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## Visualizing Borges: Figures of Interpretation

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Visualizing Borges: Figures of Interpretation

Kempton John Cox

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of

Master of Arts

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## ABSTRACT

### Visualizing Borges: Figures of Interpretation

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In this work I explore the geometry found both in the narrative structures and the internal shapes proposed in Jorge Luis Borges' short stories and seek to arrive at new interpretations of those works by mapping out—in graphical form—the shapes found therein. I move from basic two-dimensional shapes (lines, triangles, quadrilaterals) to those involving the element of temporality and atemporality (circles, interruptive loops, chiasmus) to shapes dealing with repetition—both geometric and temporal—and eternity (labyrinths, fractals, and Alephs). In each case and for each short story analyzed, either an existent interpretation is favored or a new interpretation is set forth.

Keywords: Jorge Luis Borges, geometry, representation, triangles, circles, labyrinths, fractals

## ACKNOWLEDGEMENTS

I would commit the sin of ingratitude if I didn't mention my unpayable debt to five outstanding professors: Dr. Willis Fails—my constant supporter—who was not only the first to inspire me toward any serious study of the Spanish language, but also to linguistics in general; Dr. L. Howard Quackenbush—a brilliant teacher—who in his last few years before his retirement converted me to a love of literature; Dr. David Laraway—my mentor, advisor, and friend—who encouraged me to apply for an advanced degree in Hispanic Literatures and then helped me to get there, and who has been supportive at every step of my development; Dr. Erik Larson—an invaluable reader—whose laid-back demeanor and approachability made him an indispensable committee member and mentor; and Dr. James Krause—smart man and proofreader-in-chief of this thesis—whose sharp brain and speedy wit made me laugh harder and more authentically than any other professor I know.

My committee was truly the dream team.

But as impressive as these professors are, they pale in comparison to the inimitable Bonnie Cox, my supporter, confidant, best friend, and wife. In sacrifice and loyalty, she is unimpeachable. In goodness, she is a “force to be reckoned with.” My kids, Isom and Addie, are old enough to be vaguely aware that I go to campus every day. Yet, without knowing it, they are sacrificing much so that Daddy can continue his education.

My parents have given me everything, most importantly my faith, but also my love for learning.

I must finally acknowledge the provident hand of God. I have turned to Him in prayer on countless occasions, seeking help not only with this thesis, but in all important matters. He has proven his existence and mercy at every step. He has been very patient with me.

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# Visualizing Borges: Figures of Interpretation

## Introduction

There is nothing around you that can't be reduced to the basic shapes you learned in your middle-school geometry class, and chances are, you had already known many of those by name from the time you were a toddler. The buildings you walk in and sleep in, the clothes you wear, and even the air you breathe consist of molecules, patterns, and architecture that are totally reliant upon the existence of structure. Life itself could not be sustained without the shapes and figures that form its foundation. Yet, for some reason, we don't often apply those shapes to literature.

If I didn't love ideas, I wouldn't be studying literature. One of the most fascinating ideas I've encountered yet is the idea that mapping out the geometric constructs in Borges' universe (multiverse?) can result in our seeing our own universe differently. My aim in this thesis is to identify, map out, and analyze the geometric shapes that are created by the narrative plotlines and internal structures in Borges' short stories. The goal is that doing so will provide a useful tool (or lens) by which we can arrive at a favored literary interpretation of his works.<sup>1</sup> The justification for this research comes from Donald Shaw's statement in his book entitled *Borges' Narrative Strategy*:

[I]nterpretation is one thing and analysis of technique is another. Close and detailed examination of his narrative strategy is the neglected aspect of Borges' fiction [...]. As we shall try to illustrate in a moment, what Borges may be saying

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<sup>1</sup> Perhaps it doesn't need mentioning, but there is obvious irony in the fact that we seek a better understanding of Borges' works through graphic representation, a tool which he could not have used from about age 55 onward. As he went more and more blind (and eventually lost all of his sight), his works turned more and more oral and structurally different; in fact, he turned to poetry in his later years, because verse is easier to remember in the mind than is narrative.

and the particular method he adopts in order to say it can sometimes be closely related. Indeed, a close examination of the patterning of a given story may allow us to attach more weight to one interpretation of it than to another. (3)

Shaw suggests that a study based on the narrative structures of Borges' works may help us to also illuminate their interpretation, and we ought to agree with that opinion, since "[m]any of Borges' stories are modelled on, or contain, puzzles or riddles; but they are puzzles or riddles to which there are no simple answers" (Shaw 3). Because there can be so many interpretations of any one of Borges' short stories, mapping out the narrative *shape* may help us come to a conclusion of which interpretation we can and ought to favor.

While many critics have written and published on the topic of Borges' narrative style, only in a few cases have those critics actually chosen to map out the geometric shape of particular narratives ("La muerte y la brújula" and "La forma de la espada" have been analyzed in graphic, visual representation on more than one occasion).<sup>2</sup> Because many have spoken about what I propose to do and yet have not actually done it, I intend to expand the critical conversation about Borges' narrative strategy by analyzing several of his short stories in an explicitly visual way.

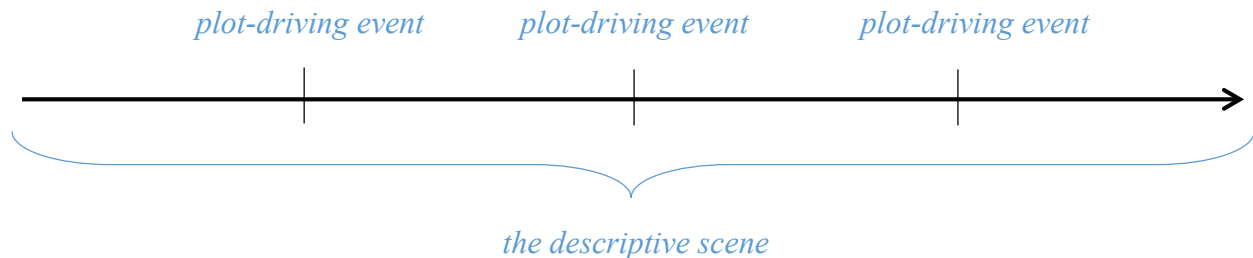
In a traditional short story, the action is nearly always narrated in the past tense and in a direct and chronological fashion, with the events and occurrences of the narration superimposed on a descriptive and informational background. In the Spanish language, the scene (background)

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<sup>2</sup> To view some analyses of these two works, the reader may wish to consult chapters 4 and 39 of John Irwin's book, *The Mystery to a Solution*; Slusser and Chatelain's article (particularly the first and fifth sections) "Spacetime Geometries"; Weltt's article "La forma del relato borgiano"; Sieber's "Time, Simultaneity, and the Fantastic"; McGrady's "Prefiguration, Narrative Transgression and Eternal Return"; and Carroll's "Borges and Bruno." All of these are fully cited in my bibliography.



is described using the *imperfect* aspect of the past tense, while the acts and events which push the action forward are narrated in the *preterit* aspect of the past tense, like this:



Notice that both the *imperfect* scene and the *preterit* actions are placed in chronological time, represented (at least in the West) by a line moving progressively from left to right.<sup>3</sup> Furthermore, the characters in a traditional story are presented similarly; that is, they appear on the scene in the order in which they are needed in order to perform their function of pushing the plot (action) forward. Borges' plotlines, however, tend to create geometrical patterns. The introduction of the characters to the scene and the relationship that they share, as well as the *preterit* actions themselves, rarely fit within the framework of a traditional, chronological short story. Borges has a way of using what appear to be very typical short story patterns while at the same time building on them in order to explore new metaphysical possibilities.

In this thesis, several short stories will be analyzed through an examination of narrative and internal geometry, and those geometric forms will perhaps provide for us the key to a better interpretation of the work than could be achieved without it. Additionally, I will mention several of the difficulties that arise when we try to map out Borges' plots and ideas. I intend to analyze his short stories as categorized into three different chapters:

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<sup>3</sup> The direction is arbitrary. There are places in the Middle East where the representation of progressive time in the mind of the community goes from right to left. In this thesis, however, it will be represented in the occidental form.

## **CHAPTER ONE**

The first chapter will address those stories which, when mapped out, create basic, two-dimensional geometric forms. Here I will address shapes such as the closed triangle (“La intrusa”); the open triangle (“El Zahir,” “Funes el memorioso”); the interplay of the triangle and the quadrilateral (“La muerte y la brújula”); and a conceptual treatment of the reversal of roles (“El encuentro,” “In Memoriam J.F.K.,” and “La memoria de Shakespeare”). We’ll end with an analysis of an internal structure found in “El milagro secreto.”

## **CHAPTER TWO**

The second chapter will add the element of temporality to the geometric forms. Here, I will address three-dimensional forms; the three dimensions can either be length, height, and depth or length, height, and time. The infinite comes into play in this chapter in the form of loops, as well as the complications that arise with trying to visually map out such ideas. We’ll take a look at some writings including “El otro,” “Veinticinco de Agosto, 1983,” “Poema conjetural,” “El sur,” and again “El milagro secreto.”

## **CHAPTER THREE**

The third and final chapter will address those stories whose narratives represent the infinite not just in a simple loop, but rather in four-dimensional, repetitive ways (the four dimensions being length, height, depth, and temporality). Here, I will present the idea of fractals and suggest that a knowledge of them can illuminate the interpretation of stories like “Las ruinas circulares,” “El jardín de senderos que se bifurcan,” and “El inmortal,” among others. We will conclude the thesis with a brief word on “El Aleph.”

## Some Final Notes before We Begin

There are just a couple of things to mention before we take a look at the literature itself so that you know what you can and cannot expect from this thesis.

The first is that it is difficult to place Borges into any literary movement. For that reason, I have preferred to give a structural, rather than a historical, analysis to the works we'll see. Likewise, I much prefer to look directly at the ideas proposed in the literature itself rather than look at the literature through the lens of another's theories. I will perhaps mention, on occasion, a philosophy or critical theory that might illuminate one interpretive perspective, but it will not be the focus of my thesis. While I recognize their value, my reading will be agnostic with regard to any particular literary-theoretical or philosophical approaches.

The second and final thing to mention here is that I have enjoyed the process. In fact, one of my hopes is that some reader may actually take pleasure in the ideas set forth ahead. I can't help but think that Borges feels a little disappointed when pedants spend days or weeks of their lives analyzing his work on a very cerebral level, and who in so doing, forget that stories and ideas are meant to be enjoyed first and analyzed second.<sup>4</sup> And blessed is the man who can do both simultaneously (which is what I'll attempt to do here).

And with that, we can begin.

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<sup>4</sup> In an interview for the documentary "Profile of a Writer: Jorge Luis Borges," the author himself makes the following statement: "If you're bored, then lay the book aside. Don't be taken in by the writer being famous or being modern or being ancient. Read what you enjoy. And only read what you enjoy. Because if not, the whole thing is meaningless" (*Profile* 1983). He adhered to a policy of hedonistic reading, and he spoke of that policy often.

## **Chapter I. Two Dimensions**

The goal of this first chapter, much like the goal of this entire thesis, will not be to delve into the world of critical theory or even philosophy, though some mention of these things may add to our discussion at certain points. Rather, the goal here is to analyze some of the ideas and narrative structures found in some of Borges' short stories graphically—to map out the idea in a way that can be seen—and then to see if adding that layer of symbolic representation can tell us anything more about how we might go about interpreting the story.

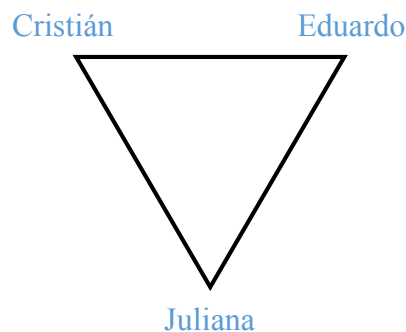
In this chapter, we'll look at the narrative structure of several short stories, always through that interpretive lens proposed in the introduction by Donald Shaw, and always sticking to two dimensions (being length and height). It seems appropriate to begin with the most simple examples and then work our way up, eventually losing our grasp on concrete ideas by the end of the thesis, or at least achieving a point where our own imaginative limitations impede us from defining those ideas with clarity. Luckily, this first chapter won't be too out of reach. We'll start with a look at "La intrusa" and the closed triangle form, after which we'll open the triangle and discuss "El Zahir" and "Funes el memorioso." After a brief mention of quadrilaterals, we'll start involving motion with three mostly unanalyzed stories and then end by easing our way into three dimensions with a look at just one internal aspect of "El milagro secreto."

We'll start with a most unhappy narrative reduction—femicide.

### **The Closed Triangle**

One of the simplest forms (I hesitate to use that adjective in speaking of Borges) is the closed triangle. In his short story entitled "La intrusa," there exists a triangular relationship

among the three main characters: Eduardo (the younger of the Nelson brothers), Cristián (the elder) and Juliana (the woman shared between the two). The three coexist and intertwine in a ménage à trois, and it is only fitting to begin our chapter with a love triangle, as we will also be ending it that way (that symmetry is for you, Borges<sup>5</sup>). The brothers in the story enjoy a close relationship with each other, but each also shares intimacy with Juliana. We could think of their relationship like this:



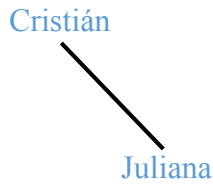
It is an equilateral triangle, because the three are living in a love trio in which each character holds an equal place of importance, at least at first. After a time, tension arises between the brothers as a result of Juliana's being present in the triangle. That tension exists because it's a trio.<sup>6</sup> To get rid of the tension, then, any one of the three points (characters) could be eliminated,

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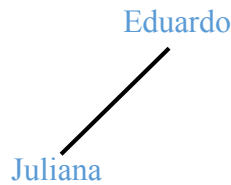
<sup>5</sup> It's no secret that Borges loved symmetry, a point we'll look at closely when we analyze "El sur." Surprisingly, however, he at times also intentionally chose asymmetry, such as in "La escritura del dios," in which he refers to the prison's being "un hemisferio casi perfecto." It would be interesting to develop a theory of imperfection and asymmetry in Borges' work.

<sup>6</sup> This introduces a bit of irony. Typically, we might think of a trio as being more structurally sound than anything with two points; a three-legged stool or a tripod certainly holds up better than a bicycle, and in engineering, the triangle is a very reliable form. Yet there is one way in which it is less stable: having more sides creates more chance for failure, because if any one side fails, the structure fails. Consider it this way: a simple bar (structural line) would fail only if 100% of the structure failed (if the bar broke), but something which relies on the structural integrity of a triangle would fail if just 33% of the structure failed (that is, if one leg gave out). If my system relies on 900 pieces to hold up, then I have greatly exposed myself to the possibility that any 1 of those 900 might fail, causing a failure of the system. The more complex the form, the less stable; the simpler the form, the less that can go wrong. Evidence of this is that while any city has dozens of auto mechanics, bike repair shops are almost non-existent (a car relies on too many elements to run). A love triangle is unstable for the same reason that cartels (multi-member

and the problem would be solved. Cristián and Juliana could have eliminated Eduardo, converting the triangle into a simple and stable line:



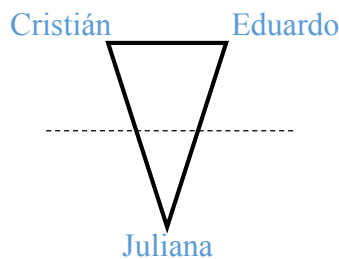
Or Eduardo and Juliana could have eliminated Cristián with the same result:



But in the end, the two brothers decide to eliminate Juliana, at first attempting to prostitute her, and then by murdering her.



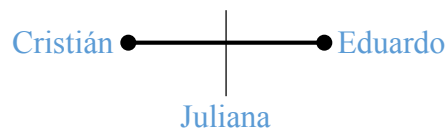
We see that in reality, the triangle was not equilateral, but rather an isosceles in which the *intrusa* wasn't as close to the respective brothers as they were to each other. Their relationship was stronger and enjoyed a favored position compared to the relationship that each one shared with Juliana.



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monopolies) often self-destruct: one member inevitably undercuts his co-conspirators to attract more buyers with lower prices, and the cartel falls apart. Three CEOs conspiring to keep prices fixed will never be as stable as a single CEO running a monopoly. As Ben Franklin often included in his *Poor Richard's Almanack*: "Three can keep a secret if two of them are dead."

