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Borges and Peirce, on abduction and maps

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I would like to begin with an enigmatic quotation:

When I was a boy, my logical bent caused me to take pleasure in tracing out upon a map of an imaginary labyrinth one path after another in hopes of finding my way to a central compartment.

If we try to guess who is the author of the fragment above, it is quite probable that, because of the context, the name of Jorge Luis Borges would arise. This conjecture is reasonable but wrong: in fact, the author is Charles Sanders Peirce, from *The Simplest Mathematics* (CP 4.533). Peirce is the architect of a theory of guessing, which he tried to derive from the Aristotelian concept of 'abduction' ('abduction is, after all, nothing but guessing', Peirce [CP 7.219] says). The other, and the most common, word for 'abduction' is 'conjecture'.

Borges's reiterated recourse to a conjectural way of thinking is well known, and it constitutes a great point of confluence with Peirce's philosophy. Furthermore, Peirce also shares with Borges a fascination for the theory of maps. And both dialogue indirectly through their common references to the pragmatism of William James and to the theory of maps developed by his idealist disciple, Josiah Royce. Peirce was at the same time Royce's rival and friend. Borges (1989/96: 4.433) declares in 1939 to have discovered his theory in about 1921, 'in one of Russell's books', but he was so deeply captivated by it that in 1963, in 'Otro poema de los dones' he thanks the 'divine Labyrinth of causes and effects', among others, 'for Zeno's tortoise and Royce's map' (Borges 1989/96: 2.315).

The aim of this essay is to consider the confluences and divergences between Peirce's explicit and Borges's implicit theory of conjecture. It is not a matter of weaving artificial links between the two authors one loves. Rather, I wish to share a surprising discovery of some family likenesses, focalized here through the theme of maps and mapping as a way to resolve the question of the guaranties of conjecturing.

As we have experienced in the exercise proposed above, conjecturing consists in provisionally asserting something without sufficient arguments. Nevertheless it constitutes, paradoxically, the most frequent inferential activity in human day-to-day existence. Ordinary conjectures range from the assertion of God, to simple strategies in finding lost objects, through the interpretation of texts, events, intentions, and also through medical diagnoses, scientific hypotheses, riddle solutions, and detective investigations.

Should we, hence, admit that human beings spend most of their time making wrong inferences or uttering unfounded discourses? Or is there in the constitution of the universe some pre-established harmony that guarantees the right to make, provisionally, these kinds of intellectual decisions? For Peirce, the legitimacy of conjecturing (or abducting) lies in a kind of optimistic presumption about the relationship between the mind and world. This presumption — which is in its turn also a conjecture — is called by Peirce ‘fundamental and primary abduction’. I hope to show that the originality of Borges’s way of conjecturing is built, precisely, on the radical originality of his own underlying ‘primary abduction’.

Outlines of the Peircian concept of ‘abduction’

Abduction is the inferential activity that, once an aberrant phenomenon is found, tries to discover or construct a norm according to which this aberration can be interpreted as a normal case. Its basic question can be formulated as follows: What must or can be supposed to be true so that this unattended phenomenon can find therein a way of normalization, able to make it comprehensible? Or, more simply: What should be the question to which this result can constitute the answer?

In order to propose a variation on the classic Peircian example, let us suppose that I find on the carpet a small black round-headed screw, which obviously should not be there. This is a trivial but not normal find. Looking around for a while, I realize, say, that my computer has the same kind of screws. The economy of my ordinary logic impels me to search for a missing screw, first of all in my computer. If this is the case, my discovery is no longer exceptional, and the mind can finally rest. Another example, supplied by Peirce: we can find fossils and remains of fishes in the middle of a desert: this is an aberrant fact that troubles the reason; at this moment, and without any previous proof, the inner semiotic mechanism of abduction releases itself in the hope of finding some frame of plausibility within which this odd fact could be declared

to be a case; and thus the conjecture that the sea formerly covered this area produces the necessary satisfaction for reason.¹

The logical structure of the abduction is, according to Peirce (*CP* 5.189):

The surprising fact, *C*, is observed;
But if *A* were true, *C* would be a matter of course,
Hence, there is reason to suspect that *A* is true.

We can also propose a few literary examples:

I read, some days ago, that the man who ordered the erection of the almost infinite wall of China was that first Emperor, Shih Huang Ti, who also decreed the burning of all the books that were written before his time. That these two vast undertakings — the five to six hundred leagues of stone opposing the barbarians, the rigorous abolition of history, in other words, of the past — had proceeded from the same person and had become in some way his attributes, inexplicably satisfied me and, at the same time, disturbed me. To investigate the reasons for this emotion is the purpose of this note. (Borges 1989/96: 2.11)²

Or, summarizing a narrative plot, how is it reasonable to interpret a sequence of unexplained murders, where the first was committed in the north, followed by an explicit reference to the first of the four letters which form a name; then the second, in the west, with a reference to the second letter of the same name, then the third in the east, followed by a mysterious message telling that this is the last murder of a triangular series, related to the 'last' letter of the same name? (Borges 1989/96: 1.451)

Our knowledge is, in fact, made up of habits, and these habits (the ordinary belief) determine what is expected. A problem, therefore, is something we do not expect to find in the normal state of events (for instance, the unexpected triangular closure of a structure redundantly announced as being quadrangular). Such a situation asks for the logical process of interpretation. We need to elaborate presumptions based on a rearrangement of facts, because a problem troubles the thought and, following Peirce, 'thought in action has for its only possible motive the attainment of thought at rest', since the irritation produced by the doubt is for him 'the motive for thinking' (*CP* 5.397).

