Since the absolute must have self-knowledge, the notion of a self-representative system gives Royce a way out of the Bradleyan prison of the ego, in which we each have "heard the key / Turn in the door once and turn once only" (Eliot lines 412ff). Royce jubilantly proclaims that his map shows a "self-ordered unity in the midst of infinite diversity. . . . What interests us is the positive structure of the whole intellectual world. We have found that structure. It is the structure of a self-representative system" (537). Triumphantly he claims:

The Universe, as Subject-Object, contains a complete and perfect image, or view of itself. . . . *Whatever is, is a part of a self-imaged system* . . . And hence our trivial illustration of the ideally perfect map of England within England, turns out to be, after all, a type and image of the universal constitution of things. I am obliged to regard this result as of the greatest weight for any metaphysical enterprise. (553, original emphasis)

In an update of Berkeley's principle that *esse est percipi*, Royce makes being and being represented one. And what is the name

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<sup>8</sup> In his idealist-collective anchoring of meaning, Royce resembles another figure born two years after he was: Ferdinand de Saussure. His absolute maps onto Saussure's *langue*.

of the self-imaging system that is (within) the universe? Cantor, Royce, and Borges all call it the aleph.

Royce's thought-experiment of "resemblance . . . made absolutely exact" is sooner an illustration of set theory than a program of perfection. As a philosopher of media, that is, as an analyst of the radically distinct carrying capacities of distinct modes of presentation, Royce is close to Peirce. In chapter 7 of *The World and the Individual* Royce probes the central issue of both maps and sets—the nature of correspondence—and concludes that there are many modes besides likeness: "entries in the ledger give a better record of their own aspect of the commercial transactions than a legion of phonographs and kinoscopes, set up in a shop to record transactions, could, by any perfection of literal reproductions, retain" (1: 310). Here Royce nicely captures the media network of 1900: ledger, phonograph, and kinoscope are alphanumeric, acoustic, and optical processing devices and line up roughly with two famous triads: typewriter, gramophone, and film (Kittler); symbol, index, and icon (Peirce). Royce's defense of cognitive short-cuts and intellectual expedients against the rising tide of positivism—with its rigor in science—puts him close to James's pragmatism. Iconic realism is no representational panacea: "you cannot photograph the solar system, nor yet the constitution of a molecule. . . . In general, the photograph gives us at its best very one-sided ideas of visible objects" (305). Royce finishes his critique with this Borgesian clincher: "the idea would be false in case it did look too much like its object" (307).

Borges is the great theorist of how likeness harbors difference and it is nice to imagine him having read this passage. It is a joy to be a copy because, in the end, every copy is unique. Pierre Menard's "translation" of the *Quijote* may be verbally identical to the original, but it does not have the same meaning. Even a perfect copy will remain eccentric to the original because copy and original can never share the same history. Borges, like Kafka and Benjamin, follows the principle I have elsewhere, inverting Leibniz, called "the discernibility of identicals" (Peters 237-41). Even if our powers of representation were absolutely exact, a residue of difference would remain between copies. This sense for the

wily impossibility of repetition, the recalcitrant way that difference erupts amid every identity, and the ultimate failure of every attempt at perfect depiction is deeply Jamesian. Idealist hubris always melts before the singularity of things. That no copy can deny the uniqueness of its birth is a political and ethical principle of escape from the bad infinities conjured by dogmatists, dictators and demiurges. Borges I see less as a dreamer of total fictions than a celebrant of the blessed ruptures in them, and thus closer to James than Royce. The universe itself may be such a total fiction: freedom rests upon those “intersticios de sinrazón” that tell us it is false (Borges, “Avatares” 258). The impossibility of a medium capable of perfect replication is both an ontological point about the nature of things and an ethical point about the uniqueness of every act.