At the end of the short story, we see the reduction of the geometric form from the closed triangle (ménage à trois) to a type of bi-polar line which is interrupted in the middle by the third point, Juliana. (Notice that this interrupted line is really just the triangle when viewed from the bottom up. A change in perspective changes the form—an idea which will come up again at the end of this chapter.)



In this way, she truly is an *intrusa*. She's not one-third of a love triangle, as we assume at the beginning of the story, but rather the interruption and the rupture of a previously established relationship. The key that affirms this last representation (and not the first) is the story's epigraph. The author makes reference (without quoting it) to a biblical verse: 2 Kings, i, 26. This reference made to a verse from the Catholic Bible would be 2 Samuel, i, 26 in the common Bible, and it states: "I am distressed for thee, my brother Jonathan: very pleasant hast thou been unto me: thy love to me was wonderful, passing the love of women." The fraternal relationship is exalted above the sexual one.<sup>7</sup>

The closed triangle is certainly a less interesting form, because it's really not all that Borgesian. It's too straightforward and doesn't demand much imagination.<sup>8</sup> Nonetheless, it

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<sup>7</sup> For further reading, I recommend García's structural analysis of "La intrusa," cited fully in my bibliography.

<sup>8</sup> French philosopher René Girard would disagree with me. In his first book, *Deceit, Desire and the Novel* (1961), he proposes the idea that there is no desire without a triangle. Though my approach to the literature in this thesis is not a theoretical one, it is worth knowing that Girard would likely have analyzed this story by pointing out that our triangle is not simple, and that there is more going on than we think. In what he calls the "mimetic" character of desire, he proposes that whenever we feel desire, we are not feeling that desire in our relation to the object directly, but rather through that object to a model, which is what we really desire. Perhaps Girard would suggest that either brother (Cristián or Eduardo) only felt desire for Juliana (object) because of the desires of the other brother (model).

provides a good example of the kind of graphic representation that we'll be using throughout the chapter to interpret the stories. One thing that could make a triangle more Borgesian would be to open it up and let infinity in (or out?).

## **The Open Triangle**

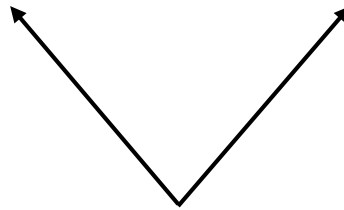
There are several studies based on “El Zahir,” one of Borges’ most well-known stories. Shlomy Mualem considers the focus of the theme from “El Zahir” to be a Schopenhauerian one, stating that “both Borges's Zahir and Schopenhauer's aesthetical objects are haphazard mundane objects that are being isolated from the endless concatenation of other objects in the world; both are perceived as timeless, constant objects: horribly unforgettable.... So it can be plausibly concluded that Borges's Zahir is in accordance with Schopenhauer's aesthetical object” (Mualem). For Mualem, it is a short story about aesthetic observation. For another critic, Patrick Dove, “El Zahir” is a commentary about the hidden meaning of life, which is to be found through metaphor and image (Dove). Another writer focuses her critique on Teodelina Villar’s character, making an argument centered on feminism (Fernández-Lamarque), and John T. Irwin takes the position that every object is all objects, and that any given thing contains an infinite repetition of itself (15-17).<sup>9</sup> Let’s take a look at a simple analysis (there’s that unlikely adjective again) of its graphic form to see, as Shaw proposed, if it favors any of these interpretations.

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<sup>9</sup> This theory touches on two incredible ideas: (1) that every man is all men (or that everything is all things, etc.), which is sometimes called the “everyman” principle, and (2) an extension of that idea, which suggests that if I am every man and everything in the universe, then really, I’m a microcosmic representation of the universe itself; that is, the universe and I exist in a sort of fractal form in which I am a mini-universe and the universe is me in a macrocosmic form. But let’s not get too excited; we won’t be taking another look at these ideas until the third chapter.



One model that Borges often chooses to use in his works is the open triangle, in which one of the borders isn't represented graphically precisely in order to provide an opening toward the infinite for its content.



This geometric shape allows us to understand an important and frequent idea in Borges' stories, especially in "El Zahir" and "Funes el memorioso." In "El Zahir," the narrator mentions a meta-fictitious work in which each nominalized word can be represented by two other metaphoric nouns, so that "...en lugar de *sangre* pone *agua de la espada*; en lugar de *oro*, *lecho de la serpiente*" ("El Zahir" 1039). We must think that the linguistic process of this metaphoric language tends toward the eternal. If *gold* can be *serpent's bed*, then *bed* can be *body's cushion*, and *serpent*, in turn, can be *treasure's hoarder*. Furthermore, each one of these nouns—cushion, body, hoarder, and treasure—will have its own dual bi-logic metaphor. (We'll revisit this idea of infinite bifurcations in the third chapter with "El jardín de senderos que se bifurcan.") The form drawn above represents what would be the genealogical family tree of any given word in this language full of kennings. Each word is infinite. And in fact, this means that any word can also be defined in terms of any other word, at least metaphorically. Each word is only a symbol—a metaphor which makes equal that which is inherently unequal.<sup>10</sup> An infinite number of antecedents runs through its blood, and for that reason, the third border of the triangle can't be drawn, even if it does exist.

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<sup>10</sup> Nietzsche covers this idea in his work called "On Truth and Lies in a Non-moral Sense" (1873), an essay which would provide an excellent interpretive lens through which to analyze the linguistic commentary found within "El Zahir."

This same geometric form can also illuminate a similar concept that appears in “Funes el memorioso”: “Nosotros, de un vistazo, percibimos tres copas en una mesa; Funes, todos los vástagos y racimos y frutos que comprende una parra” (“Funes” 882). The concept is the same (as well as its graphic representation), but instead of treating the subject of a word’s infinite genealogy, it speaks of an object’s. Any common object holds the memory of everything it contains. As Leonard Read, the great economist, has pointed out, my pencil contains not only its graphite, the wood, the tin of the ferrule, and the rubber of the eraser, but also the trees and the forest from which that wood was extracted, the tin mine, the rubber-tree plant, and the graphite mines all the way over in India. Furthermore, the knowledge of the workers that work in those mines, the painters who paint it yellow, the transportation and shipment industry with their trucks and airplanes and those who build the machines which build them are all included in and essential to the existence of my pencil (Read). And the list, once again, is eternal. One could still speak of the materials that were used to produce that machinery, their inventors, and even the food that forms the corporeal substance of those inventors.<sup>11</sup> Stretching the chain to its logical limits, we arrive at the conclusion that every word is all words, each object is all objects, and, as Borges himself stated in another of his stories, “La forma de la espada,” “cualquier hombre es todos los hombres” (“La forma” 887).

Our geometrical analysis leads us to agree with Irwin, who, in his book entitled *The Mystery to a Solution*, analyzes the “geometrical progression” of “El Zahir.” He states:

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<sup>11</sup> This idea, which I’ve covered only from the Economics perspective set forth by Read, was one that Borges loved. He read and liked William Blake, the English Romantic poet, who in his poem “Auguries of Innocence” says, “To see a World in a Grain of Sand / And a Heaven in a Wild Flower / Hold Infinity in the palm of your hand / And Eternity in an hour...” (Blake 490). The idea of seeing the world in a grain of sand is like seeing the world in a pencil, or in Borges’ “El Aleph,” like seeing the universe in an aleph about one inch in size. Borges’ desire to achieve what Blake had proposed is discussed in an interesting essay by Uri Margolin: “Mathematics and Narrative: A Narratological Perspective,” which is included in *Circles Disturbed: The Interplay of Mathematics and Narrative* (Princeton 2012). The entire book, and Chapter 14 in particular, are germane to our current endeavor.

But what is involved in this notion of a totality that contains within it a complete representation of itself, a whole made up of parts each of which is equal to the whole? Wouldn't each of these parts, in order to be a complete representation, have to contain within itself a representation of all the other parts that are contained within and equal to the whole, and wouldn't this process go on to infinity? Borges evokes this microcosmic/macrocosmic regression in tales like 'The Aleph' (1945) and 'The Zahir' (1947). (15)<sup>12</sup>

Irwin's conclusion is that this short story addresses the theme of universal representation, that is, that each thing is all things. The interpretive conclusion of this form is that I contain all men, and I am capable of committing the actions of all men.<sup>13</sup>

### **From Three Legs to Four: Interplay in "La muerte y la brújula"**

It would be inappropriate to not at least mention "La muerte y la brújula" at this point. As I stated in the introduction, I don't intend to map out this short story or even analyze it in this paper because it is one of the few short stories that has already been analyzed graphically in the critical corpus, and the point of this thesis is to add to that corpus—to do what has not been done. Perhaps the reason so much has already been said (or drawn) about this story is that it lends itself

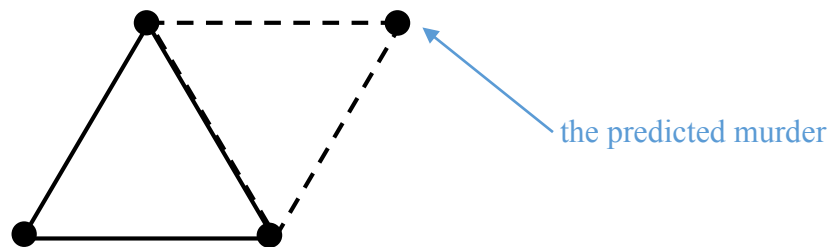
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<sup>12</sup> This same idea could be applied to Borges' "Del rigor en la ciencia" as an analysis of the possibility of representation without representing the universal whole. In the story, Borges sets forth the idea that to have a fully accurate map, the map would have to end up being the size of the represented land itself; that is, that only a universal representation is a complete symbol.

<sup>13</sup> For a fascinating treatment of this philosophy in Borges, see his short story "El inmortal," which addresses the idea that if any man is capable of doing the actions of all men (and therefore, capable of being or containing any and all men), then given enough time, he will. That is, that if granted immortality, I will eventually exhaust all possible actions and in so doing become all men. The difference between the current "I" and my potential of being every man is just a matter of time. The same will be said of cups of wine, coins, or words. We all have an eternal genealogy, and the coin in "El Zahir" can be anything.

to such an analysis. The story itself blurs the lines between writing a narrative and drawing it, and the nature of geometrical shapes is what finally clues in Lönnrot to the expectation of a fourth murder.

The interplay between the triangle/rhombus and the “articulated letters” of *the name* are key. Upon mapping out the spatio-geographic location of each of the first three crimes on a map of the city (possibly Buenos Aires), Lönnrot realizes Scharlach’s deception as he discovers the interplay between the triangle and the rhombus, which allows him to predict the fourth and final murder:



While many supposed that the triangle formed by the three crimes meant that the murderer’s twisted geometric crime-spree was complete, Lönnrot knew that *the name* has four letters, not three, and correctly predicts the location and time of the final murder. Scharlach knew that Lönnrot would discover this and had in fact trapped him into showing up for his own murder.

As I mentioned, this analysis has been done many times, and the interested reader can consult the many good articles cited in the bibliography.<sup>14</sup> The last thing I should mention here is that at the end of the story, the moribund Lönnrot and Scharlach carry on a conversation in which Lönnrot suggests that an even better labyrinth would have been a single line, a

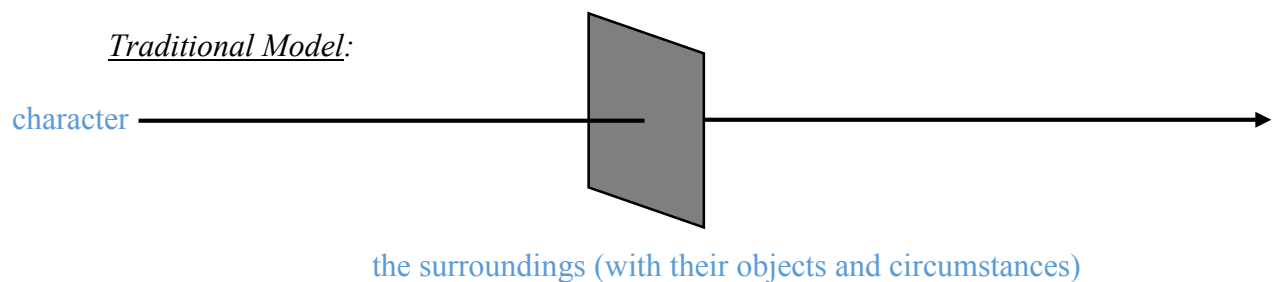
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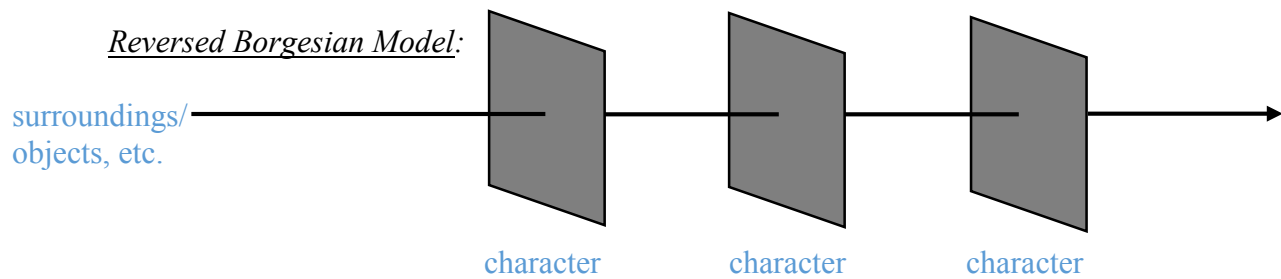
<sup>14</sup> In addition to those suggested readings I included in a footnote in the introduction (among which Robert Carroll’s “Borges and Bruno: The Geometry of Infinity in ‘La muerte y la brújula’” is the most germane), I here recommend another three analyses, which contribute to the critical conversation on the forms in this story: (1) “El círculo del cuadrado...” by Julia Cuervo Hewitt, 1993, (2) “Dibujar-proyectar en la literatura...” by Fernando Winfield Reyes, 2004, and (3) “Los arlequines y 'el mundo al revés'...” by Arturo Echavarría, 1985, especially beginning on page 613 (see “Works Cited” for complete titles and references).

simplification of form (but not of internal complexity) which we will see in “Las ruinas circulares” and which is reflective of that *reductio ad absurdum* of which Zeno was so fond. Again, I believe there’s more to changing a form than just simply changing it objectively. It also has to do with perspective and its ability to change a form subjectively, which we will address at the end of this chapter (I keep promising that, don’t I?).

### **A Form in Motion: The Reversal of Roles**

This fourth narrative form is far more interesting, because we move from stagnant shapes (like triangles and quadrilaterals) to things that move. As set forth in the introduction of this thesis, traditional narratives consist of a descriptive scene (which includes objects, circumstances, and the characters’ surroundings) and characters that move the action of the story forward. The characters pass through time and through their world. One narrative that Borges favors is the reversal of roles within the model I’ve just described. In this Borgesian version of the model, everything that before belonged to the fixed scene—the circumstances, the objects, and the realities—are now the actors which move and pass through the fixed characters, which now take on the role of the objects that form part of the surroundings. In this model, the characters do not act, but rather they are acted upon.





This model is most clearly employed in the short stories “El encuentro,” “In Memoriam J.F.K.,” and “La memoria de Shakespeare.”<sup>15</sup>

Little has been said in critical studies about “El encuentro” or “In Memoriam J.F.K.,” but several analyses have been done about “La memoria de Shakespeare.” Mike Wilson-Reginato suggests that the narrative in “La memoria de Shakespeare” illustrates a philosophy about memory, and that any given person’s memory consists of various conscious *egos* (Wilson-Reginato). María Vázquez has reached similar conclusions, comparing Shakespeare’s memory with the labyrinth which is so prevalent in others of Borges’ stories (“Borges y el laberinto”), and in another article, she analyzes the story through a more psychoanalytical or biographical lens, suggesting that the plot expresses Borges’ personal yearning to forget the many memories which weigh him down:

Borges (Soergel) que recibió tantas memorias ajenas, que fue, en la repetición de los versos y de las citas: Shakespeare, Kipling, Hugo y los cronistas anglosajones y Almafuerite y San Isidro y Banchs y cientos y cientos de escritores, se despide de ellos, se despide de sí mismo.... Cansado de años y de literaturas, de viajes, de ciudades, de desengaños... es animado por un solo deseo, que expresó de la única,

<sup>15</sup> Though the focus of this paper is short narrative and not poetry, this same concept—that of the reversed roles of the actors and those acted upon—applies well to “El puñal” and “Las cosas,” two of Borges’ poems.

de la mejor manera en que sabía decir las cosas: “Absuelto de las máscaras que he sido / seré en la muerte mi total olvido”. (*El último juego* 487)

In order to find out whether any of these interpretations is more probable than the others according to the geometry of the story’s narrative structure, let’s turn our attention to how these plots fit within the aforementioned model.