Our knowledge of any subject ... never goes beyond collecting observations and forming some half-conscious expectations, until we find ourselves confronted with some experience contrary to those expectations. That at once rouses us to consciousness: we turn over our recollections of observed facts; we endeavour so to rearrange them, to view them in such new perspective that the unexpected experience shall no longer appear surprising. This is what we call explaining it,

which always consists in supposing that the surprising facts that we have observed are only one part of a larger system of facts, of which the other part has not come within the field of our experience, which larger system, taken in its entirety, would present a certain character of reasonableness, that inclines us to accept the surmise as true, or likely. (CP 7.36)

The keyword of this paragraph seems to be the verb 'to explain'. Abduction is a process of explaining something that falls outside our ordinary expectations. The method of this process is presented — at least at the beginning — as a 'rearrangement' of the observed facts.

This perspective is central to understanding the difference between abduction and induction. Induction aims at a generalization of an individual fact, but seeks for facts. Abduction aims at an explanation, keeping the individual facts as individuals, but seeking a theory (CP 7.218). A theory or, at least, a frame. In a rather Borgesian formulation, Peirce (CP 7.196) says that when we are confronted with unexpected facts, our spontaneous reaction consists in 'working up biographies to fit them'. In this way, we can say that among the different inferential devices, only abduction deserves the name of 'interpretation'.

Now let us summarize some conditions inherent in the act of abducting:

1. One abducts when there is insufficient data to affirm or insufficient arguments to prove something that one is somehow 'forced' to explain. This kind of situation is the most frequent in everyday rational assumptions.
2. The abduction thus becomes a kind of 'reasonable decision' that, considering the insufficient information as 'symptoms', rearranges them in order to find the 'best explanation' (which seems to imply that there is more than just one possible explanation).
3. The comparison of possible interpretations follows the principle of 'reasonability' often combined with a maxim of economy of steps. This is why sometimes the abduction prefers to begin by borrowing an argument from a similar situation already proved. In this way Umberto Eco (1985: 168) recalls that the term 'abduction' is normally used in English as a synonym of 'kidnapping' (like in Mozart's opera, *The Abduction from the Serraglio*).
4. Abduction can give some rest to reason, and can lead to an eventual demonstration, but being a pure conjecture, it can never be considered as proof. In Kantian terms it can be said that the very nature of the abduction as intellectual activity can be assimilated to the geographical category of 'orientation': 'To orientate oneself in thought means: when

the objective principles of the reason are insufficient, to make up one's mind to assert, following a subjective principle of the reason' (Kant 1923: 136).

The primary abduction

A very striking experience for every Borges reader is the profusion of conjectural formulas, not only, of course, when he explores a particular 'detection' plot, but even in his most poetic creations, not to mention his theoretical essays. It can be said that conjecture or, to be more accurate, abduction, is Borges's normal way of reading the world, as well as the essential trait of his *ars poetica*. But the Borgesian abduction also assumes some specific features that we have to consider, albeit only because of the new light they project onto the general problem of interpretation.

There is an exclusive condition of abducting, considered as an inferential device, that is very seldom considered, even though it seems to determine its essential difference in relation to induction and deduction. This characteristic, which becomes extremely relevant as soon as we are confronted by Borges's literature, is the 'recursiveness' of abduction. This means that we cannot conceive a deduction of deduction, nor different levels of enclosed induction. Still, a normal abduction can only be guaranteed by another abduction, set at a higher level.

Speaking more concretely, behind each ordinary abduction there is another abduction (another presumption) concerning our faculty of reasoning that allows us to provisionally accept some hypothesis only because it is 'agreeable to reason'. This means that all our inferences and thoughts start from the presumption that there is a secret, yet fragile, harmony between reason and reality. Peirce considers that 'the existence of a natural instinct for truth is, after all, the sheet-anchor of science'. (CP 7.220)

As a starting hypothesis, this 'rational instinct to truth' is already abduction. It is an abduction of abduction or, in reference to Umberto Eco's terminology, a 'meta-abduction': 'It consists in deciding as to whether the possible universe outlined by our first-level abductions is the same as the universe of our experience' (Eco 1983: 207). This means that every abduction is implicitly set in another more general abduction that concerns the relationship between knowledge and the world. Its formulation could be as follows: 'if abducting was logically and ontologically legitimate (meta-abduction) and if ... (first-level abduction), then this result should be justifiable'.