Though Borges is skeptical, albeit in an enchanted way, about Royce’s project of salvaging ultimate meaning, they drew similar conclusions from Cantor. For Royce, a mathematically determinate infinity showed how the absolute could be both infinite and singular, that is, how rational totality and fragmentary human experience could be squared. For Borges, Cantor’s “heroic theory of sets” refuted Nietzsche’s doctrine of eternal recurrence. Between the two smallest fractions that one could possibly imagine there is still an infinity of other fractions. Because every point contains an infinite universe of other points, Borges concludes, the probability that anything will occur twice in exactly the same way can be calculated precisely as zero. Thus Nietzsche, he claims, is refuted (Borges, “Doctrina” 387). In fairness, Borges treats Nietzsche’s *ewige Wiederkehr* rather tendentiously as statistical permutations among physical states rather than as a moral commentary on loving one’s fate by acting *as if* everything we do were worthy of eternal repetition (Selnes). Cantor played a similar role for Borges as for Royce: as a cure for the cosmic weariness of what Hegel called “bad infinity” (endless seriation). A map on the soil of England contains an infinity within the map, not in an endless loop. The fact that any interval, even a single point, contains an infinity, an  $11 \text{ pt}_0$  of points, refutes the idea that all action is a copy or infinite series of copies of some future or past event. Royce domesticates

the infinite; Borges denies the possibility of repetition in the universe. Both, especially the latter, are Jamesian moves.

#### MAPS ON A SCALE OF 1:1

German media theorist Bernhard Siegert (65-91) sketches an important possible historical context for Borges's interest in map-making. The Spanish empire under Philip II, Siegert argues, was a birth-place of both the modern bureaucratic state and of modern experimental science, which emerged from the data-management of state-sponsored media. The medieval monarch typically displayed power through a royal tour of the kingdom, binding different locations together through an itinerary of bodily sightings. Philip's power was made manifest in a different manner. Breaking from the medieval practice of taking the royal body on tour, Philip founded his state on information-processing media: "Cada día llegan montañas de papeles: noticias, informes, memoriales, consultas, peticiones. El rey, rodeado de un creciente ejército de funcionarios, lo revisa todo y, llegado el caso, resuelve. Antes el rey acudía al problema, ahora el problema acude al rey" (Comellas 102). Indeed Philip was sometimes called "el rey papelero." *Quod non est in actis, non est in mundo* [what is not in the documents is not in the world] is a dictum ascribed to Philip's (twice) great grandmother Queen Isabella that he applied in a three-fold project of managing the empire via numbers, images, and writing, that is, via accounting, cartography, and narrative reports. All three of these media required disposable paper, experts, and the institution of the office. Whereas medieval space had been anthropomorphic or allegorical, represented in the king's body or heraldic emblems, the new space of New Spain was abstract and navigational. America, Siegert claims, was born of measurement and as a space of data. European exploration of the seas built on a new kind of mapping—as abstract mathematical grid instead of concrete theological narrative. "Space as a hierarchy of values was replaced by space as a system of magnitudes" (Mumford 20).

Siegert's key moment of transformation was the 1570s, though there was a longer prelude. La Casa de Contratación, the chief institutional site in his account, was first founded in 1503 as a

storehouse for trade with the New World but soon became a central processing unit for managing data about ships, commodities, people, and places. The record and the reality were supposed to match one to one. Under the initial leadership of Amerigo Vespucci, appointed in 1508, the casa housed the “padrón real,” a constantly updated map of Spanish possessions. Siegert calls the *padrón real* a “metamedium” — the standard against which all other Spanish maps were measured. All returning ships captains were ordered to supply updates from their logs, something they seem to have done without enthusiasm, in part because having a central map under royal control undercut their monopoly of knowledge of navigation by dead-reckoning, currents, and lunar cycles. The position of “cosmógrafo, fabricador de cartas e instrumentos para la navegación” was created in 1523 and was occupied by a number of important scholar-bureaucrats in the next few decades. The most important of these figures for Siegert was Juan de Ovando, who introduced sweeping administrative reforms in 1571. His aim was a “recopilación de Indias” involving, yet again, three kinds of data: tabular (lists and accounting), graphical (maps and images), and textual (narrative, description). Section 3 of his *Ordenanzas* called for nothing less than a “descripción y auerigación cumplida y cierta de todas las cosas del estado de las Indias” (Siegert 86). According to Ovando, if the crown’s data were incorrect or out of date, the empire itself would be threatened with ruin. As Siegert notes, “paperwork was a battle against entropy” (79). In a sense, the Spanish empire was simulated in the Casa de Contratación; data were the place the empire existed as a manageable totality. The New World was a mapping experiment in which data about the territory coincided with the territory itself—at least as far as royal power was concerned. (The native peoples of the Americas doubtless had other opinions.)