In “El encuentro,” the firearms pass through the hands of several men and through several generations:

[...] las armas, no los hombres, pelearon. Habían dormido, lado a lado, en una vitrina, hasta que las manos las despertaron [...]. Se habían buscado largamente, por los largos caminos de la provincia, y por fin se encontraron, cuando sus gauchos ya eran polvo [...]. Las cosas duran más que la gente. Quién sabe si la historia concluye aquí, quién sabe si no volverán a encontrarse. (“El encuentro” 718)

In the same way, “In Memoriam J.F.K.” proposes a fascinating idea in suggesting that the great assassinations in history didn’t occur as separate histories in which characters acted in different situations, but rather that the true actor—the bullet—passed through all of the victims. The narrator says that “esta bala es antigua” and that the same bullet has killed Juan Idiarte Borda (president of Uruguay), Lincoln, and Gustavo Adolfo of Sweden. Then, the narrator affirms that the bullet was once a different object entirely (any object, given time, is all objects, remember), “porque la transmigración pitagórica no sólo es propia de los hombres” (“In Memoriam” 345). The story continues, suggesting that “fue el cordón de seda que en el Oriente reciben los visires, fue la fusilería y las bayonetas que destrozaron a los defensores del Álamo, fue la cuchilla triangular que segó el cuello de una reina, fue los oscuros clavos que atravesaron la carne del

Redentor” (345). Additionally, it was the poison that Socrates drank. The analogy arrives at its most extreme conclusion: “fue la piedra que Caín lanzó contra Abel y será muchas cosas que hoy ni siquiera imaginamos y que podrán concluir con los hombres y con su prodigioso y frágil destino” (345). Here, things outlast people.

In the last of the three examples, “La memoria de Shakespeare,” the *actor* is more abstract. It’s not an object that passes through the characters, but rather an idea, an entire *memoria*.<sup>16</sup> The memory of Shakespeare—not the memory that the rest of us have about his existence, but rather the actual memory that he himself possessed—passes through the minds of its possessors like the weapons in “El encuentro” or the bullet that killed Kennedy in “Memoriam.” Of the critical work that I could find about these short stories, none of the interpretations seems to agree best with this geometric perspective. It’s possible that this type of narrative analysis is still just a gap in the critical corpus of these three stories.

### **Perspectives Are Key**

In closing this chapter and moving toward the next, we prepare for the transition from two dimensions to three. The segue between dimensions doesn’t require finding a portal in the wall (as it occurred in a well-known episode of the *Twilight Zone*<sup>17</sup>) or anything else quite so

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<sup>16</sup> It’s important to realize that the word *memoria* translates to “memory,” but only in one of its senses. The English “memory” can refer to a specific thought retained in our minds (“It’s one of my favorite childhood memories”), which translates in Spanish to *recuerdos*, but “memory” also refers to the capacity to remember (“Grandpa has a great memory”), which is the Spanish *memoria*. In this story, we are not talking about Shakespeare’s *recuerdo*, but rather the entire whole of all of his *recuerdos* combined: his *memoria*.

<sup>17</sup> Season 3, Episode 91: “Little Girl Lost,” an episode which Borges never saw, as it was aired in 1962, eight years after he went completely blind. A little girl goes missing, only to be discovered in another dimension, which she has entered through a portal in the wall behind her bed. Bill, the physicist friend of the family, explains that this happens when lines from our three-dimensional world accidentally fall parallel (rather than perpendicular) to the fourth dimension.



magical as that; in fact, the shift is sometimes only a matter of perspective. Here, we'll look at just one element of "El milagro secreto"—not the obvious question of temporal velocity, which will be addressed in another chapter—but rather the internal structure of yet another love triangle (I told you we would end where we started). This will be a useful tool for us finally to discuss the reduction of shapes through perspective.

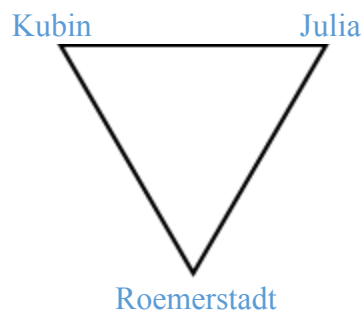
In "El milagro secreto," Jaromir Hladík is granted the time necessary to finish writing his play, a tragedy called "Los enemigos" in which the main character, Roemerstadt, is involved with his lover, Julia de Weidenau, and his enemy, Jaroslav Kubin, in a sort of love triangle. This delightful display of meta-meta-fiction (Borges writing about Hladík writing about Roemerstadt) turns out to be a commentary on the nature of Borges himself, or of any author really.<sup>18</sup> We learn in the end that the love triangle may not be a love triangle at all, but just a love line (I suppose the way we typically hope for love to be). Kubin, as it turns out, is the only lover to Julia, and his enemy (Roemerstadt) is himself. He had been living in a sort of hallucinated or schizophrenic duality in which he had dreamed up an enemy that only existed in his own head. (To be fair, many of the enemies I fight only exist in my head too, but I take comfort in knowing that I'm in the good company of Kubin and Quijote.) And though the story doesn't explicitly say it, we have to wonder whether Julia de Weidenau was any more real than Roemerstadt had been. It seems

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<sup>18</sup> For an interesting treatment on how Hladík is the projection of Borges himself (*un dramaturgo frustrado*) and how he uses Hladík to write the drama he cannot (or will not) write, see Howard Quackenbush's "Borges' Tragedy," in which he states: "In Hladík's drama, the love triangle between Roemerstadt, Julia de Weidenau, and Kubin dissolves with the realization that Roemerstadt is only a creation of Kubin's mind, an aberration formed out of jealousy. So, also, Kubin is merely a projection of Hladík and Hladík of Borges. In a very real sense, Hladík symbolizes Borges the dramatist, for he authors the play that Borges feels incapable of writing. Therefore, an interesting interrelationship results: Roemerstadt is to Kubin as Hladík is to Borges and as the story is to the play. Kubin creates Roemerstadt just as Borges creates Hladík, and the play assumes a narrative form" (80). Furthermore, Quackenbush gives a graphic representation of the layers of narrative/drama that exist in this complex relationship on p. 83 of the article—a move very much in line with what we're doing here. The thought that the narrative structure informs the internal relations of the characterization or vice versa is a fascinating one—one which deserves more research.

perfectly possible that the only real character was Kubin and that instead of a triangle or line, we are left with a point. But what does this have to do with perspective?

As I mentioned earlier in the chapter, all of these forms can be converted into the others from a two-dimensional superficial view by rotating them as if they had that third dimension—depth. For example, a triangle like this:



is easily converted to a simpler form, a line, just by changing the point-of-view from which we choose to look at the triangle. That same triangular plane, if we could either rotate the top leg toward us  $90^\circ$  or move our own position in order to view it from exactly above it (bird's-eye view), we would see this:



Notice that not only have we created a new form (at least as viewed from our perspective), but Roemerstadt has been taken out of the picture, just as it happens in the narrative itself. And why not take it all the way? If that line (now as its own form and not as a limited-view triangle) is rotated from the left point  $90^\circ$  toward us, or if we could view it from the left end, we would be left with just what we expect:

Kubin

•

Julia and Roemerstadt have both collapsed into Kubin, and Kubin stands alone. This collapsing of points into simpler and simpler forms through a change in perspective is supportive of the theory that every man is all men, an idea which we already entertained earlier in the chapter.

Howard Quackenbush points this out in his article:

First, the names created by Borges show that this work dramatizes the “everyman” symbol, placing Hladík within the limits of the dramatic tragedy, a player in a drama of life. It seems more than coincidental that Borges would choose first names as closely related as Jaromir for Hladík, Jaroslav for Kubin, and Jaroslavski for Hladík’s mother’s maiden name. The names share the root “Jaro,” indicating their mutual dependence and common identity. This, again, strengthens the thesis that these characters merge into one being. (80)

So how do we make a simple shape more complex? Or reduce a complex one to a simpler one, as is the case here? How do we see all men in any man? We change the perspective. And that goes for geometric perspective in graphic representation as well as for mental perspective in narrative—and in life. This idea must have some practical application beyond the distant and isolated halls of theory. Might I not see myself in another man simply by changing my perspective? Might I not see my neighbor in myself if I rotate my vision enough to see him from a higher angle? Could I see the divine in a beggar?

This concept is a helpful tool to keep on hand for analyzing any of Borges’ narratives when graphically represented, especially when there appears to be a change in that form as there is in “El milagro secreto.” The same tool could be used in an analysis of “La muerte y la brújula” to discuss the transfer from rhombus to triangle to line in the final discussion between Lönnrot and Scharlach, and it would certainly be useful in an analysis of “La intrusa,” a fact alluded to at

the start of this chapter. But to be able to rotate a two-dimensional shape, we need a third dimension.

## Chapter II. Three Dimensions

Really, the title of this chapter is deceptive (but I don't feel guilty, because I didn't let the deception last long), because after reading the end of the last chapter, you would think that the three dimensions referred to in this chapter's title are length, height, and depth. But having said what I wanted to say about depth and its role in rotation and perspective in the last section, I feel like we can move on from it to other interesting things. The three dimensions most touched-upon in this chapter will in fact be length, height, and time, as these are the three dimensions we will be attempting to map out in geometric forms for use as an interpretive tool. In fact, an alternative title for this chapter would be "Questions of Temporality."

As we discuss and graphically represent time-related narratives throughout this chapter, we'll analyze "El otro" and "Veinticinco de Agosto, 1983"<sup>19</sup> as a pair, then turn to an analysis of "El sur," and then end by returning to "El milagro secreto" to discuss questions of temporality rather than imagined love triangles. In analyzing these stories (and in this order), we will look at three different complications germane to our narrative study of *time*: location within a timeframe (where are we?), direction within a timeframe (which way are we headed?), and velocity within a timeframe (how fast are we moving there?). We won't be answering these questions about our own reality, but rather about the reality presented in the short stories. (But, for the record: I'm currently in the library, heading seemingly nowhere, and heading there at a melancholic glacial pace.)

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<sup>19</sup> In standard Spanish, the names of the months are not capitalized. I capitalize "Agosto" here because that's how the title appears in the book. I'm not sure if that was Borges' choice or the editor's, but I'll stick with it throughout the chapter.

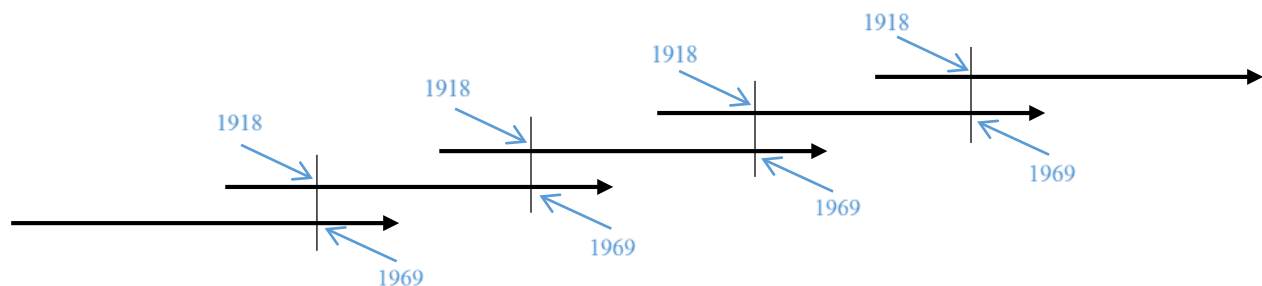
## Overlapping Narratives and (Finally!) the Circle

Now we arrive at one of the most interesting and difficult-to-graph narrative structures. The idea that a single person can have repeated and overlapping existences shows up most strongly in two very similar stories: “El otro” and “Veinticinco de Agosto, 1983.” In “El otro,” Borges meets himself, or at least a younger version of him(self). In 1969, Borges is found seated on a bench at Cambridge when he meets himself, in a younger form, who declares that it is in fact the year 1918 and that the two are currently in Geneva. They argue over whether one is dreaming the other, or vice versa, or whether they both are. Toward the end of the story, Borges, the younger, says: “Si usted ha sido yo, ¿cómo explicar que haya olvidado su encuentro con un señor de edad que en 1918 le dijo que él también era Borges?” (“El otro” 16). In the end, we understand that the encounter is to be repeated infinitely. Every time the 19-year-old reaches 70 years of age, he will have the same inevitable meeting with his 19-year-old version.

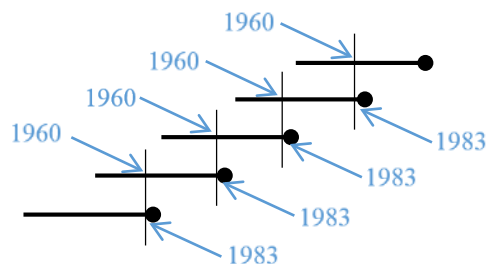
The plot in “Veinticinco de Agosto, 1983” is similar, but the distance between ages is shorter, and in this version, the younger is the narrator. The date, according to the narrator, is the 25th of August, 1960, and he has just celebrated his 61<sup>st</sup> birthday the day previous. He meets his older double on the 25th of August, 1983 (thus the story’s title) in a hotel. He is 84 years old and is about to die. Again they carry out the conversation about dreams and the discussion of literary references. The moribund Borges then predicts: “ya habrás olvidado enteramente este curioso diálogo profético, que transcurre en dos tiempos y en dos lugares. Cuando lo vuelvas a soñar, serás el que soy y tú serás mi sueño” (“Veinticinco” 658). This infinite repetition of the encounter is an important theme for all of the critics that have written about these two stories. Graciela Latella analyzes both stories in her article, in which she treats Borges as two literary

Borges: the Borges-writer of “Veinticinco...” and the Borges-reader of “El otro.” It’s an interpretation based on the process of fictionalization. Ali Shehzad Zaidi treats “El otro” as a critical panorama of Borges’ personal library, but he also formulates an interpretation about the dissolution of binaries and the fundamental metaphor of the story, which is the river, since it is infinite and eternal (Zaidi). Cristina Percoco suggests that “[t]he central theme of the story is the self as illusion due to the fallibility of memory and time as an infinite present,” arguing that the story is a type of decree from Borges that the self, in reality, doesn’t exist (Percoco). She also focuses on the topic of the infinite present and the inexistence of a progressive and chronological temporality, which we will now see in the following geometry.

Both stories explore basically the same idea. The most explicit geometric form that could be mapped out would be a series of overlapping lives or mortalities, represented by simple lines, since the encounter in both stories is repeated over the years. Each lateral line represents Borges’ repeated vital trajectory, and each interception, the encounter. In “El otro,” it would be something like this:



And in “Veinticinco de Agosto, 1983,” it would appear almost identical, with the distance between encounters being briefer, the years different, and the arrow truncated by death:



This model is somewhat satisfactory, but it does cause us certain issues. Even though we know that the encounter in these two stories is repetitive and cyclical, we don't know whether the life itself is. In other words, are there various lifetimes of the same Borges which overlap in order to achieve these encounters (like reincarnation)? Or is it that there is just one interminable lifetime that splits or doubles in order to have the encounters? Or, perhaps even stranger, are there two lives that exist within the same cycle, but in different points of that cycle? The afore-proposed model suggests (perhaps erroneously) that there are several lifetimes, because its graphical representation requires having several overlapping lines. Now I propose another possible model that could explain the repetition of a single life.