Peirce calls this foundational presumption ‘primary abduction’:

I now proceed to consider what principles should guide us in abduction, or the process of choosing a hypothesis. Underlying all such principles there is a fundamental and primary abduction, a hypothesis which we must embrace at the outset, however destitute of evidentiary support it may be. That hypothesis is that the facts in hand admit of rationalization, and of rationalization by us. That we must hope they do, for the same reason that a general who has to capture a position or see his country ruined, must go on the hypothesis that there is some way in which he can and shall capture it. We must be animated by that hope concerning the problem we have in hand, whether we extend it to a general postulate covering all facts, or not. Now, that the matter of no new truth can come from induction or from deduction, we have seen. It can only come from abduction; and abduction is, after all, nothing but guessing. We are therefore bound to hope that, although the possible explanations of our facts may be strictly innumerable, yet our mind will be able, in some finite number of guesses, to guess the sole true explanation of them. That we are bound to assume, independently of any evidence that it is true. Animated by that hope, we are to proceed to the construction of a hypothesis. (*CP* 7.219)

In fact, the ‘primary abduction’ also seems to be, for Peirce, an object of abduction. Actually, the assumption that what is ‘agreeable to reason’ (the formula is very frequent in Peirce) should be true presupposes itself a deeper assumption: how shall we think about the relationship between mind and world in order to render reasonable our right to make conjectures? To this level belong most Borgesian conjectures.

Peirce assumes that in this harmony the relation between the terms follows a strict orientation. ‘The mind interprets the world’ means that the point of reference is the real world and the sign is the mind: Mind → World. There is no way to invert the arrow, which shows at the same time the ontological priority, the direction of the reference and hence the sequence of the inferential dependence. In fact, this Peircian assumption is always triadic, because the harmony between mind and world postulates a third level, where this harmony is reckoned by the Interpretant. But this is not the only way of conceiving a primary abduction, as we shall see.

Characteristics of Borgesian abduction

Borges’s way of abducting is far from canonical. Particularly, the way he builds his own primary abduction is basically and thoroughly aesthetic. This statement, which has become a common cliché, calls for an explanation.

First

Concerning the goal of conjecturing, Borges's disagreement with Peirce's conception is striking. One makes conjectures, according to Peirce, to bring reason to rest. Reason is troubled by perplexity and doubt, and since its natural position is rest, it tries, by abduction, to attain at least a provisional state of quietude. For Borges, on the contrary, the 'normal' state of reason is not rest, but the poetic vibration that precedes every assertion. If we reconsider the introduction to 'The Wall and the Books' quoted above, we can see that what is agreeable to reason is at the same time what is capable of disturbing it: 'inexplicablamente me satisfizo y, a la vez, me inquietó' [inexplicably it satisfied me and, at the same time, it disturbed me] (Borges 1989/96: 2.11). Therefore the goal of a single abduction is not to resolve the trouble but to 'investigate the reasons for that emotion'.

This is why, later in his essay, Borges will state each hypothesis in a modal way: 'perhaps', in order not to banish the fundamental pleasure of perplexity. And that is why the article ends with a definition of the 'aesthetic fact', as if it were the only possible way of explanation: 'the imminence of a revelation that does not occur is, perhaps, the aesthetic fact'.

Curiously, Peirce has a small theory of the expression 'perhaps', which seems built to fit Borgesian presumptions, even if it was, in fact, conceived for Aristotle:

His physical hypotheses are equally unfounded; but he always adds a 'perhaps'. That, I take it, was because Aristotle had been a great reader of other philosophers, and it had struck him that there are various inconsistent ways of explaining the same facts. (*CP* 7.202)

Also the 'rearrangement of facts' — necessary to produce a correct abduction — obeys to the perplexing aim Borges assigns to the activity of reason: to remain in trouble. Dunraven, a character in 'Abencaján el Bojari', expresses Borges's voice by thinking 'that the solution of a mystery is always inferior to the mystery. The mystery has a touch of the supernatural and even of the divine about it; while the solution, of sleight of hand'³ (1989/96: 1.604–605).

Moreover, a conjecture can be recognized as true even though it has not resolved the problem: 'La cuarta conjetura, como se ve, no desata el problema. Se limita a plantearlo, de modo enérgico. Las otras conjeturas eran lógicas; ésta, que no lo es, me parece la verdadera'. [The fourth conjecture, as we can see, does not unravel the problem. It limits itself

to stating the problem in a vigorous way. The other conjectures were logical; this one, which is not logical, seems to me to be the true one] (Borges 1989/96: 3.39).