Here scholarship bites its own tale: Siegert’s narrative culminates in Borges’s “Del rigor en la ciencia,” and notes that “Ovando’s bottomless rage for description would be satisfied with nothing less” than a map that would coincide point-by-point with the territory. Borges’s fictional sourcing of the tale to a seventeenth-century Spanish travel narrative by one Suárez Miranda about

“varones prudentes” and a kingdom of fanatical *cosmógrafos* faintly recalls Siegert’s context. According with the principle that Borges’s fictions, like all maps, leave traces of historical reality in them (Balderston), we might strain to hear a faint echo in one seventeenth-century item in the Catálogo Colectivo del Patrimonio Bibliográfico Español: Melendo Suárez de Miranda, “Memorial que presenta a los pies de su Magestad el Capitan de Mar y Guerra de la Fragata S. Thomas de Aquino . . . para manifestar su inocencia en respuesta de los cargos que le ha hecho el Auditor General sobre la perdita de Galeon S. Juan” (1692). This appeal unites the name “Suárez Miranda,” centralized government control, and seventeenth-century Spanish shipping, not to mention scholastic metaphysics. The project of a one-to-one map lies in tatters in the seventeenth century, rather like the Spanish empire itself.

A more proximate source for a 1:1 map is Lewis Carroll’s *Sylvie and Bruno Concluded*, the second volume of his final novel.<sup>9</sup> A dialogue between the unnamed narrator and a German professor called “Mein Herr” unfurls as follows. The German notes that his country learned map-making from the English:

“But we’ve carried it much farther than *you*. What do you consider the *largest* map that would be really useful?”

“About six inches to the mile.”

“Only *six inches!*” exclaimed Mein Herr. “We very soon got to six *yards* to the mile. Then we tried a *hundred* yards to the mile. And then came the grandest idea of all! We actually made a map of the country, on the scale of a *mile to the mile!*”

“Have you used it much?” I enquired?

“It has never been spread out, yet,” said Mein Herr: “the farmers objected: they said it would cover the whole territory, and shut out the sunlight! So we now use the country itself, as its own map, and I assure you it does nearly as well.” (Carroll 169)

The sly humor in the “nearly” we may retroactively read as Borgegian. Carroll, in his other incarnation as Oxford mathematics professor Charles Lutwidge Dodgson, opposed Cantor’s set theory. Could his depiction of a gonzo German professor extolling

<sup>9</sup> This source is pointed out by both Siegert 90-91, and [www.answers.com/topic/on-exactitude-in-science](http://www.answers.com/topic/on-exactitude-in-science), accessed 13 April 2007.

map-making on a scale of 1:1 have been meant as a sideways attack on Cantor's one-to-one method of determining the cardinality of infinities? Probably not.

#### MAPS ON A SCALE >1:1

Borges scholarship sometimes confuses the excessively exact map of "Del rigor en la ciencia" with Royce's map.<sup>10</sup> Are they the same? Not exactly. The first raises the problem of distorted scale, of a rage for likeness that culminates in futile difference; the map within a map raises the problem of *mise-en-abîme* that culminates in dizzy self-knowledge. And yet the problems of inflated scale and *mise-en-abîme* are ultimately convertible. A map that would cover the whole of England is just one level upward on the series of maps that Royce puts on the soil of England. He only imagines his series of maps growing smaller within each other, but there's no reason that we can't imagine the other way. Every level implies another level, so why not go upwards? If every map is found within another map, what map is the map on the soil of England found within? The answer, of course, is the territory of England itself, which surely does nearly as well as a full map of England.

Let us complete Royce's map by asking what would happen if we continue to zoom out. What map is the territory of England found within? It would seem as if, in case our map-drawing powers were perfect, we could draw our map wherever we chose to draw it. Let us, then, choose to draw it both covering and extending beyond the whole of the surface of the very region that is to be mapped. A map of England on a scale of, say, 2:1 would magnify all the shapes and contours of the territory. Its center would cover the territory of England and its edges would spill into a surrounding penumbra. Since it is a perfect map that represents the territory of England in every quantum and scintilla, it has to represent whatever occurs on the territory. Since the territory has just been covered by a huge map that doubles everything in size, a perfect representation of the territory will have to show that portion of the meta-

<sup>10</sup> Dubnick, for instance, refers to "Josiah Royce's hypothetical map coextensive with the territory it purports to represent" as well as his "map-within-a-map" in "Bodying Forth the Impossible." Only the second is found in Royce.

map that has just covered it. The outer ring of the meta-map that dangles beyond the borders of the territory is of no interest for the meta-map, whose task remains representing England itself. (How the meta-map is able to keep finding the real England among the accumulating layers—i.e. how the territory retains its sovereignty as the determining template for representation—is a problem I leave unresolved here—and one which Royce didn't explain.)