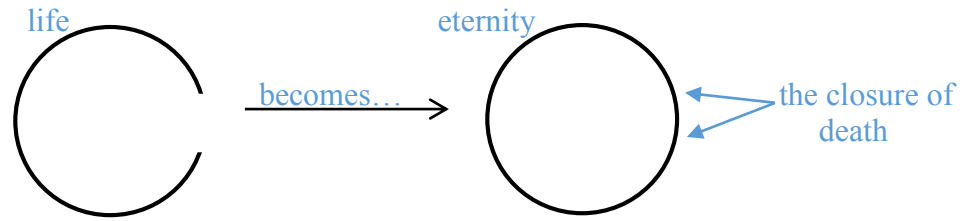
The key to this new model is found in one of Borges' poems called "Poema conjetural." In the poem, Borges speaks about the moment of his own death, looking to many of the same images and ideas that he references upon speaking of his death in "Veinticinco de Agosto, 1983." Toward the end of the poem, he writes the following lines:

Al fin he descubierto  
[.....]  
[...] la perfecta  
forma que supo Dios desde el principio.  
En el espejo de esta noche alcanzo  
mi insospechado rostro eterno. El círculo  
se va a cerrar [...]. ("Poema conjetural" 419-20)

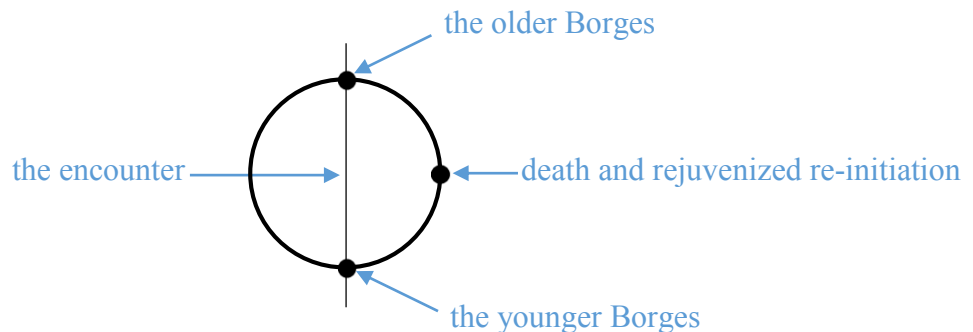
The reference that sticks out is the one that says that his death is the closure of a circle. The implication, then (or at least my inference), is that if death closes a circle, then life is an unclosed circle. Before meeting death, the unclosed circle has a beginning and an end, in spite of its own



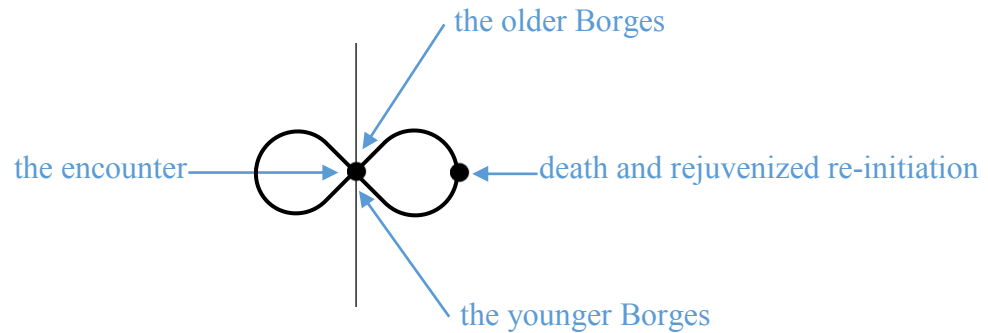
circularity, but upon dying, our circle closes, and we can continue on eternally; death is the door to the infinite.



Death closes the circle, and in the process, it makes infinite that life which once was truncated and mortal (ironic, of course, that death itself is what takes away our mortality, or *die-ability*, but true nonetheless). With this key, we can now understand that with death, Borges reinitiates his cycle, rejuvenized and prepared to once again encounter his “other,” who is by now further along in the cycle. We can now see that this particular graphic representation of the narrative-geometric form in these two stories favors the interpretation that there are two Borges who repeat their existence eternally and who find each other at distinct points of the circle. It would be something like this:



In “El otro,” the distance between the points that represent the older version and the younger version is 51 years; in “Veinticinco de Agosto, 1983,” it’s 23 years. Of course, we would be missing a great opportunity to feel intellectually satiated if we didn’t complete just one last step in our graph. If we simply take the two points representing the two versions of Borges and squeeze them toward each other, sliding along our “encounter” line, we get this:



Not only does this modification facilitate their meeting each other (since now it actually occurs in the same place and not just on the same intersecting line), but it is also pleasing to have stumbled across the lemniscate: the symbol used mathematically to represent infinity.

We see, in the end, that the interpretation most favored by our graphic representation is Percoco's. She affirms that the theme in "El otro" is non-linear, non-chronological time, and that Borges splits and divides himself within his infinite present:

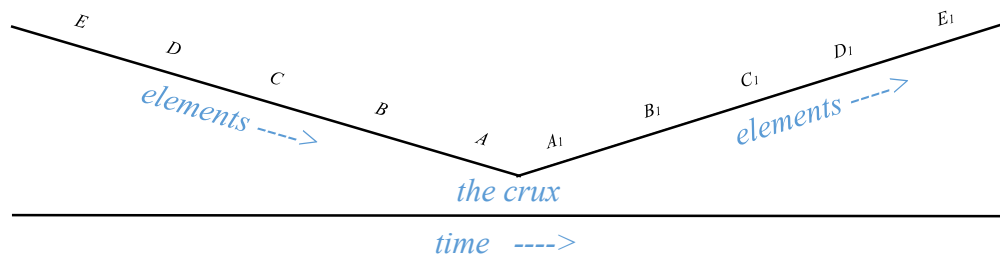
Time is not portrayed as linear since the young and old Borges are engaged in a dialogue with a fifty-one year temporal gap.... The passage of time does nothing to reveal to us a sense of self and undermines the belief that man gains a deeper understanding of himself with age.... At the same time, the doubling of the self reinforces the idea that any understanding one has of oneself can only take place in the moment since our sense of self is constantly changing, like the water in the river. (Percoco)

While this is certainly a non-linear sort of time, it's possible to have a time that is linear and yet which is not progressive or traditional. Enter "El sur."

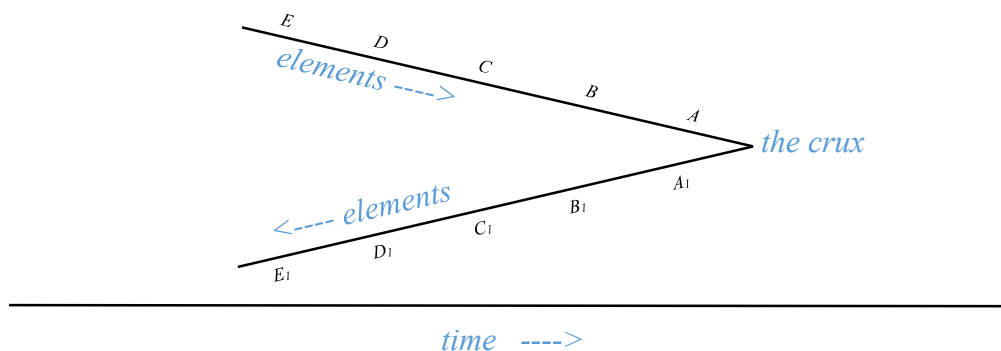
## Regressive Temporal Chiasmus

Chiasmus, a term which refers to the form of the X in the Greek alphabet, achieved its peak in popularity in the ancient Semitic literary tradition. The idea of chiasmus was a simple one: a list of elements would be enumerated in order from the least important to the pinnacle, and then from there, the elements would be enumerated in reverse order. In the center was the element or message of greatest importance, repeated twice. Thus the cross from the form of the X. But the point of inflection, or the crucial moment, had to do with the gravity or the importance of the principal piece of information and not with questions of temporality. In “El sur,” however, a type of temporal chiasmus is set forth in which the point of inflection is the end of one reality and the beginning of a return to the past in another reality.

Traditional chiasmus has its elaboration of elements and its inverse, but always in linear and progressive time:



Borges' chiasmus also includes the elaboration of elements and its inverse, but his reflects; it turns back in regressive time, which adds another dimension to the rhetoric:



The story ends not only with the parallel inverse of the initial element of the story, but also at the furthest point in the past.

In “El sur,” our narrator (Borges) says that “[a] la realidad le gustan las simetrías y los leves anacronismos” (“El sur” 916). That phrase allows us to understand that there will be symmetry in the elements presented, but that there will also be anachronism: things that happen outside of their own time, in other words, outside of linear temporality. In that sentence, his own chiasmus is perfectly described—a symmetrical structure that despite its symmetry does not occur in chronological time, but rather in anachronistic time. Choosing to ignore the forward march of time and at the same time choosing to promote symmetry must require a regression to the past. But then, which is the crux or crucial moment<sup>20</sup> of his chiasmus? In other words, what’s the threshold that leads the protagonist to his own past?

There are several possible moments of commencement to that regression. The crucial moment must be the one in which “el cirujano le dijo que estaba reponiéndose y que, muy pronto, podría ir a convalecer a la estancia” (916). What we don’t know is the nature of that threshold. Stories, progressive and regressive, are symmetrical, but are they equivalent realities?<sup>21</sup> What is clear is that the symbol of that threshold is the street called Rivadavia:

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<sup>20</sup> Notice that both “crux” and “crucial” are excellent words to use here, as they both come from “cross,” referenced by the form of the X in chiasmus.

<sup>21</sup> Here I mention a few possibilities: (1) The moment we receive the news is the protagonist’s death; everything which occurs afterward is post-mortal. (2) The moment of the news is a dream or a type of coma in which the protagonist sleeps; everything that occurs afterward is a dream, and the protagonist dies at the end of the story, in the *llanura* in his dream as well as in the reality of the clinic. In this option, the death the protagonist would have wanted is given to him, in the same fashion as Hladík in “El milagro secreto.” There is some evidence to support this version, since the narrator informs us that the protagonist “odió su identidad” (916) and that “en la discordia de sus dos linajes, Juan Dahlmann... eligió el de ese pasado romántico, o de muerte romántica” (915). (3) There is no change in state; all of it is reality. (4) The moment of the news is when the protagonist passes from an unreal dream (the clinic, etc.) into his desired reality; what we thought was reality had been the dream and vice versa, a la Žižek or as in “La noche boca arriba” by Cortázar.

“Nadie ignora que el Sur empieza del otro lado de Rivadavia. Dahlmann solía repetir que ello no es una convención y que quien atraviesa esa calle entra en un mundo más antiguo y más firme” (916). There is no doubt that upon crossing that threshold, the protagonist is now traveling toward his past. He says that his lunch was served “como en los ya remotos veraneos de [su] niñez” (917), and that our character had bifurcated in the moment of the crux: “Mañana me despertaré en la estancia, pensaba, y era como si a un tiempo fuera dos hombres: el que avanzaba por el día otoñal y por la geografía de la patria, y el otro, encarcelado en un sanatorio y sujeto a metódicas servidumbres” (917). And if that crucial moment is, in fact, death, there is something that could be said about the “closed circle” from the aforementioned geometric form. Is the narrator’s vital repetition a voyage through the circle backward?

As far as critical interpretations of this story go, our graphic analysis surely favors the one developed by Florence Léglise in her article entitled “Espace, temps et mort dans *El Sur*...” Léglise affirms that “la deuxième partie peut, en effet, être lue comme le reflet inversé de la première [the second part can indeed be read as the inverted reflection of the first],” and ends with this perfect conclusion:

Traversant les temps et les âges, mythe et littérature contredisent le temps linéaire et défient par conséquent la mort; la littérature concède ce pouvoir de vie éternelle au livre, à ses personnages et à son auteur. Borges, à travers cette nouvelle, non seulement par sa forme – la construction en miroir – mais aussi par son contenu – présence du mythe et du livre dans le livre – instaure un temps nouveau: un temps cyclique. (Léglise)

[Through time and ages, myth and literature contradict linear time and therefore defy death; literature concedes that power of eternal life to the book, to its

characters and to its author. Borges, in his short story, not only through its form—the mirror construction—but also through its content—the presence of the myth and the book within the book—introduces a new sort of time: a cyclical time.]

To prove the perfect and regressive symmetry of that cyclical time, all that's left is to delineate the details of Borges' regressive temporal chiasmus:

- J. Francisco Flores, the protagonist's maternal grandfather, dies speared by Indians
- I. The protagonist receives a stab from the needle in the clinic
  - H. The ancestor takes courage from a "vieja espada"
  - G. The protagonist reads *One Thousand and One Nights*
  - F. A piece of glass grazes his forehead
  - E. "...desde aquella hora el sabor de tod[o]... fue atroz"
  - D. He meets an employee of the clinic
  - C. He cries upon learning of his imminent death
  - B. The clinic's "coche de plaza"
  - A. Abstract idea of death
  - A<sub>1</sub>. News of his recuperation
  - B<sub>1</sub>. A "coche de plaza" to Constitución
  - C<sub>1</sub>. Happiness; he allows himself simply to live
  - D<sub>1</sub>. The "patrón del comercio" looks like the employee
  - E<sub>1</sub>. "...paladeaba el áspero sabor..."
  - F<sub>1</sub>. A breadcrumb grazes his forehead
  - G<sub>1</sub>. He reads *One Thousand and One Nights* "para tapar la realidad"
  - H<sub>1</sub>. The naked dagger provided by the gaucho (his grandpa?) gives him courage to fight
  - I<sub>1</sub>. The knife fight; it's supposed that he receives a stab from the knife
- J<sub>1</sub>. Our protagonist dies speared by Indians<sup>22</sup>, just like his grandfather; it's the romantic death

<sup>22</sup> Though Borges never says expressly that the opponent was an "indio," he at one point refers to the opponent's "cara achinada." In the Argentine vernacular, *chino* usually refers not to someone from China, but to an *indio* (of indigenous descent). In many dictionaries, one definition of "achinado" is "Indian-looking," even making it synonymous with the term *aindiado*. I have chosen to assume that the opponent was in fact *indio*, both because of Borges' choice of vocabulary and because it makes a perfect chiasmal reference back to the protagonist's ancestor's death.

So we see that the point of inflection—the center of the chiasmal symmetry—invites the protagonist to enter a regressive trajectory (whether that be in death, in a dream, or in some reality) in which the most recent memories are presented to him first, and in which he continues that regression until he finds his own identity. That identity exists and is only to be found in his own genealogical history, and when he arrives at his end, he has been transformed into his own ancestor. He receives the death that he had always wanted. This interpretation is one in which our protagonist is granted a secret wish by experiencing a separate, mental reality—a theme which will appear in the next section as well.<sup>23</sup>

### **From Direction to Velocity: Time Warping**

Now we must pass from directional time-play to questions of velocity. Until now, we have looked fairly extensively at different ways time can become distorted or modified in terms of *location* within a timeframe (notice I don't say *timeline*)—as we saw with “El otro” and “Veinticinco de Agosto, 1983”—as well as in terms of *direction* within that timeframe, which we saw in “El sur.” To finish off our chapter, we'll turn away from questions of location and direction, and instead examine the question of velocity within a timeframe. Is the speed with which we travel toward our future the same for everyone? How could we possibly know? What you experience internally is independent from what I experience, and I can't know yours any more than you can know mine.<sup>24</sup> Can the speed with which we travel through our course of time

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<sup>23</sup> I wish to mention that throughout this entire section, I looked for a good opportunity to insert a joke about *Back to the Future*. Not entirely willing to give up on that goal, I invite you, the reader, to insert your own if you find a good chance.

<sup>24</sup> This idea is marvelously frustrating if you give it too much thought, and it applies to more than just the speed with which we experience time. The same goes for temperature and colors, for example. How do I know that a green object is independently and objectively green? What if what you see and have identified as green since you were two years old is quite a different color from what I see when I identify green? You can only define green in relation to

be changed? And if so, do we have the power to influence that speed, or can it only be achieved through the granting of a *secret miracle*?