Second

Concerning the 'rearrangement of facts', Borges's abduction neglects one of the conditions of Peircian standards. Following Peirce, the decisive distinction between abduction and induction lies in the fact that, instead of counting objects, abduction deals with different 'characters' of one object, in order to determine a 'class' of objects and hence a principle of recognition: 'A number of characters belonging to a certain class are found in a certain object; whence it is inferred that all the characters of that class belong to the object in question' (CP 2.632). This principle of recognition, based on the empirical observation of the facts, which constitutes the first condition of every detection activity (cf. Sherlock Holmes and his analysis of cigar ashes), is systematically absent from Borges's abduction, even when the question is about detective methods of reasoning.

Don Isidro Parodi, the infallible private detective who resolves every riddle without leaving his jail cell, fails when he is confronted with a simple 'empirical abduction'. Let us consider this fragment of *Seis problemas para don Isidro Parodi*:

El 9 de septiembre entraron dos damas de luto en la celda 273. Una era rubia, de poderosas caderas y labios llenos; la otra, que vestía con mayor discreción, era baja, delgada, el pecho escolar y de piernas finas y cortas.

Don Isidro se dirigió a la primera:

- Por las mentas, usted debe ser la viuda de Muñagorri.
- ¡Qué gaffe! *dijo la otra con un hilo de voz*. Ya dijo lo que no era. Qué va a ser ella, si vino para acompañarme. Es la fraülein, Miss Bilham. La Señora de Muñagorri soy yo. (Borges 1979: 57)

[On September 9 two ladies dressed in mourning entered cell number 273. The first was a blond woman, with powerful hips and plethoric lips; the other, dressed more discretely, was small, slim, with a bust of a student and elegant, short legs.

Don Isidro spoke to the first:

- Apparently, you must be Muñagorri's widow.
- What a gaffe! (*said the second, with a thin voice*) You have already spoken incorrectly. How could it be she? She just came to keep me company. She is the *fraülein*, Miss Bilham. I am Mrs Muñagorri.]

Parodi has no gift for simple everyday abductions. He is only infallible where empirical acuteness is not necessary. Even to decipher very pragmatic riddles, the only information he needs is about discourses, not about facts.

This attitude fits Borges's theoretical positions concerning detection: the Borgesian detective is all but a 'Zadig'. Borges considers Conan Doyle a 'writer of secondary importance' (Borges 1979: 849) because of the privilege given by Holmes to the analysis of facts (ash traces, tracks) at the expense of pure speculation. As suggested by the title of a book by John T. Irwin, what Borges looks for is, indeed, a 'Mystery to a Solution', and not the contrary.

These two exceptions regarding the canonical Peircian abduction can find their explanation in the original way Borges assumes the characteristics of the 'primary abduction'. Before considering this originality, let us remember two important statements expressed by Umberto Eco. The first is 'primary abduction' in general: 'I think that the general mechanism of abduction can be made clear only if we assume that we deal with universes as if they were texts, and with texts as if they were universes' (Eco 1983: 205). The first part of this statement (universes→books) ultimately quotes Galilei (1956: 6).⁴ The second (books→universes), quotes Borges.

Now a second statement by Eco (1985: 16) that contains a hypothesis about Borges's mechanism of conjecturing: 'I will call this mechanism ... the mechanism of conjecture in a sick Spinozian universe'. Borges's universe is 'Spinozian', because it postulates that the order and the connection of things are identical to the order and connection of ideas. But it is 'sick' because its rules are not the rules of positive science, but the paradoxical ones of fiction. Perhaps the qualifier 'literal' instead of 'sick' would be a more adequate option, as we will see.

My purpose is now to revisit these assessments in the light of the paradigm of maps, common to Peirce and Borges. The personal reading Borges does of this paradigm leads to his heterodox conception of abduction.

Borges and Peirce, on mapping

Josiah Royce, the common reference for Borges's and Peirce's theory of maps, has a very similar position to the one Eco credits Spinoza concerning the roots and guarantees of abduction: the unity of human thought with the external world. His way of approaching this problem involves a special meaning relating to the notion of *representation*: a meaning that

Peirce has also often considered, with reference to the logical treatment of the German term *Abbildung*, 'used in 1845 by Gauss for what is called in English a map-projection' (CP 3.609).

In his essay 'Magias parciales del Quijote', Borges quotes a fragment of Royce's *The World and the Individual*, to which Peirce has also devoted a long review article:

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. ... This representation would agree in contour with the real England, but at a place within this map of England, there would appear, upon a smaller scale, a new representation of the contour of England. This representation, which would repeat in the outer portions the details of the former, but upon a smaller space, would be seen to contain yet another England and this another, and so on without limit. (Royce 1959, 504–505, cf. Borges 1989/96: 2.47)

Borges (1989/96: 2.47) quotes very roughly this text, gives the exact references, and then comments upon it:

Why does it trouble us, that the map is included in the map, and the Arabian nights in the book *The Arabian Nights*? Why does it trouble us that Don Quixote is a reader of the *Quixote* and Hamlet a spectator of *Hamlet*? I think I have found the reason: such inversions suggest that if the characters of a work of fiction can be readers or spectators, we, their readers or spectators, can be fictional.⁵ (1989/96: 2.47)