How will the meta-map depict the inner core of England, now magnified 2x and covering the whole of the territory? It faces a curious problem. For the doubled core is now coterminous with England itself, and thus must also be doubled if the meta-map is to do its job perfectly. (Let us assume that perfection in mapping includes updating and responsiveness to changes.) Thus the entire map, including its dangling outer rings, must now represent the new image superimposed on the territory of England, making a 4x magnified version. If the doubled inner core is doubled again, then will not the meta-map need to represent this doubling again? We face yet another infinite series, though more monstrous than in Royce's original map. The doubling must be doubled ad infinitum, every iteration mapping a smaller piece of the territory. If all levels in the series of magnifications occur instantaneously the meta-map of England will produce an enlarged image of the ever receding central point of the territory. If every iteration took a time span of, say, one second, the first doublings would reveal a fascinating parade of ever more magnified views of the center of England. But soon the doublings would plunge the map into the null space of representation. The abstraction of a receding point would bleed the image dry. Our 2:1 map would culminate in the endless blowup of a geometrical point.

Royce's original map and our perverse 2:1 map have a certain symmetry. In his map, the iconic integrity of the map of England is preserved at all levels. Even as the maps-within-maps recede toward a point, they remain images connected with the territory by a one-to-one correspondence. In our map, the total view is lost in the very first round of copying. The zero point expands instantaneously, overwhelming all representational relationships. Royce's map, though it grows ever smaller, is actually like a telescope, in



that finer levels of magnification allow more distant views. The 2:1 map, in turn, is like a microscope whose zoom function has run amok: descending the ladder of magnification it will burrow until all it maps is the fractal graininess of the null point at the intersection of the X and the Y axis. Few items better deserve the Borgesian term “vertiginous” than this mad feedback loop.

A remarkable feature of Royce’s map was pointed out by Peirce, who wrote a review of *The World and the Individual*: at any level in the series, there will always be a point on each map that corresponds exactly with the territory (Peirce CP 8:100-130; Almeida 27). Though Royce’s map may seem a fantastic thought-experiment, it is in fact a discovery about the nature of maps in general: namely, that it makes a difference in what space the map is found. Any map used for orientation must be a map-within-a-map. A map of Paris may be useful to me, in Iowa City, for education or nostalgia, but will not be self-representative. If I use this map in Paris, however, it must imply a virtual, mobile point at which the map itself is located. When a map (assuming a scale  $<1:1$ ) is found within a territory, the map must be found somewhere within the map. The first thing a user of a map must do is find the map on the map, i.e., must pinpoint the spot on the map where the user, map in hand, is located. Fixed maps often designate this spot with a dot that says “You are here.” GPS, astrolabes, and orienteering by compass fill this function as well. With a handheld map, the “you are here” spot can move around on (or off) the map. Royce’s insight was to expand the you-are-here spot two dimensions from a point to a plane, so that the map has an element of self-representation instead of only self-location; and he made the map find itself instead of asking the user to do so. Royce’s map draws itself while an ordinary map serves the navigational convenience of its users by restricting its self-representational resources to a miserly single point. Their proud semiotic incompleteness makes maps preeminent pragmatist devices. (As modelers of potential movement in space maps are also motion pictures of a diagrammatic sort: “projection” was a mapping term long before it was a cinematic or psychoanalytic one.) Any map that corresponds to a real territory is necessarily self-referential, at least potentially.

Whether there is no existence without self-representation in the universe can be debated, but this is certainly so in maps.