Before we dive right in and look at questions of temporality in “El milagro secreto,” I would like to settle one matter right off. Sometimes the topic arises of time travel and whether or not it’s possible, but this is a silly question. Of course time travel is possible; it’s inevitable! In fact, without traveling *through* time, we would have no sense that there was anything such as time at all. We earthbound mortals travel through time every day of our lives at a rate of 60 seconds per minute, 60 minutes per hour, and 24-ish hours per day. So the question isn’t whether time travel is possible, but whether changing the rate of that travel is possible. If we could slow our rate down on an individual level while everyone else continues onward at the standard rate, we would say we have traveled back in time (notice that it must be in contrast to others; if we all slowed down equally, we wouldn’t even notice it, as we would just be moving through time as usual). And of course, speeding up our speed in relation to others would be “traveling to the future”—a phrase I must put in quotes, since in reality we are always traveling to the future. Again, the question is of relative rate to others, not of whether we can travel through time.

But can we experience a slower speed or faster speed than someone else and still end up at the same moment as them at the end of the day? Again, I’m going to have to say “yes.” It has to do, I believe, with subjectivity. It would be difficult to comprehend an instance in which my time independently and externally slowed down while yours did not and yet we ended up together later down the track. But on a subjective level—that is, the level experienced in the

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other things that you also know: “well it’s between blue and yellow,” you might say, but suppose that those are unique to you as well? And what you feel when you say you’re hot is only identifiable in terms of not cold (as far as your personal scale goes), but this provides no dependable reference point for knowing what I experience when I’m hot. A reader who wishes to further explore the topic of inverted spectra or inverted qualia (the concept of differing perceptions of colors, a concept which dates back to John Locke) can read the entry on it from Stanford University’s Encyclopedia of Philosophy, fully cited in my bibliography. (Byrne)



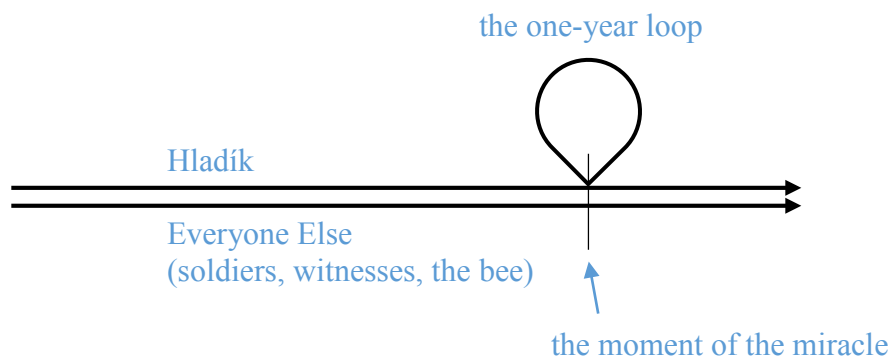
mind—this happens all the time, and we’ve all experienced it. Haven’t you had a “long day” before and expressed to a spouse or colleague how slowly your day has gone, only to have them reply that theirs had flown by? You only have to remember your childhood as proof that the velocity of time can change throughout your life: How long was it between Christmases or birthdays when you were small? And how about now? Phenomenological time is not the same as clock time. The most dramatic of these experiences occur, however, in the state of sleep—that world most affected by the subjectivities of the mind and seemingly free of external forces. Who hasn’t awoken prepared to get up after a full night’s sleep, only to see that the clock reads just 1:30 am? Or worse (I really hate this), who hasn’t gone to sleep and woken up eight hours later, feeling that they had just fallen asleep a few moments earlier? And surely we’ve all had dreams that lasted hours and hours—during a 45-minute nap.

So the question isn’t whether we travel through time (we do) or even if the rate of our travel can change (it can): the question is how it works. Given the aforementioned examples, we know that time is not independent, and that its speed can change subjectively for any individual, but most of us have only experienced this phenomenon on small scales and in ways that are easy to explain away. But in Hladík’s case, what occurs is hardly explainable by logic; it is a miracle, and one granted secretly to only him.

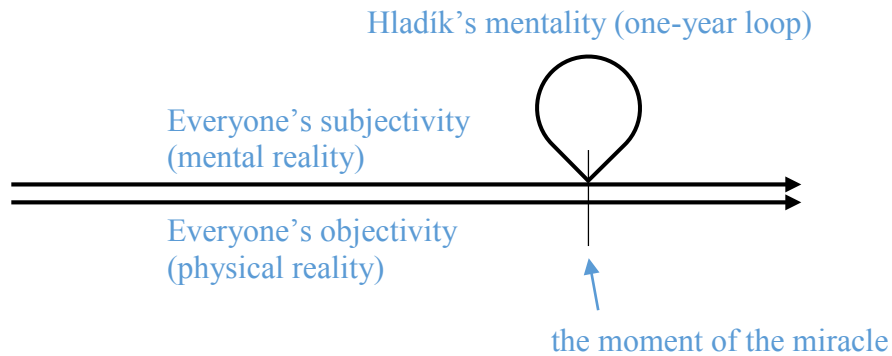
In “El milagro secreto,” Hladík desires to redeem all of his poor writing from the past by completing his one great drama: *Los enemigos*. He is condemned to die by firing squad, but he prays to God for a miracle. He prays that one year might be granted to him to finish writing his *opus magnum*, and the miracle is given to him—subjectively, secretly, but granted nonetheless. At the moment of the firing squad’s discharge of bullets, the physical universe comes to a halt, and a day goes by before Hladík realizes that the miracle has been performed and that he has

been given a year in his own mind—all within the instant of the fatal shot. During the year going on in his head (that is, what Borges calls a “year” in order to give us an objective framework), he completes his work and finds redemption as a writer. Apparently, time was slowed so much for him that it all occurred while the soldiers and witnesses (and even a bee) experienced just one instant of time. But how in the world are we going to graph this?

As I have discovered, graphing this is a big challenge, and every attempt comes up short. This is good practice, though, in preparation for the third chapter, in which everything I try to understand and write and draw will be inadequate. But let’s try anyway:



In this version, we have two parallel realities moving forward together through time: one is Hladik’s, and the other belongs to everyone and everything else. At the moment of the discharge (and the miracle), Hladik is granted a loop that branches away from objective temporality and permits him the additional year that he had petitioned. Upon completing his loop, he and the others are found paralleled at the same moment in time—his death. But what if we have the same graph, but think of it differently (read the labels!):



Instead of one reality representing Hladík as a whole and the other parallel reality representing everyone and everything else, why not make everyone and everything divisible (into two entities: the subjective/mental/internal and the objective/physical/external) and have those be our parallel timeframes? This at least addresses the fact that there is a mental or subject experience of time (of which I gave several common examples a couple of pages ago) and also an external one (which makes it possible to end up at the end of a “long day” in the same moment as our spouse, whose day “flew by”). In the story, we are only given to know what happened in Hladík’s mental reality during that brief physical instant, but we don’t know what happened to the others. Isn’t it possible that one of the soldiers or the bee also had a mental time extension in that instant, experiencing a year or a hundred years for that matter? Or perhaps one of them experienced an instant even faster than the physical instant. The point is that this version helps us understand and interpret the story in laymen’s (rather than Borgesian) terms, because we can all understand a sort of temporal existence in which mental time is flexible while physical time is not—as I said, we experience this frequently enough to be familiar with it.<sup>25</sup>

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<sup>25</sup> For an article on questions of temporality and layers of reality in “El milagro secreto” which is both excellent and quite different from my own analysis (those two likely go together), I highly recommend Montes Capó’s “Temporalidad y existencia,” whose interpretive lens is based on a study of the chronotope.

It is more likely that Hladik's miracle was not due to his having a unique reality from everyone else, but that it was due to his mental experience's simply being different from his physical one. The two pieces of evidence for this claim are that (1) the story explicitly states that his body was paralyzed during the whole year (a drop of rain was left falling on his cheek), meaning that only his mental reality (and not his entire reality—physical and mental) was separate from his surroundings, and (2) his miracle is secret, meaning that others could not see his miracle or a separate reality from their own—the time was granted mentally and subjectively so that only he experienced it.

The idea that a miracle can be granted because of “the Omnipotent's” ability to warp time is a compelling one, especially if we consider that our concept of time is confined to only our experience on this Earth (time on other planets moves at different rates, depending on their relative location). That compelling idea is made even more compelling when combined with the premise we looked at earlier: that *given time*, anything can be all things, and that any man can be all men, or that any word can be defined in terms of another (ideas proposed in “El Zahir,” “Funes,” and “El inmortal”). If anything can be anything else—given the time to become so—then the power to manipulate time is the power to convert something into something else: the power to perform miracles.

Think about that. If we (or God) can change the speed of time, then we can perform miracles. A classic example is perhaps that of Jesus turning the water into wine at the wedding feast. If the water had been left alone, it could have eventually been consumed, converted to waste, passed from the body, soaked into the ground or evaporated, converted to clouds, to rain, to nutrients in a vineyard, and finally transformed into grapes... and from there to wine.<sup>26</sup> In

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<sup>26</sup> Perhaps this was Funes' secret to seeing all he saw in a simple glass of wine? His perfect memory of details can't be erased by *olvido* as ours can or as Borges' was after viewing the Aleph, a point we'll make in the last chapter.

other words, time could have done what Jesus did; the miracle was that it happened in an instant. The miracle was that while the physical world was experiencing one moment, Jesus granted that water a subjective year in which to go through the water cycle and ripen into fruit. Anything (water) can be all things (even wine) if given time, and he who has the power to manipulate time, can manipulate the nature of things themselves.

I stop here momentarily to share a personal thought, because (a) I haven't had a good digression in several pages now, and because (b) it is healthy with Borges' work to ponder the ideas presented until they are carried out to a full extent. It wasn't just any old miracle that Hladik was asking for; it was specifically redemption. He sought redemption from his former works, which he considered subpar and unworthy of his authorship. Based on the idea established in my previous paragraph, then perhaps the miracle of redemption itself (don't all Christians seek redemption from their past works?) is granted through a secret miracle—through a subjective and mental experience of time. If the premise from “El inmortal” is true—that any man can be all men in time—then given time, I could be divine, and so could you. What I mean is, I would perhaps eventually make all good decisions and achieve perfection, but that would take eternities (based on how I've spent the last 27 years of my life, anyway). Perhaps a portion of that miracle the Christians call the Atonement is the transformative power of turning an ordinary man into a divine one in a relatively short period of time such as a 70-year lifespan.<sup>27</sup>

But as difficult as it has been to comprehend the miracle given to Hladik, it still didn't require a graphic or geometric form beyond three dimensions: length, height, and time. More

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<sup>27</sup> It is a uniquely Mormon doctrine that with a tiny handful of exceptions, everyone (even the wicked) will eventually be cleansed of their sins in a temporary hell, in which they suffer the consequences of all their evil. After having done so, they are prepared to receive a “degree of glory”—a layer of heaven. But the high road is to accept the Atonement and repent, thus allowing the sinner to avoid that payment altogether and save himself both time and suffering. And it's no secret that the miracle of redemption is often a matter of granted time, just like for Hladik: “Perhaps as much as praying for mercy, we should pray for time and opportunity to work and strive and overcome” (D. Todd Christofferson, 2011). That chance to redeem our former actions is a secret, internal miracle.

difficult questions follow, in which we'll have to imagine<sup>28</sup> forms that involve length, height, depth, and time, and which will be difficult to represent on paper. Luckily, we'll end after that, since four dimensions—the sum of my human knowledge—is a good place to stop.

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<sup>28</sup> As a side note (or footnote, rather), I think that “imagination” is no more than our everyday word to describe the fact that our subjective and mental reality does not have to coincide with, nor be confined by, our external reality. Our having that word in our language is evidence that we accept the possibility of something like Hladík’s “secret miracle.”

### Chapter III. Four Dimensions

We now encounter our biggest challenge. How do we represent ideas on a two-dimensional page that are, by their very nature, four-dimensional? We can only do so much, and we have to use our imagination to fill in the rest. After all, what I diagram here is not intended to re-create the original anyway; the point of models is that they do *not* perfectly resemble what they represent and therefore do require us to use imagination.<sup>29</sup> And imagination is exactly what's needed to address our last three stories: "Las ruinas circulares," "El Jardín de senderos que se bifurcan," and "El Aleph."

The four dimensions referred to are length, height, depth, and time. These forms not only need the three traditional dimensions, but they also require us to consider that time (and particularly infinite time) make the other dimensions uniquely complex. All three of them somehow have to do with labyrinths in that they build structures difficult to escape (though sometimes not as complex as we'd expect). It will be helpful to set forth here and now what types of labyrinths we may encounter. Weisz summarizes in these words the three labyrinthine possibilities as proposed by Eco:

According to Umberto Eco, there are three types of labyrinths. The first was linear. He refers to the one built by Dedalus at Cnossus, that housed the ferocious Minotaur. When Theseus entered the labyrinth he could only reach the center. In the maze, *Imglirten* or *Irrweg* in German, we have to choose between branching paths, but if we take the wrong path it may lead to a dead end. The third type of labyrinth is a net, each point is connected to another point. This type of labyrinth is similar to a fractal maze since the 'visitor' has to sacrifice global vision in favor

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<sup>29</sup> Unless, of course, we are reading Borges' "Del rigor en la ciencia."

of local vision [...]. The first type of labyrinth portrays linear thinking; the second adds choice and the third represents fractal thinking. (44-45)

These three types will all be referenced in this chapter, so it's important to understand: the first is linear (here the escape may be impeded by temporal complications rather than topological ones); the second is complicated by branches, choices, and forking paths; and the third one is even more dizzying in that those paths create intersections, forming a great net. Upon analyzing these final stories, we'll encounter encircled circles, labyrinths, and fractal forms.

### **Circular Ruins and Procreative Chains, or, On Trees and Tunnels**

In “Las ruinas circulares,” our protagonist leaves all of his labors behind, “consagrado a la única tarea de dormir y soñar”<sup>30</sup> (848). His goal is to create a person by dreaming him—by focusing his dreams with precision on every process of creation, from the heart, to the nervous system, to the breath of life. The act of dreaming another being is akin to procreation,<sup>31</sup> insomuch that the creator/dreamer actually sacrifices his own livelihood and resources in order to bring the dreamed to life, much as a mother must do for her child (a nutritive parasite, by scientific definition): “Ese proyecto mágico había agotado el espacio entero de su alma; si alguien le hubiera preguntado su propio nombre o cualquier rasgo de su vida anterior, no habría acertado a responder” (848). After achieving his goal, he worries about the traumatic possibility that his “son” might discover that he doesn't truly exist but that he is only a dream and a

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<sup>30</sup> A pursuit most graduate students yearn for.

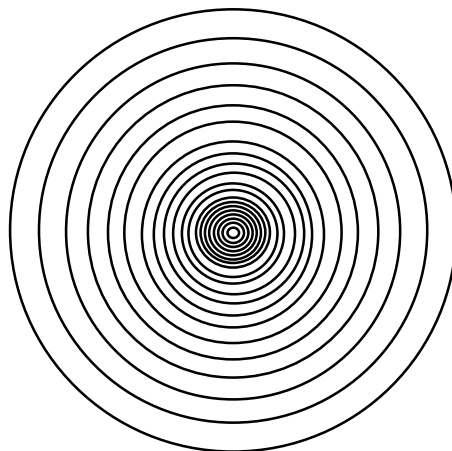
<sup>31</sup> Notice that the word “conceive” (nominally “conception”) are most often used to refer either to a thought (idea) or to a child. This also brings to mind a line from “Tlön, Uqbar, Orbis Tertius” which says: “Entonces Bioy Casares recordó que uno de los heresiarcas de Uqbar había declarado que los espejos y la cópula son abominables, porque multiplican el número de los hombres” (Tlön 831). The idea here is that any time an image is reproduced (think nominally *reproduction*), whether that be through a mirror or a dream, it is similar to copulation—the reproductive process. Dreams reproduce, mirrors reproduce, and people reproduce.



simulacrum—a discovery which the creator considers an incomparable humiliation. At the end of the story, the father learns that he himself has only been the dream of another: “Con alivio, con humillación, con terror, comprendió que él también era una apariencia, que otro estaba soñándolo” (“Las ruinas” 851).<sup>32</sup>

This idea of a dream within a dream immediately brings to mind two questions: (1) Can a dreamed figure dream something beyond the limits of his own dreamer’s dream? And (2) How far back might this procreative chain go? It is possible that the dreamer’s dreamer was also dreamt, and so on and so on. Does it have a limit, or is it infinite?