Peirce, for his part, also comments this text, paraphrasing it in a quite Borgesian way. What he discusses indeed is something like the prolegomena to the possibility of the Aleph — a point in which all the maps of a series converge:

Imagine that upon the soil of England, there lies somewhere a perfect map of England, showing every detail, however small. Upon this map, then, will be shown that very ground where the map lies, with the map itself in all its minutest details. There will be a part fully representing its whole, just as the idea is supposed to represent the entire life. On that map will be shown the map itself, and the map of the map will again show a map of itself, and so on endlessly. But each of these successive maps lies well inside the one which it immediately represents. Unless, therefore, there is a hole in the map within which no point represents a point otherwise unrepresented, this series of maps must all converge to a single point which represents itself throughout all the maps of the series. In the case of the idea, that point would be the self-consciousness of the idea. (CP 8.122)

These texts invite us to consider the question of the harmony between world and mind in terms of map projection (*abbildung*). As a *representamen*, a map is a bidimensional diagram. As a diagram, it can only represent the contours of a land. As having only two dimensions, it needs a third dimension to be considered (an *Interpretant*). This is Peirce's canonical theory. But Borges's style of thinking implies a systematic tendency to a *reductio ad impossibile*⁶ of any standard theory. In this case, as a diagram, a map can, by means of a progressive filling up, tend to be continuous (i.e., to become an 'image' instead of a 'diagram'). On the other hand, as a bidimensional figure, a map can blow up until it entirely covers the land it represents, thus abolishing the possibility of any *Interpretant*. These two conditions allow other ways of conceiving the presumption of representation that underlies every theory of abduction.

Let us survey, with Borges and Peirce, some of the possible ways of thinking about representation provided by map theory. First of all, a map is not only an abstract diagram, it is also an object in the world, which can be used, for instance, to hide something on the wall. Peirce, introducing his abductive theory of remembering, imagines precisely a map covering one-quarter of one of Rafael's most famous frescos⁷ (*CP* 7.36) and Royce says: 'Our map and England, taken as mere physical existence, would indeed belong to the realm of "bare external conjunctions"' (1959: 507).

Taking the relationship between maps and territories in a more abstract way, as the relation between representation and world, Borges, too, considers this possibility of a map's intromission in the land by proposing in his short story 'La muerte y la brújula' a 'real' interference of the interpretation into the progress of facts. Since abducting is also a fact, it interferes with the facts it is supposed to explain. At the end of the story, the murderer says to the detective: 'I knew you would conjecture that the Hasidim had sacrificed the rabbi; I set myself to justifying this conjecture'⁸ (1989/96: 2.507).

Beside this possibility of interaction there is the more curious possibility of a simple substitution. The diagram can become more and more precise and its dimensions can grow until it covers the territory. The condition is that the map must lie upon the very territory it is supposed to represent, which is always *mutatis mutandis* — the case of the 'primary abduction'. We all know the famous Borges's forgery 'Del rigor de la ciencia':

En aquel Imperio, el Arte de la Cartografía logró tal Perfección que el mapa de una sola Provincia ocupaba toda una Ciudad, y el mapa del Imperio, toda una

Provincia. Con el tiempo, esos Mapas Desmesurados no satisficieron y los Colegios de Cartógrafos levantaron un Mapa del Imperio, que tenía el tamaño del Imperio y coincidía puntualmente con él. Menos Adictas al Estudio de la Cartografía, las Generaciones Sigüientes entendieron que ese dilatado Mapa era Inútil y no sin Impiedad lo entregaron a las Inclemencias del Sol y de los Inviernos. En los desiertos del Oeste perduran despedazadas Ruinas del Mapa, habitadas por Animales y por Mendigos; en todo el País no hay otra reliquia de las Disciplinas Geográficas. (1989/96: 2.225)

[In that Empire, the Art of Cartography attained such Perfection that the map of a single Province occupied the entirety of a City, and the map of the Empire, the entirety of a Province. In Time, those Unconscionable Maps were no longer satisfactory, and the Cartographers' Guilds struck a Map of the Empire whose size was that of the Empire and which coincided with it point for point. Less Attentive to the Study of Cartography, succeeding Generations considered that such a vast map was Useless, and, not without Irreverence, they abandoned it to the Inclemencies of Sun and Winter. In the western Deserts, there are still today Tattered Ruins of the Map, Inhabited by Animals and Beggars; in the whole Land, no other Relic is left of the Disciplines of Geography.]

In this case, the map finishes up by representing itself. Peirce says:

If a map of the entire globe was made on a sufficiently large scale, and out of doors, the map itself would be shown upon the map; and upon that image would be seen the map of the map; and so on, indefinitely. If the map were to cover the entire globe, it would be an image of nothing but itself, where each point would be imaged by some other point, itself imaged by a third, etc. (CP 3.609)

This means that if the map entirely covers the territory and if it exactly represents each object in it, it becomes not only a self-representative (solipsist) representation, but also an infinite representation of itself. Consequently, it is possible and justifiable to conceive a map without territory, in which each enclosed map represents the next enclosing map in a universe in which there is nothing but maps...