#### MAPS, MEDIA, AND MATHEMATICS

Royce, Peirce, and Borges point us to a later mapping of England. In 1967 Benoit Mandelbrot, the inventor of fractal geometry, famously asked “How Long is the Coast of Britain” and concluded that the length depended on the measuring stick.<sup>11</sup> The coast of Britain is infinitely subdivisible, which is to say that it is “fractal” or statistically self-similar. A longer measuring stick will discover a shorter total length than a shorter one, but for all sizes of sticks the ratio between stick and length remain more or less consistent (which means we can determine the coastline’s “topological dimensionality,” which is about 1.25). In the empirical measurement of Britain’s coast, a limit point will be eventually reached in which the measurement error is greater than the observation. Measurement will become grainy as we confront specks of silica or the subatomic constituents of matter. But mathematics, like metaphysics and literature, need not care about time, space or particulate matter, and Mandelbrot in 1967 was happy to imagine infinitely nested patterns within patterns (as computer imaging techniques improved, he became an enthusiast of drawing spectacularly beautiful images of fractals). At some point empirical (i.e. finite) observers will reach the limits of just noticeable differences of perception or the ultimate constituents of matter; indeed, the Planck constant suggests there are ultimate, though ultrafine, limits of space and time that cannot be passed. When we think mathematically, we need not care about matter or finitude and are free to dream maps that are perfect in representation at all levels of resolution and instantaneous in feedback. We can think around the infinite (thanks in large part to Cantor’s maps), but we can never measure it or see it. Our means of depiction — our media — always fail us. This failure of the infinite is, perhaps, the condition of human action.

As thinkers of the paradoxes of infinite series, especially with respect to time, Royce and Borges probe the metaphysics of copy-

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<sup>11</sup> Dayan suggests the relevance of fractals to Borges.

ing. This places them squarely in the domain of the philosophy of media. Identity at all levels of magnification or infinite exactitude in depiction is possible in mathematical fantasy, not in any really existing medium. From Laplace and Babbage on, many dreamed of infinitely continuous inscription at all levels of magnification in analog media such as photography and phonography, such that finer and finer magnification would reveal infinitely explorable treasures of sight and sound to be blown up or slowed down on ever finer scales (Peters, "Space"). Royce sits at the end of this line by radicalizing the fantasy of a perfectly fine representation. Yet media, unlike mathematics, always eventually reach a limit of resolution. Magnifying a photograph will eventually disclose grains of silver nitrate, and a digital picture will eventually reach pixels. The properties of the medium—following Roland Barthes I am tempted to say its "grain"—will eventually overwhelm the object and the medium will sooner or later forfeit all referential power. (The textbook example of a fractal phenomenon is a video camera shooting a video monitor at a mapping ratio of 1:1; Peitgen et al. 24-27). Unlike mathematics, the fate of all media theory is noise. It must face the inevitable degradation to which repeated copying leads. Mathematics, in contrast, is free from empirical matter with all its grain and dust. With Plato, its patron saint, mathematics studies how to die—i.e. how to transcend finitude. Our instruments—eyes, ears, cameras, sound recording—are by definition limited. What a medium would look like that never succumbed to granularity is a dizzy question that Royce and Borges both teach us to ask. Borges suggests that it would be a nightmare; Royce does so performatively by the endless vortex of his prose. Imperfection is the hallmark of life—and of media. All empirical representation both depends on and crashes into the wall of finitude. We are lucky to have imperfect maps.

In his warmly appreciative preface to James's lectures on pragmatism, Borges quoted Coleridge that all people are born either Aristotelians or Platonists, noting: "para éstos, el lenguaje no es otra cosa que un sistema de símbolos arbitrarios; para aquéllos, el mapa del universo" (Borges, "Pragmatismo" 219). Borges places James in the first camp, of course, but Borges's sympathies may be surprising to those who would place him in the second camp.

James's pluralistic universe may be inferior aesthetically to a monistic one, but it is ethically superior: "Es el único, acaso, en el que los hombres tienen algo que hacer" (221). And the notion that language is a map of the universe is no endorsement of the "Platonist" side, since a map, even one whose resemblance is made absolutely exact, could only be, as we have seen, a system of arbitrary symbols. Perfection in mapping can come only by self-swallowing or smothering its territory.

In the end, Royce provided Borges with an image of the universe that is "singular, unbelievable, and unforgettable." James, in turn, encouraged Borges to keep a vigil at the ceaseless flow of the universe's self-representation, watching for failures and other signs of "la inmortalidad y la libertad" (Borges, "Pragmatismo," 219). As in James, I hear in Borges the rustle of an intelligence that takes delight both in grand pictures of the universe and in the paradoxes that show any such picture, however captivating, to be false. For Borges the metaphysical stakes are higher than for James, because Borges is haunted by the thought that the universe is itself a grand picture; James, despite his mighty wrestle with nihilism and his flirtation with the spiritualist continuum of nonhuman intelligence, remains secure that all the crazy ideas out there are ultimately products of the human imagination. Even so, they share a willingness to be charmed by metaphysical fantasies, but never long enough to mortgage their souls to them.<sup>12</sup>

*John Durham Peters*  
*University of Iowa*

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