In response to the first question, it is logical that what a dreamed man dreams must also fall within the dream of his dreamer, since his very existence is inclusive, and therefore, so also are his thoughts. As to the second question, at what point does the chain stop? Can our existence be defined as a series of circumscribed dreams, one flowing forth from the one previous, back to infinity? Or does it stop at some point, perhaps with God as the original dreamer and Adam as his first dreamed? Let’s stop to make a simple drawing:



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<sup>32</sup> I am not a student of comparative literature, and it is not the goal of this chapter to compare Borges’ stories with other works, but there is much that could be said about “Las ruinas circulares” and their relation to Calderón de la Barca’s *La vida es sueño* and Carlo Collodi’s *Le avventure di Pinocchio*. (As well as Christopher Nolan’s wildly successful 2010 film, *Inception*.)

This is a useful graph because it simultaneously represents two things: one is the circles within the circles, each one limited and circumscribed by the one just larger than it, as each dreamer or dream is circumscribed by his dreamer or dreamer's dream<sup>33</sup>. With the help of your imagination's third dimension (depth), it also represents tunnel-vision, which is what we would expect to see if we could see the future of our procreative chain; that is, we see the view of our dreamed's dreamed's dream, and so on. Or, we could consider this to be the view backward—of our dreamer's dreamer's dream, and so on. This is a new type of way we can view genealogy: a tunnel instead of a tree.

Imagine that what we just saw (the tunnel view) is looking down the center of a line, as if it were a corridor, and now we see that line not from the inside, but from afar:

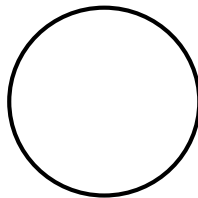


Eco's first type of labyrinth is linear, much like the one presented in the final dialogue of "La muerte y la brújula." This sort of linear labyrinth is not that far from a circular one, since both of them contain just one path and do not yet introduce directional choice (as do the second and third types).

This:



...and this:




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<sup>33</sup> It could also easily be adapted to a spiral, instead, in which each new step of the spiral is a new layer of the dream.

...are only different in that the first has been brought end to end to form a loop, but they are both still linear in the sense that they have no bifurcations and therefore no choice permitted in the narrative. This is likely the type of labyrinth we see in “Las ruinas circulares.”

This is the same type of infinite labyrinth that you see if you stand between two mirrors which face each other. If you’ve ever done so, you’ve likely noticed that it is very hard to get the trajectory in a perfectly straight line, and it typically has a curve. It is as if you are looking up or down a curve in a circular tube which loops back toward infinity.<sup>34</sup> And that brings us to the second question mentioned above: is this chain of procreative dreams infinite, or does it have an origin (that is, an original dream in which all of us are contained in circles within circles)?

One possible answer is that it goes back to God as the original Dreamer, creating a string of dreams within dreams that ultimately exist only within God’s great dream.<sup>35</sup> Part of why we assign the creation of that original dream to God, however, may be that we just don’t know where it goes before that. Ignorance becomes our stopping place due to our inability to comprehend infinity, particularly an infinite regress. In some faiths, it may even be blasphemous to suggest that there was anyone before God, since that might mean there is one greater than he is (though I don’t personally feel that temporal precedence necessarily means hierarchical precedence). In his poem “Ajedrez,” Borges discusses our world as a giant game of chess in which we not only move pieces, but in which we are also pieces, moved about by God. This is a similar idea to the dream conundrum, but it is expressed in the terms of a different analogy. Here,

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<sup>34</sup> The idea that a looping tunnel can curve ever so subtly so as to seem straight is referenced in Borges’ classic poem “El laberinto”: “Rectas galerías / que se curvan en círculos secretos / al cabo de los años” (“El laberinto” 625).

<sup>35</sup> This is different from Bishop Berkeley’s “Immaterialism,” which states that things only exist in the perceiver’s mind. Berkeley didn’t suggest that *we* only exist in God’s mind, since we are distinct perceivers with finite minds. Because God’s mind is infinite, his perception is infinite, meaning that the paper you are reading will exist whether you’re perceiving it or not, since it will always be perceived in God’s mind. The idea proposed here is somewhat different, in that it proposes that people are not separate minds, but that they, too, only exist in the dream/mind of God, just like things.

each player is like a new dreamer. If God moves me, and I move the piece, then is God himself actually moving the piece? Or am I using my agency to move it as God moves me?<sup>36</sup> This is the same question of whether I perceive as a separate but finite mind (Berkeley's idea) or whether I exist only in God's mind and therefore only perceive God's perceptions. At the end of "Ajedrez," Borges himself asks whether there is a player moving God (i.e. whether there is a dreamer dreaming God, in other terms): "Dios mueve al jugador, y éste, la pieza. / ¿Qué Dios detrás de Dios la trama empieza / de polvo y tiempo y sueño y agonía?" ("Ajedrez" 305). This question may have to be left unanswered, but I feel that that is appropriate from time to time, given that Borges was not afraid of ambiguities. Fleming points out, in fact, that Borges' intention was usually *not* to provide an answer, since he himself often didn't possess them:

¿Cuál es el resultado de este abigarramiento, de estas distintas posibles direcciones de lectura? El primero, desestabilizar al crear ambigüedad; desestabilización necesaria para pensar. Se busca inquietar y no transmitir. La obra no da explicaciones ni recetas (ya que su autor tampoco las posee) sino que incomoda al lector, lo pone en situación de perplejidad y de búsqueda, en ese estado de desasosiego intelectual, punto de partida de toda aventura estética (del conocimiento, de la emoción).<sup>37</sup> (467)

However, it's helpful to lean one way or the other, since we have to discuss the conclusion, and because my thesis isn't *El jardín de senderos que se bifurcan* and can't address both outcomes equally in every case; we would need an infinite thesis to do that.

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<sup>36</sup> In Peter Elmore's article on the myth of authorship in "Las ruinas circulares," this theme is addressed in terms of whether anyone writes something truly original and whether they can retain full ownership of what they've written, given that perhaps we can only think up what has been thought in our circumscribing circle.

<sup>37</sup> Fleming does end up agreeing with Arango that it is, in fact, an infinite loop. She also discusses the story's commentary on the creative process, a theme touched upon in Elmore's work as well.

Arango, on the other hand, would tell us that the title of the story itself gives away what we ought to assume, that is, that we are dealing with an infinite loop and not a truncated one: “El tiempo finalmente, que ya se conjetura por el título ‘ruinas *circulares*,’ está fijado en un orden cíclico continuo, repetitivo, y en el cual concurren todos los seres del orbe” (250). If we assume that it can be infinite, then we have formed more than just a series of circles, we’ve formed infinity. But that infinity is still fairly linear—one circle leads to the next, to the next, and to the next in order to form a tunnel or procreative chain. Our next story will address what happens to a labyrinth when branches are built into it.

### **Bifurcations, Lateral Spread, and Fractals**

“Las ruinas circulares” dealt with one particular labyrinth—the kind that has only one path but which is a labyrinth nonetheless because an infinite path, even though it’s solitary, still impedes escape. Now we complicate that labyrinth by adding choice of direction through *bifurcations*. There are at least two other possible types of labyrinths we haven’t analyzed, but we’ll briefly look at all three to determine which is the most likely to define the one found in “El jardín de senderos que se bifurcan.”

In the story, the narrator tells of his great ancestor, Ts’ui Pên, who retired from his occupations to devote his life to writing a novel and to building an intricate labyrinth in which all men would become lost. It is discovered in the story that really those two tasks were the same task: the novel itself was the labyrinth. We know that we are dealing with a labyrinthine book, but what sort of labyrinth are we dealing with?

Before discussing the various possible labyrinths we might be describing in “El jardín de senderos,” I should mention that there are two excellent analyses done on this story and the shapes presented therein. I will be borrowing from Weisz’s article to address the fractal games that occur in the story, as well as a general definition of what fractals even are.<sup>38</sup> But we’ll get to that after we discuss some simpler shapes for this story.

We remember Eco’s first type of labyrinth which we have in “Ruinas,” the linear or looped one in which no branches are found. I don’t think it’s likely that this is the type used in “Jardín de senderos,” and Weisz agrees with me. In “El jardín de senderos que se bifrucan,” Albert makes the mistake of assuming that Ts’ui Pên’s infinite novel would be of this first kind: “Antes de exhumar esta carta, yo me había preguntado de qué manera un libro puede ser infinito. No conjeturé otro procedimiento que el de un volumen cíclico, circular. Un volumen cuya última página fuera idéntica a la primera, con posibilidad de continuar indefinidamente” (“El jardín” 871). Later, he would discover that the novel deals with a very different sort of infinity.

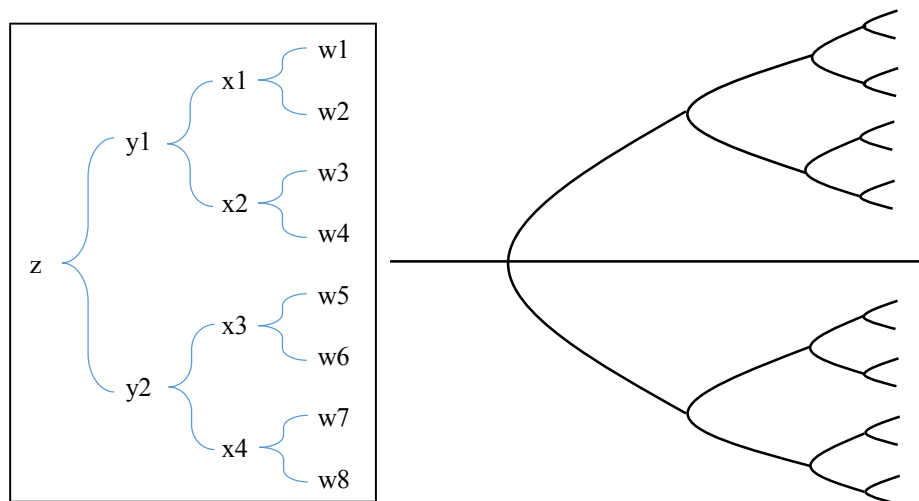
The novel presented a story in which every possible outcome is fleshed out for each possible decision that the protagonist encountered. If in one chapter, for example, the man had the option of killing his enemy or allowing him to live, then both outcomes would be followed in the subsequent chapters. And in each of those chapters, there would be new decisions with multiple possible outcomes, and the book would continue onward, *bifurcating* the characters and stories in order to exhaust all possibilities. The narrative would not only be infinite forward, but infinitely broad as the forking and parallel storylines create a multiverse full of coinciding, clashing, and overlapping realities:

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<sup>38</sup> The other article, by Schreiber and Umansky, delves far too heavily into critical theory to suit my purposes with this thesis, but it’s an excellent article and is recommended for those who wish to consider Borgesian fractal shapes in the light of Lacan, Heidegger, Derrida, Spinoza, and others.

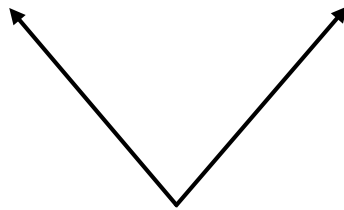
Casi en el acto comprendí; *el jardín de los senderos que se bifurcan* era la novela caótica; la frase *varios porvenires (no a todos)* me sugirió la imagen de la bifurcación en el tiempo, no en el espacio. La relectura general de la obra confirmó esa teoría. En todas las ficciones, cada vez que un hombre se enfrenta con diversas alternativas, opta por una y elimina las otras; en la del casi inextricable Ts'ui Pên, opta —simultáneamente— por todas. *Crea*, así, diversos porvenires, diversos tiempos, que también, proliferan y se bifurcan. De ahí las contradicciones de la novela. (“El jardín” 871-72, italics in original)

So, what we’re dealing with here is either the second type or the third. The second type proposed by Umberto Eco (and summarized by Weisz) is that of a path which still continues progressively but which allows choice to the “victim” or wanderer within the labyrinth. This looks something like a tree because each choice faced by the character bifurcates into various possible outcomes and continues onward:<sup>39</sup>

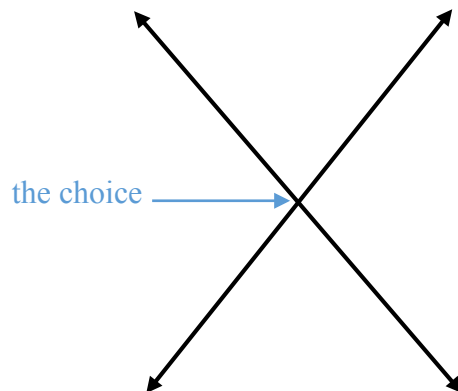


<sup>39</sup> This figure is not of my own design. It is my reproduction of a diagram borrowed from the physical chemist Prigogine as used in Schreiber and Umansky’s article on Borges and fractals.

This second type of labyrinth is a more compelling one to discuss “El jardín de senderos que se bifurcan,” though we will see one problem with it a little later on. Before going on to the third possible labyrinth, I would like to mention that this second, tree-like type is quite reminiscent of the “genealogical” trees we saw in the first chapter in regards to words (in “El Zahir”) and objects (in “Funes”). We could imagine that drawing borders around this tree, if it were turned upright, would look much like the “open triangle” used in Chapter 1:<sup>40</sup>



We could also make it more respectful of the past by accounting for the many decisions which have led us to the one current decision:



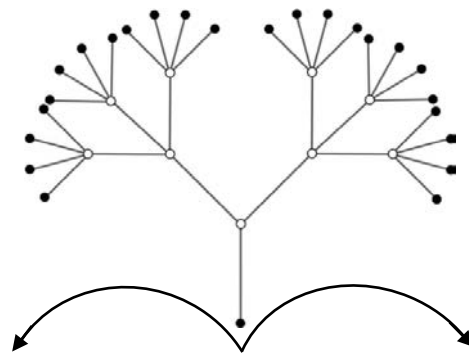
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<sup>40</sup> This genealogical approach, which is the same one proposed in Chapter 1, is hinted at in “Jardín” when Yu Tsun says, “Lo hice, porque yo sentía que el Jefe tenía en poco a los de mi raza—a los innumerables antepasados que confluyen en mí” (868).



This graph shows that infinite outcomes could eventually occur from any given choice, but it also shows that infinite previous choices have led to the existence or opportunity of making the current choice.<sup>41</sup>

One problem with this sort of genealogical view of choice-making is that the open triangle is too narrow. Choices, unlike words in “El Zahir,” have more than two ancestors or descendants per crux. In fact, there may be several possible outcomes to any given bifurcation, making it so that the borders of the tree can’t grow outward in two steady lines but would instead have to account for exponential growth, since a tree in which each fork has many branches would have to look something like this:<sup>42</sup>

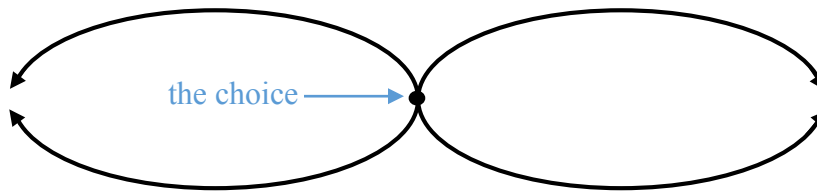


Given the exponential nature of our “forking paths,” the ascendancy-descendancy model (the one accounting for both future outcome branches and past input branches) of the borders would look not so much like the open triangles drawn earlier, but like this:

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<sup>41</sup> In the segment entitled “Time and Punishment” from “Treehouse of Horror V,” Season 6, Episode 6 of *The Simpsons*, Homer accidentally turns his toaster into a time machine and is transported into the past. He is careful not to touch anything (apparently being aware of the Butterfly Effect) but accidentally kills a mosquito. He returns to the future to find that Flanders, his neighbor, is an insufferably optimistic world dictator. He then travels back and forth through time trying to get things back to how they were, creating a series of changes in his future, including the biggest crisis: a world in which his family is rich and happy but in which doughnuts don’t exist. A comparative study on this episode with “Jardín de senderos” is asking to be written.

<sup>42</sup> The tree portion of this diagram is borrowed from the Rosalind Bioinformatics glossary: “Leaf.” *Rosalind*. Web. <<http://rosalind.info/glossary/leaf/>>.