Imagine that upon the soil of a country, that has a single boundary line ... there lies a map of that same country. This map may distort the different provinces of the country to any extent. But I shall suppose that it represents every part of the country that has a single boundary, by a part of the map that has a single boundary, that every part is represented as bounded by such parts as it really is bounded by, that every point of the country is represented by a single point of the map, and that every point of the map represents a single point in the country. Let us further suppose that this map is infinitely minute in its representation so that there is no speck on any grain of sand in the country that could not be seen represented upon the map if we were to examine it under a sufficiently high magnifying power. Since, then, everything on the soil of the country is shown on

the map, and since the map lies on the soil of the country, the map itself will be portrayed in the map, and in this map of the map everything on the soil of the country can be discerned, including the map itself with the map of the map within its boundary. Thus there will be within the map, a map of the map, and within that, a map of the map of the map, and so on ad infinitum. These maps being each within the preceding ones of the series, there will be a point contained in all of them, and this will be the map of itself. Each map which directly or indirectly represents the country is itself mapped in the next; i.e., in the next (it) is represented to be a map of the country. In other words each map is interpreted as such in the next. We may therefore say that each is a representation of the country to the next map. ... (CP 5.71)

We can say that the Borgesian universe is made of such a presumption. What is supposed to be 'the real' is only a 'dream' (fiction, representation) that encloses another dream. There is nothing but dreams, and the notion of reality is only a question of 'relative position': every dream is a dream for its container dream, and the real world for its contained dream, like every map is a map for the container map, and a territory for the contained map. The orientation of the arrows is still valid, but it does not indicate two different realms.

The dreamer in Borges's 'Las ruinas circulares' discovers this system of sliding representations at the end of his adventure: 'With relief, with humiliation, with terror, he understood that he, too, was but appearance, that someone else was dreaming him'⁹ (1989: 1.45).

In the traditional structure of representation (Mind→Reality) there is, of course, the possibility of enlarging the series in both directions. For theology, for instance, reality is, in its turn, to be referred to the Divine Mind (Reality→Divine Mind). For the theory of creative fiction, the Mind can create a new Reality (Fictional Reality→Mind). But in all circumstances, Mind and Reality are reciprocally extrinsic, even if some 'rational belief' urges us to postulate some harmony between them. For Borges, on the contrary, there is no harmony, but rather something like a reverse emanation between representing and represented. And this is perhaps the moment to reconsider his 'Spinozism'.

It can be said that the philosophy of Spinoza results from a cabalistic *abductio ad impossibile* of Aristotelian theory of substance (cf. *Ethics* 1.15 in reference to Aristotle's *Physics* 3.5). If it is essential to an infinite substance not to allow any limitation, the consequence is that it cannot be limited by anything else, and, hence, that there is nothing but this substance. The rest of beings can thus only be conceived as infinite attributes (manifestations) of this infinite Substance. Spinoza himself had considered the possibility of the paradoxical condition of a map containing a map. But it is precisely because this presumption leads to the

conclusion of 'infinite subsets', which he reckoned absurd, that he refused the existence of more than one substance (Spinoza 1925). On the contrary, what Peirce, Royce, and Borges are presuming is the acceptance of Cantor's theory of transfinite numbers, which, forecasted as 'absurd' by Spinoza, allows an *abductio ad impossibile* of his own conception of a unique substance: if we are only appearances of God, and if every appearance of God shares His substance, God himself can be considered, in turn, as merely apparent as we are. In consequence, to say that there is nothing but the divine Substance is the same as saying that there is nothing but appearances.

Such is the hesitation that concludes the second sonnet of Borges's 'Chess':

God moves the player, who moves the pawn.
And behind God, which god begins the round
Of dust and time and dream and agonies?¹⁰ (1989/96: 2.191)

And the God's melancholic confession to Shakespeare, in 'Everything and Nothing':

I do not exist, either. I dreamed the world the way you dreamed your work, my Shakespeare: one of the forms of my dream was you, who, like me, are many and no one.¹¹ (1989/96: 2.182)

This *progressio ad infinitum* is also *abductio ad impossibile*: if every dreamer is dreamed by another dreamer, to say that we are all dreamed dreamers is the same as saying there is no dreamer at all. Borges bases on the special condition of Spanish 'impersonal verbs' the following suggestion:

the concept of life as a long dream, perhaps without dreamer, a dream that dreams itself, a dream without subject; the same way one says 'it snows' ('nieva'), 'it rains' ('llueve'), it should be possible to say 'it thinks', or 'it imagines', or 'it feels' without necessarily having a subject behind these verbs.¹² (Borges and Ferrari 1992: 224)

This 'literal' Spinozism, which is not necessarily supposed to be sick, allows Borges to draw new inferences concerning primary abduction, one of them being the abolition of the boundaries between universes and books. The universe is to be read, as a book, and the conditions of its understanding are the conditions of text analysis. This is why the Borgesian detective, to practice his art of guessing, needs nothing but discourse. This is also why, in Borges's conjectures, the search for the 'best

hypothesis' is led by textual principles. What is 'possible' is less important than what is 'interesting':

'It is possible, but not interesting', Lönnrot answered. 'You will reply that reality has not the slightest need to be interesting. And I will reply in turn that reality may avoid the obligation to be interesting, but that hypothesis may not.'¹³ (1989/96: 1.500)

The truth of a hypothesis does not depend on facts:

Many conjectures may be made to explain Droctulft's act; mine is the most economical; if it is not true as a fact, it will be true as a symbol.¹⁴ (1989/96: 1.558)

Finally, reality itself (i.e., the universe) is as conjectural as our hypothesis:

my eyes had seen that conjectural and secret object whose name men usurp, but which no man gazed on: the inconceivable universe.¹⁵ (1989/96: 1.626)

Now, when the map takes the place of the land for another map, a new paradox arises, which was considered by both Peirce and Royce. Peirce says:

On a map of an island laid down upon the soil of that island there must, under all ordinary circumstances, be some position, some point, marked or not, that represents *qua* place on the map, the very same point *qua* place on the island. (CP 2.230)

This means that in the infinite specular progression of maps into maps, there must be some point that represents its own position in the land, which is at the same time its position on the map. And that presupposes the abolition of the representation:

and that point that is in all the maps is in itself the representation of nothing but itself and to nothing but itself. It is therefore the precise analogue of pure self-consciousness. As such it is self-sufficient. It is saved from being insufficient, that is as no representation at all, by the circumstance that it is not all-sufficient, that is, is not a complete representation but is only a point upon a continuous map. (CP 5.71)

But since a map upon a map is pure fiction, we are gradually led to conclude that the only self-sufficient reality is the fragile and conjectural one of fiction of fiction, 'a point upon a continuous map'.

This is the meaning of the invariable perplexity Borges assumes to deal with conjectures: reality itself is, for him, conjectural and continuous,

hence human reason has to work not in order to reach rest in a final solution, but to cover the distance between the terms of a hesitation: 'a revelation that never occurs'.

But on the other hand, this presumption justifies the ontological and epistemological priority granted by Borges to the enclosed representation over the enclosing one. For instance, in the short story 'El otro', in which between two versions of the same person one must be declared true at the expense of the other, the winner is the one who can demonstrate that he has been dreamed by the other. Moreover, in an essay about Dante, Borges paradoxically confers the privilege of the correct knowledge to one of the fictional characters of the *Divine Comedy*.

We know Dante in a more intimate way than his contemporaries did. I could say that we know him as Virgil did, who was one of his dreams. We certainly know him better than Beatrice Portinari could have known him, certainly better than anybody else.¹⁶ (1989/96: 3.212)

We can now come back to the implications of this analysis to the question of primary abduction. It can be concluded that there can be many types of primary abduction, each of which determines the legitimacy of the conjectures. The question is, hence, to know or to decide, each time, which is the universe presumed to ground human reasonability.

Borges's universe is a 'pluriverse'¹⁷ that, as a map lying upon its territory, tends to have only two dimensions, but performs an infinite set of enclosed representations. In this map, privilege is always given to the enclosed element. In this map, by hypothesis, there is no place for an external object. It is a sober universe, in which a desert, or a simple line, can become an infinite labyrinth. It is an endless and fictitious universe that does not allow for any final realistic interpretation. It is a universe that is like a book that is like a universe, which only asks to be read. Its rationality is governed by the changeable and indefinite laws of bewilderment and by the syntax of perplexity. One can ask, at the end, whether, in this universe, there is still place for some interpreter, whether, for this map, some traveller has been planned. The answer seems to be suggested by the magic serenity of this melancholic parable:

A man sets out to draw the world. As the years go by, he peoples a space with images of provinces, kingdoms, mountains, bays, ships, islands, fishes, rooms, instruments, stars, horses and persons. A short time before he dies, he discovers that this patient labyrinth of lines traces the outline of his own face.¹⁸ (Borges 1989/96: 2.232)