We have yet again serendipitously found our infinity symbol, and one in which there are so many possible outcomes in the future that some must surely begin to overlap with other past decisions we've made, so that everything becomes a tangled mess. Rather than a tree, we have a net (or rhizome).

This—the fact that paths begin to overlap—is precisely the problem with the second type of labyrinth proposed by Eco. Surely the outcomes of our decisions don't always find mutual exclusion in their paths; there's simply not enough space. Some of the alternative directions our decisions can take would at times lead to similar places, if not the same ones (I imagine I would still be here on campus writing this if I had chosen toast instead of yogurt for breakfast this morning, but maybe not). The third type of labyrinth, as described by Weisz, allows us to acknowledge that the branches will overlap and even graft themselves in with each other, creating more intersections, more joints, and more points of contact to deal with: "The third type of labyrinth is a net, each point is connected to another point. This type of labyrinth is similar to a fractal maze [... and] represents fractal thinking" (44-45). Before we can suggest anything about this third type's role in the story, we need to stop and define what fractals even are.

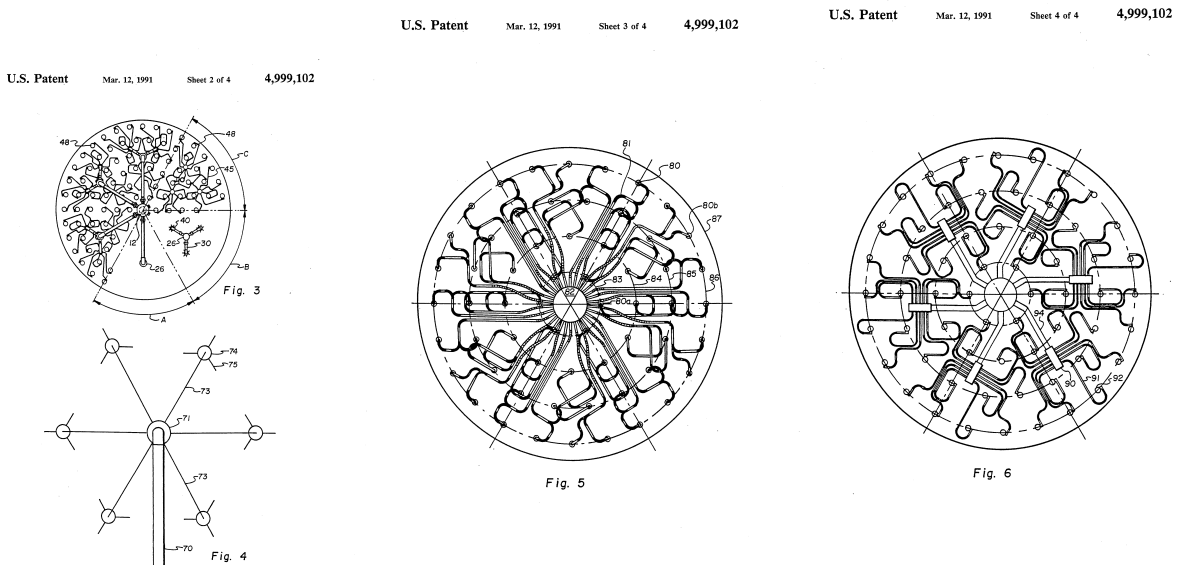
A fractal is a form in which any given part resembles the whole form. In other words, it doesn't matter how small or large the scale is; what you see will be the same as what you would see if you were to zoom in or zoom out to see less or more of the form. A classic example of a fractal found in nature is the beautiful "Romanesque broccoli," which grows in such a way that

the whole looks like any part (a geometric equivalent of synecdoche), and each tiny part looks like the whole (Photo Source: Sullivan):



Notice that as you move from the full view to a more and more microscopic level, the form is the same all the way. Here is a tiny segment of it, as seen zoomed in (Photo Source: G., Tin):<sup>43</sup>

<sup>43</sup> Fractals have practical applications; they aren't just theoretical. My own father, John Cox, is an engineer who designs fractals for better mechanics in fluid distribution. Medicinal and food companies buy these designs to use in their own processing labs. One of my father's patents (US-6994111), whose abstract claims that his fractal "toroidal-shaped vessel" is "for use in uniform plug-flow fluid applications, such as chromatography and adsorption bed processes," is a great example for showing that fractals are more than just ideas to think about. Here are some of the fractal drawings taken from his patents (Cox):



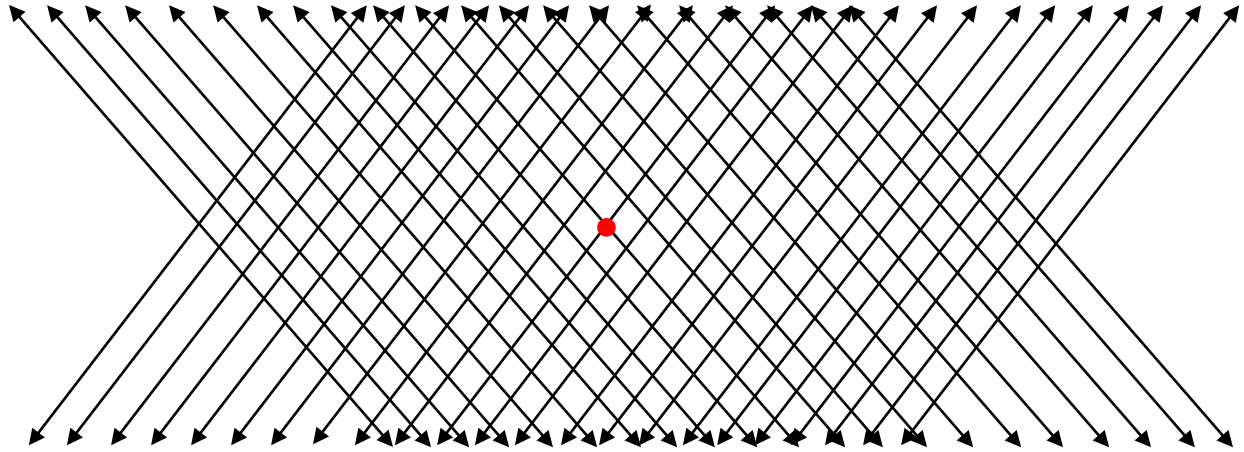


Fractals are an excellent way to discuss the type of infinite labyrinth in “El jardín de senderos que se bifurcan.” In fact, we already saw a fractal figure with the second type—the tree. Each branch with its own forking paths (twigs?) could be seen as a model of the entire tree. Weisz borrows some words from Briggs and Peat’s work on chaos theory: “The morphology of a tree is an adequate model to understand self-similarity: ‘branches have smaller branches with details being repeated down to the dimension of tiny twigs.’ Mandelbot [*sic*]<sup>44</sup> defined ‘self-similarity’ as the iteration of detail at descending scales” (Weisz 44). The difference between the second and third types, however, is that while the branches of the tree each take their own path, the bifurcations of the third type overlap with each other, creating a net in which there are so many intersections that anyone would certainly become lost—Ts’ui Pên’s goal.

Our fractal net will be difficult to draw, because it’s a net that represents all possibilities...infinitely. Frankly, I don’t believe that any drawing could do such an idea justice, except perhaps the drawing which will be revealed at the end of this chapter when we address “El Aleph.” But for now, our forking paths might look something like this:

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<sup>44</sup> The author has correctly referenced Mandelbrot but has misspelled his name, which contains an “r.”



The red dot in the middle might represent a single choice (like the toast-or-yogurt example).

What isn't clear in this diagram is which way is forward in time; it seems that any decision might have four directions to head, in which case *any* direction is a move forward on a path which will inevitably be overlapping and intersecting with other paths. In the end, the discussion of which direction is forward is a moot one, since Ts'ui Pên's concept of time doesn't even necessarily involve progressive or linear chronology (and likely it does not). In fact, Yu Tsun has this small epiphany of his own: "Después reflexioné que todas las cosas le suceden a uno precisamente, precisamente ahora. Siglos de siglos y sólo en el presente ocurren los hechos; innumerables hombres en el aire, en la tierra y el mar, y todo lo que realmente me pasa me pasa a mí..." (867). While my experience might be limited to that red dot (any momentary choice), the reality of the bigger picture is that there are innumerable possibilities and people; it's just that I'm only concerned with me and my present.

Of the three labyrinths proposed by Eco and analyzed by Weisz, the most satisfying one is, I believe, the third one, given the description that "El jardín de senderos que se bifurcan" provides for us:

La explicación es obvia: *El jardín de los senderos que se bifurcan* es una imagen incompleta, pero no falsa, del universo tal como lo concebía Ts'ui Pên. A diferencia de Newton y de Schopenhauer, su antepasado no creía en un tiempo uniforme, absoluto. Creía en infinitas series de tiempos, en una red creciente y vertiginosa de tiempos divergentes, convergentes y paralelos. Esa trama de tiempos que se aproximan, se bifurcan, se cortan o que secularmente se ignoran, abarca *todas* la posibilidades. (873, italics in original)

Furthermore, this model or view of reality may be an accurate description of our own universe. The idea that our past decisions determine our current position in space and time (and therefore our current possible choices) and that our current choices will determine the paths we end up on is very compelling, and it's one that takes us back to the same theme we've seen over and over again: any man might be all man, especially if given time to make all decisions.

Think of it this way: if I had made every choice that you have made, I would be you. And of course it goes both ways. Had you chosen the same option as me upon being confronted with every choice in life—from where to live and whom to marry to what to eat or when to wake up on October 3<sup>rd</sup>, 1992—then you would be me.<sup>45</sup> And, just as the third model suggests, paths sometimes overlap, meaning that different past choices may still end up causing the same outcome in certain aspects. Someone born in California in August of 1988 and who likes cars and football and who converted to Mormonism at 17 may still end up at BYU as I have—I, who was born in Idaho in July of 1987, hates cars and sports, but who likes music and who was born a Mormon. In this case, we have ended up on one of the same paths (BYU) despite many different

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<sup>45</sup> Leibniz's Law, or "identity of indiscernibles," states that no two distinct things can exactly resemble each other, so he may not agree with what I've just said, though he may agree with what I say in my next footnote. Stay tuned! (Also, see Stanford's encyclopedic entry on the Identity of Indiscernibles, cited fully in my bibliography. [Forrest])

choices in the past. Logically, one could argue that we were more *likely* to end up on this particular same path because we did share many past decisions: being Mormon, serving missions, or studying hard in high school and desiring a college education. And perhaps that's true. The more similar our decisions, the more likely our paths will converge, and that means that if we were to make all decisions identically, we would be the same person. It would be possible to imagine such a scenario, but it would be statistically unrealistic given the infinity of possible paths.<sup>46</sup>

Essentially, this model also helps us to understand the idea proposed in “El inmortal.” If we were given infinity to live, we would have the time eventually to make all possible choices and walk all paths of the labyrinth. In so doing, we would all become the same person. The only question unaddressed in that suggestion is whether the *order* of choices and paths matters. Surely we could all wander every path of the labyrinth if given the time to do so, but we likely could not guarantee that we would do so all in the same order. If I make the same choices as you, but in a different order, am I still you? (Most religions would likely say “no,” since most moral codes teach that there are correct decisions, but also a correct order in which to do them.)<sup>47</sup>

Now we must turn from the Garden of Forking Paths to a far more inclusive (indeed, *all-inclusive*) fractal labyrinth: “El Aleph.”

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<sup>46</sup> A person who has made nearly all of the same choices as you, but not all, is what German folklore calls a *doppelgänger*. It is someone who is nearly you, but who is living in a different place or holding a different occupation.

<sup>47</sup> See Ezekiel 18, in which Jehovah teaches that a man righteous all his days who turns wicked in the end of his life shall be damned, and all his good shall not be remembered upon judgment, while a man wicked all his days who turns from them at the last and repents shall be saved, and his wickedness all forgotten. The Christian will tell you that a person who consummates a relationship and *then* is married will become quite a different person from the man who is married and then consummates, though they have made the same choices. Notice that the divine law referenced does not find fulfillment or violation in *what* was chosen, but in what *order* it was chosen, since both have chosen both marriage and consummation. The former is condemned as a fornicator, while the latter is considered to have complied with God's law, *ceteris paribus*. This question—of whether or not order matters—would be a good point of discussion in terms of the idea that given time, any man will become all men. With this viewpoint, exhausting all of the labyrinth's corridors is not enough to equalize you with other travelers; you must complete it in the same order in which they traveled it.

## And Now We Graph Everything in Existence, or, What's the Point?

We end our graphical analyses and geometric mapping (and fun) with a brief look at the short story that, of necessity, contains all other short stories.<sup>48</sup> Here we find the most perplexing form yet, given that the Aleph contains everything in existence, and that simultaneously.

In the story, the protagonist (another fictionalized version of Borges himself) is invited to see an Aleph in the cellar belonging to his late love's cousin. An Aleph, according to the narration, "es uno de los puntos del espacio que contienen todos los puntos" ("El Aleph" 1066). It's a point in space which contains everything—every person, place, thing, moment, space, creation—all in one small point, whose diameter "sería de dos o tres centímetros, pero el espacio cósmico estaba ahí, sin disminución de tamaño" (1068). Upon witnessing it himself, he sees everything:

En ese instante gigantesco, he visto millones de actos deleitables o atroces; ninguno me asombró como el hecho de que todos ocuparan el mismo punto, sin superposición y sin transparencia. Lo que vieron mis ojos fue simultáneo: lo que transcribiré, sucesivo, porque el lenguaje lo es [...]. Cada cosa (la luna del espejo, digamos) era infinitas cosas, porque yo claramente la veía desde todos los puntos del universo. (1067-68)

The vision disturbed his pattern of life and was of such an overwhelming nature that it even threatened his sanity, only to be saved by the grace of forgetfulness: "Felizmente, al cabo de unas noches de insomnio, me trabajó otra vez el olvido" (1069).<sup>49</sup>

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<sup>48</sup> Perhaps we should have started with this one. After all, it contains my whole thesis, too.

<sup>49</sup> What would have happened if poor Funes had seen it? This pairing would make for a great paper or intertextual short story.



The Aleph is well described in terms of fractals, since we know that a small point (two to three centimeters) contained the whole universe without diminution, and “the most salient attribute of fractals—considered as intricate geometrical shapes—is the ability to keep their structural information, regardless of how much the borders of the object are magnified” (43). Furthermore, “when a fractal object is subjected to magnification it shows infinite detail and infinite length” (Weisz 44). We can imagine the Aleph as a magnification of everything—a magnification so powerful that the universe could be viewed through a tiny window the size of an eyeball. Time itself was warped, such that all perspectives of all things were not only viewed, but viewed at once.

How can we map out such a structure?<sup>50</sup> Is it even possible? How do we draw the narrative that contains all narratives, the story that contains all stories, and in short, the form that contains all other forms? We’ve discussed triangles, lines, intersections, planes, overlapping truncated lines, circles (open and closed), lemniscates, chiasmal cruxes, temporal loops in parallel realities, chains, circumscribed circles, tunnels, genealogical trees, and fractal nets... and yet the Aleph must contain all of these and more. So, which is the form that contains all other forms? This:



That’s it. It’s a point. After all, the Aleph itself is only a point, yet it’s a point which contains all things simultaneously and without diminution of reality. If all of existence can fit into a point just two to three centimeters in diameter, then it should be no problem to represent my entire thesis and all its contents in a point visible to the eye.

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<sup>50</sup> Pizarro Prada makes an interesting case that the manuscripts of “El Aleph” show that Borges himself was constantly searching for the Aleph—his creative process followed a map which can be seen reflected in his drafts.

As I pointed out at the end of the first chapter, a love triangle like the one among Roemerstadt, Kubin, and Julia can collapse into a line and from a line to a point simply by changing our perspective. In fact, I claimed that the key to making any simple shape more complex or any complex one more simple was to change the perspective with which we view it. The Aleph in the story is essentially the “collapsing” of all the complexities of the universe into a point, so there’s really no form more apt to conclude with in geometric graphing than the “simple” point. It contains everything else within it; it’s just a matter of your perspective. We could consider the Aleph to be the Kubin of the love triangle—a point which contains the other structures within itself, which (if granted the perspective to do so) we might see as perplexing variety in a simplified form. The Aleph is perhaps that mind of God which has dreamt up all the generations of “Las ruinas circulares”—that mind of God which has dreamt up all of us; it is that outer circle which when viewed, inherently gives us all the sight of all the circumscribed circles within it. A point, then, isn’t so simple after all. Not when it contains *everything* within it, readily viewable to those who have the perspective to see it.