Notes

1. 'Fossils are found, say those like the remains of fishes, but far in the interior of the country. To explain the phenomenon, we suppose the sea once washed over this land' (CP 2.625).
2. ['Leí, días pasados, que el hombre que ordenó la edificación de la casi infinita muralla china fue aquel primer emperador, Shih Huang Ti, que asimismo dispuso que se quemaran todos los libros anteriores a él. Que las dos vastas operaciones — las quinientas a seiscientas leguas de piedra opuestas a los bárbaros, la rigurosa abolición de la historia, es decir del pasado — procedieran de una persona y fueran de algún modo sus atributos, inexplicablemente me satisfizo y, a la vez, me inquietó. Indagar las razones de esa emoción es el fin de esta nota'.] (Borges 1989/96: 2.11)
3. 'Dunraven, versado en obras policiales, pensó que la solución del misterio siempre es inferior al misterio. El misterio participa de lo sobrenatural y aun de lo divino; la solución, del juego de manos'.
4. La filosofia è scritta in questo grandissimo libro che continuamente ci sta aperto innanzi a gli occhi (io dico l'universo), ma non si può intendere se prima non s'impara a intendere la lingua, e conoscer i caratteri, ne' quali è scritto. Egli è scritto in lingua matematica, e i caratteri son triangoli, cerchi, ed altre figure geometriche, senza i quali mezzi è impossibile a intenderne umanamente parola; senza questi è un aggirarsi vanamente per un oscuro laberinto' (Galilei 1956: 119).
5. '¿Por qué nos inquieta que el mapa esté incluido en el mapa y las mil y una noches en el libro de *Las Mil y Una Noches*? ¿Por qué nos inquieta que Don Quijote sea lector del *Quijote* y Hamlet, espectador de *Hamlet*? Creo haber dado con la causa: tales inversiones sugieren que si los caracteres de una ficción pueden ser lectores o espectadores, nosotros, sus lectores o espectadores, podemos ser ficticios' (Borges 1989/96: 2.47).
6. Curiously, the Aristotelian formula is not *reductio*, but *abductio ad impossibile* (apagogé eis tò adynaton). What shows that, despite the forced derivation Peirce makes of his abduction from Aristotle's *apagogé*, Borges, who didn't know Peirce, remain always near the original field where all derived assumptions of the term 'abduction' can exist together.
7. 'For example, let a person entering a large room for the first time, see upon a wall projecting from behind a large map that has been pinned up there, three-quarters of an admirably executed copy in fresco of one of Rafael's most familiar cartoons. In this instance the explanation flashes so naturally upon the mind and is so fully accepted, that the spectator quite forgets how surprising those facts are which alone are presented to his view; namely, that so exquisite a reproduction of one of Rafael's grandest compositions should omit one-quarter of it. He guesses that that quarter is there, though hidden by the map; and six months later he will, maybe, be ready to swear that he saw the whole' (CP 7.36).
8. 'Comprendí que usted conjeturaba que los Hasidim habían sacrificado al rabino; me dediqué a justificar esa conjetura' (Borges 1989/96: 2.507).
9. 'Con alivio, con humillación, con terror, comprendió que él también era una apariencia, que otro estaba soñándolo' (Borges 1989/96: 1.455).
10. Dios mueve al jugador, y éste, la pieza /¿ Qué dios detrás de Dios la trama empieza / de polvo y tiempo y sueño y agonías? (Borges 1989/96: 2.191).
11. 'Yo tampoco soy; yo soñé el mundo como tú soñaste tu obra, mi Shakespeare, y entre las formas de mi sueño estás tú, que como yo eres muchos y nadie' (Borges 1989/96: 2.182).

12. 'el concepto de la vida como un largo sueño, quizá sin soñador ..., un sueño que se sueña a sí mismo, un sueño sin sujeto; de igual modo que se dice nieva, llueve, podría decirse se piensa, o se imagina, o se siente, sin que necesariamente haya un sujeto detrás de esos verbos' (Borges and Ferrari 1992: 224).
13. '- Posible pero no interesante -respondió Lönnrot-. Usted replicará que la realidad no tiene la menor obligación de ser interesante. Yo le replicaré que la realidad puede prescindir de esa obligación, pero no las hipótesis' (Borges 1989/96: 1.500).
14. 'Muchas conjeturas cabe aplicar al acto de Droctultf; la mía es la más económica; si no es verdadera como hecho, lo será como símbolo' (Borges 1989/96: 1.558).
15. 'mis ojos habían visto ese objeto secreto y conjetural, cuyo nombre usurpan los hombres, pero que ningún hombre ha mirado: el inconcebible universo' (Borges 1989/96: 1.626).
16. 'A Dante lo conocemos de un modo más íntimo que sus contemporáneos. Casi diría que lo conocemos como lo conoció Virgilio, que fue un sueño suyo. Sin duda, más de lo que lo pudo conocer Beatriz Portinari; sin duda, más que nadie' (Borges 1989/96: 3.212).
17. This term, ascribed to William James, is used by Borges himself in his commentary on 'The Congress' (Borges 1985: 75).
18. 'Un hombre se propone la tarea de dibujar el mundo. A lo largo de los años puebla un espacio con imágenes de provincias, de reinos, de montañas, de bahías, de naves, de islas, de peces, de habitaciones, de instrumentos, de astros, de caballos y de personas. Poco antes de morir, descubre que este paciente laberinto de líneas traza la imagen de su cara' (Borges 1989/96: 2.232).

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