Borges understood that sometimes the most complex, impenetrable, and inescapable labyrinths are not the ones full to the brim with structures; they are the ones simplified in their representation *ad absurdum* until essentially no structure is left. This is the very conclusion he reaches in “Los dos reyes y los dos laberintos,” in which two kings are each given the chance to try the other in his labyrinth. The final and most complex form is not the maze or the fractal net; it is the bare reduction of space without form:

—“Oh, rey del tiempo y substancia y cifra del siglo!, en Babilonia me quisiste perder en un laberinto de bronce con muchas escaleras, puertas y muros; ahora el Poderoso ha tenido a bien que te muestre el mío, donde no hay escaleras que

subir, ni puertas que forzar, ni fatigosas galerías que recorrer, ni muros que vedan el paso."

Luego le desató las ligaduras y lo abandonó en la mitad del desierto, donde murió de hambre y de sed. ("Los dos reyes" 1053).

## Conclusion

If Shaw was correct when he said that graphing out Borges' narrative could illuminate our understanding of the work and its interpretation, I would add that it can also open our eyes to our own world. I have learned plenty about life itself and how it can be changed simply by changing our perspective and by trying to view it in ways we never have. We have seen that people, things, and even words are eternal, if not in their very nature, then in their genealogy. We have confronted the sheer difficulty of understanding temporality (a mortal enigma) and the brain-stretching work of pondering infinity. Understanding (or not understanding) them may be what makes a miracle miraculous. At very least, it encourages us to handle everything around us with a certain gentility, and perhaps even awe or reverence. It is humbling to realize how little we actually know.

But there is still so, so much more that could be studied and written. To try to address the works of Borges (which themselves are sort of a "Biblioteca de Babel") in just 60 pages is laughable. In fact, my thesis has turned out to be (for me, at least) a springboard which has given me more questions to explore than it has answers. Entirely new papers could be written combining several of the forms I've presented here. For example, "Las ruinas circulares" could be mapped out in the second form (the open triangle) as well as the fifth form (overlapping mortalities and the infinite circle) and interpreted through both lenses at once—an exercise that may yield yet another interpretation. Likewise, two stories could be combined. We needn't let one individual story set the boundary of our analysis. For example, what would happen to Funes if he were to see the Aleph? Would he become God? After all, to know all simultaneously and to retain all infinitely is a good definition of omniscience. Was the only thing keeping Borges (the

character) from achieving divinity after seeing the Aleph his own ability to forget? And what might that look like graphically?

In addition, I also left behind (mostly in footnotes) several other unanswered questions that will hopefully lead to further research and thought. As Borges said in “El jardín de senderos,” “En todas las ficciones, cada vez que un hombre se enfrenta con diversas alternativas, opta por una y elimina las otras” (“El jardín” 872). Any one of those un-opted-for alternatives, summarized here, could be turned into its own essay:

1. A comparative study of the differences between the genealogical tree and the genealogical tunnel in Borges’ stories.
2. A Nietzschean linguistic approach to “El Zahir.”
3. The religious question of decision order in labyrinthine paths.
4. A comparative work on “Jardín de senderos” and *The Simpsons* Season 6, Ep. 6.
5. An analysis of “Ajedrez” and “Las ruinas circulares” from Berkeley’s perspective on agency.
6. A theory of imperfection and intentional asymmetry in Borges’ works.
7. A comparative essay on “Ruinas” with *Pinocchio*, *La vida es sueño*, and Christopher Nolan’s films.
8. Conception as an act of dreaming, looking in the mirror, or reproducing.
9. Questions of temporality in the miracle of redemption, or an analysis of “El milagro secreto” from a Mormon doctrinal perspective.
10. A comparative essay between “El milagro secreto” and “Funes el memorioso” from the perspective of Funes’ timeless memory.
11. “El milagro secreto” in relation to inverted qualia.

12. The application of the “reversed roles” idea (actors & acted-upons) to the poems “Las cosas” and “El puñal.”
13. The application of all of these ideas/graphs to the principle of plenitude in “El inmortal.”
14. Girard’s ideas in “La intrusa” and in the love triangle from “El milagro secreto.”
15. And as mentioned, what would happen to Funes if he were to see the Aleph?

I sense that each of these approaches and ideas could also have their very own graphs and drawings, perhaps even opening us to more interpretations of the texts.

It would be difficult to say whether or not I achieved my goal with this thesis. The two criteria set forth in the introduction were (1) that we achieve better or new interpretations of his stories through graphic representation, and (2) that we enjoy it. I believe we have succeeded in the first endeavor; success in the latter is up to you.

I do believe, though, that we have arrived at some conclusions which are at least *interesting*: that adjective that Borges loved (and loves!) so very much.

## Works Cited

- Arango, Guillermo. "La función del sueño en 'las ruinas circulares' de Jorge Luis Borges." *Hispania: A Journal Devoted to the Teaching of Spanish and Portuguese* 56 (1973): 249-54. *ProQuest*. Web. 24 Mar. 2015.
- Blake, William. "Auguries of Innocence." *The Complete Poetry and Prose of William Blake*. Ed. David V. Erdman and Harold Bloom. Garden City, NY: Anchor, 1997. 490-92. Print.
- Borges, Jorge Luis. "Ajedrez." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 2. Buenos Aires: Emecé, 2011. Print.
- . "El Aleph." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1. Buenos Aires: Emecé, 2011. Print.
- . "El encuentro." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 2. Buenos Aires: Emecé, 2011. Print.
- . "El jardín de senderos que se bifurcan." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1. Buenos Aires: Emecé, 2011. Print.
- . "El laberinto." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 2. Buenos Aires: Emecé, 2011. Print.
- . "El otro." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 3. Buenos Aires: Emecé, 2011. Print.
- . "El sur." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1. Buenos Aires: Emecé, 2011. Print.
- . "El Zahir." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1. Buenos Aires: Emecé, 2011. Print.
- . "Funes el memorioso." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1.

- Buenos Aires: Emecé, 2011. Print.
- . "In Memoriam J.F.K." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 2. Buenos Aires: Emecé, 2011. Print.
- . "La forma de la espada." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1. Buenos Aires: Emecé, 2011. Print.
- . "Las ruinas circulares." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1. Buenos Aires: Emecé, 2011. Print.
- . "Los dos reyes y los dos laberintos." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1. Buenos Aires: Emecé, 2011. Print.
- . "Poema conjetural." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 2. Buenos Aires: Emecé, 2011. Print.
- . "Tlön, Uqbar, Orbis Tertius." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 1. Buenos Aires: Emecé, 2011. Print.
- . "Veinticinco de Agosto, 1983." *Obras Completas: Edición Crítica*. Comp. María Kodama. Vol. 3. Buenos Aires: Emecé, 2011. Print.
- Byrne, Alex, "Inverted Qualia", *The Stanford Encyclopedia of Philosophy* (Summer 2014 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/sum2014/entries/qualia-inverted/>.
- Carroll, Robert C. "Borges and Bruno: The Geometry of Infinity in 'La muerte y la brújula'." *MLN* 94.2 (1979): 321-42. *ProQuest*. Web. 28 Mar. 2015.
- Christofferson, D. Todd. "The Divine Gift of Repentance." General Conference of the Church of Jesus Christ of Latter-day Saints. Salt Lake City. 1 Oct. 2011. *Lds.org*. Web. 14 Mar. 2015.



- Cox, John R. "Toroidal Vessel for Uniform, Plug-flow Fluid Distribution Applications." Amalgamated Research, Inc., assignee. Patent US6994111. 20 Dec. 2002. Print.
- Cuervo Hewitt, Julia. "El círculo del cuadrado en el cuadrado del círculo: 'La muerte y la brújula' de Borges." *Crítica Hispánica* 15.2 (1993): 69-83. *ProQuest*. Web. 5 Mar. 2015.
- Dove, Patrick. "Metaphor and Image in Borges's 'El Zahir'." *Romanic Review* 98.2-3 (2007): 169-87. *ProQuest*. Web. 15 Apr. 2014.
- Echavarría, Arturo. "Los arlequines y 'El mundo al revés' en 'La muerte y la brújula' de Jorge Luis Borges." *Nueva Revista de Filología Hispánica* 34.2 (1985): 610-30. *ProQuest*. Web. 5 Mar. 2015.
- Elmore, Peter. "'Las ruinas circulares': Borges y el mito de la autoría." Ed. Juan Pablo Dabove. Instituto Internacional de Literatura Iberoamericana, University of Pittsburgh, 2008. 305-29. *ProQuest*. Web. 24 Mar. 2015.
- Fernández-Lamarque, María. "Women in Borges: Teodelina Villar in 'El Zahir'." Eds. Eva Paulino Bueno, María Claudia André, and Marjorie Agosín McFarland, 2012. 178-93. *ProQuest*. Web. 15 Apr. 2014.
- Fleming, Leonor. "Un dios múltiple: Una lectura de 'Las ruinas circulares'." *Cuadernos Hispanoamericanos: Revista Mensual de Cultura Hispánica* 505-507 (1992): 467-72. *ProQuest*. Web. 24 Mar. 2015.
- Forrest, Peter, "The Identity of Indiscernibles," *The Stanford Encyclopedia of Philosophy* (Winter 2012 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/win2012/entries/identity-indiscernible/>.
- G., Tin. *Romanesco Broccoli*. N.d. *Wired*. Web. <http://www.wired.com/2010/09/fractal-patterns-in-nature/>.

- García, José Mariano, and Clara Miri. "Borges y La Isotopía De La Incertidumbre: Análisis Estructural De 'La Intrusa'." *Letras* 38-39 (1998): 99-104. *ProQuest*.
- Girard, René. *Deceit, Desire, and the Novel: Self and Other in Literary Structure*. Baltimore: Johns Hopkins UP, 1965. Print.
- Irwin, John T. *The Mystery to a Solution: Poe, Borges, and the Analytic Detective Story*. Baltimore: Johns Hopkins UP, 1994. Print.
- Latella, Graciela. "El discurso borgesiano: Enunciación y figuratividad en El otro y Veinticinco de Agosto, 1983." Eds. Karl Alfred Blüher, Alfonso de Toro, and Carsten G. Pfeiffer. Vervuert, 1992. 91-102. *Teoría y Crítica De La Cultura y Literatura*. *ProQuest*. Web. 15 Apr. 2014.
- Léglise, Florence. "Espace, temps et mort dans *El Sur* de Jorge Luis Borges: construction spéculaire, labyrinthe de spéculations." *La realidad y el deseo: Toponymie du découvreur en Amérique Espagnole, 1492-1520*. Ed. Carmen Val Julián. Lyon: ENS Éd., 2011. 257-68. Print.
- Margolin, Uri. "Mathematics and Narrative: A Narratological Perspective." *Circles Disturbed: The Interplay of Mathematics and Narrative*. Ed. Apostolos K. Doxiadis and Barry Mazur. Princeton: Princeton UP, 2012. 481-507. Print.
- McGrady, Donald. "Prefiguration, Narrative Transgression and Eternal Return in Borges' 'La forma de la espada'." *Revista Canadiense de Estudios Hispánicos* 12.1 (1987): 141-49. *ProQuest*. Web. 28 Mar. 2015.
- Montes Capó, Cristián. "Temporalidad y existencia en 'El milagro secreto' de Jorge Luis Borges." *Taller de Letras* 32 (2003): 53-66. *ProQuest*. Web. 12 Mar. 2015.
- Mualem, Shlomy. "Borges and Schopenhauer: Aesthetical Observation and the Enigma of 'El

- Zahir'." *Variaciones Borges* 21 (2006): 107-37. *ProQuest*. Web. 15 Apr. 2014.
- Nietzsche, Friedrich Wilhelm. "On Truth and Lying in a Non-Moral Sense." *The Birth of Tragedy and Other Writings*. Ed. Raymond Geuss and Ronald Speirs. Cambridge, U.K.: Cambridge UP, 1999. 139-53. Print.
- Parker, Allene M. "Drawing Borges: A Two-Part Invention on the Labyrinths of Jorge Luis Borges and M. C. Escher." *Rocky Mountain Review of Language and Literature* 55.2 (2001): 11-23. *ProQuest*. Web. 5 Mar. 2015.
- Percoco, Cristina. "Opening Strategy and the Self as Illusion in Borges' 'El Otro'." *Variaciones Borges: Journal of the Jorge Luis Borges Center for Studies and Documentation* 16 (2003): 109-20. *ProQuest*. Web. 15 Apr. 2014.
- Pizarro Prada, M. "Donde no habita el olvido: Borges y dos textos-mapa." *Inti: Revista de Literatura Hispánica* 65-66 (2007): 121-132.
- Profile of a Writer: Jorge Luis Borges*. Dir. David Wheatley. Homevision, 1983.
- Quackenbush, L. H. "Borges's Tragedy." *Hispanofila* 31.2 (1988): 77-86. *ProQuest*. Web. 12 Mar. 2015.
- Read, Leonard E. *I, Pencil: My Family Tree*. New York: Irvington-on-Hudson, NY: The Foundation for Economic Education, 1999. Print.
- Schreiber, Gabriel, and Roberto Umansky. "Bifurcations, Chaos and Fractal Objects in Borges' 'Garden of Forking Paths' and Other Writings." *Variaciones Borges: Journal of the Jorge Luis Borges Center for Studies and Documentation* 11 (2001): 61-79. *ProQuest*. Web. 16 Mar. 2015.
- Shaw, Donald Leslie. *Borges' Narrative Strategy*. Leeds, England: Francis Cairns, 1992. Print.

- Sieber, Sharon Lynn. "Time, Simultaneity, and the Fantastic in the Narrative of Jorge Luis Borges." *Romance Quarterly* 51.3 (2004): 200-11. *ProQuest*. Web. 28 Mar. 2015.
- Slusser, George, and Danièle Chatelain. "Spacetime Geometries: Time Travel and the Modern Geometrical Narrative." *Science Fiction Studies* 22.2 (1995): 161-86. *ProQuest*. Web. 28 Mar. 2015.
- Sullivan, John. *The Fractal Shape Form of a Romanesco Broccoli*. N.d. *Microscopy-UK*. Web. <<http://www.microscopy-uk.org.uk/mag/indexmag.html?http://www.microscopy-uk.org.uk/mag/artaug13/godandthedevel3.html>>.
- Vázquez, María Esther. "La memoria de Shakespeare: Borges y el laberinto de la memoria." *Letras* 38-39 (1998): 223-33. *ProQuest*. Web. 15 Apr. 2014.
- . "La memoria de Shakespeare': El último juego de Borges." *Revista Iberoamericana* 56.151 (1990): 479-87. *ProQuest*. Web. 15 Apr. 2014.
- Weisz, Gabriel. "Fractal Games in 'the Garden of Forking Paths' by Jorge Luis Borges." *Anuario de Letras Modernas* 8 (1997): 43-47. *ProQuest*. Web. 16 Mar. 2015.
- Weldt, Helene. "La forma del relato borgiano: Las lecturas circulares de 'La forma de la espada'." *Symposium: A Quarterly Journal in Modern Literatures* 45.3 (1991): 218-27. *ProQuest*. Web. 28 Mar. 2015.
- Wilson-Reginato, Michael. "'La memoria de Shakespeare' y la genealogía de la primera persona." *Dissidences: Hispanic Journal of Theory and Criticism* 2 (2006). *ProQuest*. Web. 15 Apr. 2014.
- Winfield Reyes, Fernando, N. "Dibujar-proyectar en la literatura: Especulaciones en torno a 'La muerte y la brújula' de Jorge Luis Borges." *Palabra y el Hombre: Revista de la Universidad Veracruzana* 131 (2004): 109-13. *ProQuest*. Web. 5 Mar. 2015.

Zaidi, Ali Shehzad. "The Overlooked Library in Borges's 'El Otro'." *Variaciones Borges* 31 (2011): 181-97. *ProQuest*. Web. 15 Apr. 2014.