BORGES AND BRUNO: THE GEOMETRY OF INFINITY IN *LA MUERTE Y LA BRÚJULA*

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> ¿Por qué mención de Nicolas de Cusa para apuntalar un lugar común de la geometria?
>
> —Tamayo y Ruiz-Díaz

This essay discusses the relationship of the geometrical logic which I propose is at work in *La Muerte y la Brújula* to that occuring in a group of Renaissance occultist thinkers who fascinated Borges, Ramón Lull, Nicolas de Cusa and Giordano Bruno.* Bruno's *De la Causa, Principio et Uno* will be my master reference, for this work elaborates very precisely the geometrical *episteme* which Borges follows in his story.

Geometrical logic is merely one component of a host of Renaissance notions entertained by Borges, undoubtedly in his Jungian days, in his stories and essays. My essay is purposely limited, therefore, to this single aspect of Renaissance epistemology and theorizes that it is the agent which organizes the text of *La Muerte* down to its very details. Its twentieth-century plot follows the order determined by a template of Renaissance geometrical thought superimposed upon the activity of the text. Borges works out the occult reasoning of the Renaissance in the guise of his detective story. By means of an absent determining principle, absent from the conventional signs of the story and from the superficial level of the story, that is the space in which the characters solve their quandries in their social context, Borges establishes the *episteme* of *La*

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Muerte. The geometrical model functions as a prior structuring element, as an infrastructure of the story whose work is to order a second set of relationships. The geometrical logic of the Renaissance operates in the story to determine the structure and logic of its plot.

Borges criticism contains copious analyses of *La Muerte y la Brújula,* much of it repetitive in discussion of the doubles, colors, and threes and fours of the text. While I must evoke some of this very familiar material I shall keep it to a minimum and hope that selected bibliographical references will suffice to cover the larger questions of the text.

"En los libros herméticos está escrito que lo que hay abajo es igual a lo que hay arriba, y lo que hay arriba, igual a lo que hay abajo. . . ." The apparently Manichean tone of this line from *Los Teólogos*[1] points to a characteristic fancy of Borges for certain historical epistemological dilemmas. The idea that any quality whatsoever implies by its existence an opposite or a negative raises a series of ancient questions concerning difference in identity, the infinite in the finite, and Hermetic theories of *coincidentia oppositorum.* It forms as well the basis for much of Borges' work including the collections *El Aleph, Otras Inquisiciones* and *Ficciones,* and characterizes his indulgence in the anti-scholastic solipsistic debates of the Hermetist schools during the Renaissance. A further example of this way of thinking in Borges can be seen in an ontological variation on the *arriba/abajo* opposition also from *Los Teólogos;* it describes the double nature of man as conceived by the esoteric heretical sect called Histriones. "Quizà . . . imaginaron que todo hombre es dos hombres y que el verdadero es el otro, el que está en el cielo. También imaginaron que nuestros actos proyectan un reflejo invertido, de suerte que si velamos, el otro duerme, si fornicamos, el otro es casto, si robamos, el otro es generoso. Muertos, nos uniremos a él y seremos él." (A, 41)

These human doubles suggestive of Lönnrot and Scharlach compare to the conceptual isometry of the first quotation, but it must be noted that while both schemes seem to postulate a Manichean division, this impression is false. For the contrasting nature of the oppositions actually includes no negative or conflictive quality or value. Thus, in the context of the ontological example the opposite is, in a sense, the *same;* in both cases an isometric difference implies that while the opposite might be "other" it is also identical.

Moreover, the schema of these two puzzles demonstrates that in a sense there is no negative in Borges' work (a point which can be

extended to many facets of the Borgesian commentary on time, space, the intellectual world, etc.), and that opposites can exist without plus and minus values, without good and evil. Borges seems to have little interest in the comparative values of opposites other than for the purely generative, or dialectical, potential of oppositional strategies. In an abstract, philosophical sense, they provide an intellectual commodity which is a supreme organizing principle. With anything less, he would have chaos; with anything more, ideology. Borges lives and writes in that clean, unencumbered world of epistemological operations and sequences characteristic of the logician and the geometer, the world of Blake's Urizen who divides and organizes incessantly.

The characteristic iso-symmetry shaping the rationality at work in these two citations from *Los Teólogos,* the first abstract and qualitative, the second ontological and speculative, undoubtedly recalls numerous other isometrical designs, such as Kubla Kahn's dream (OI, 23-25), discussed in the Borges opus. This essay, however, is concerned expressly with a parallel symmetry: the geometrical sequence in *La Muerte y la Brújula,* and particularly with the *episteme* which generates the sequence and its climactic, contingent evolution into the linear labyrinth.[2]

The thesis of this essay is that the story *La Muerte y la Brújula* is structured by an epistemological strategy whose provenence is the Hermetist school of the European Renaissance, with its interest in the reduction of the many to the one, the complex to the simple, the location of difference in identity and, lastly, the relationship of the concepts of infinity and finitude. Borges seems to delight in the slippery, reversible, tautological schemas of a bouyant pre-classical rationalism during the period in which it emerges from the restrictions of scholasticism. In Giordano Bruno, a very late inheritor of Nicolas de Cusa, Borges finds a representative of that era. Furthermore, this writer believes, Bruno's strongest and clearest influence on Borges is felt in the manner in which the Italian's philosophical work, *De la Causa, Principio et Uno*[3] provides Borges the structuring *episteme* for the plot of *La Muerte y la Brújula.* Borges signals his interest in Bruno principally in the pages of *La Esfera de Pascal,* which alludes to several titles by Bruno, while Borges shows his admiration that, for Bruno, "la rotura de las bóvedas estelares fué un liberación" (OI, 15). But Borges refers specifically to one chapter, that is, to one dialogue of this important work giving the reader a clear and strong signal to follow.

In the "Dialogo Quinto" of *De la causa,* Bruno employs geomet-

rical models to demonstrate his neo-pythagorean thesis that the finite and the infinite are one. Bruno's concern for triads and quaternities also reflects early Gnostic symbolism for difference and unity, as one finds it recounted in Jung's *Aion,* a text which incidentally repeats almost to a title the various works cited by Borges on the occult. "Dialogo Quinto" also reflects Bruno's interest in the finite and the infinite and is the place where he develops his anti-scholastic, and anti-humanist debate, signaling a new trend issuing from an age which Bruno's life closes. In the fifth dialogue, Teofilo, speaking for Bruno, sets out his modern exposition of the typical hermetist philosopher's thesis of the infinite and the one. "È dumque l'universo uno, infinito, inmobile. Una (dico) è la possibilità assoluta uno l'atto. Una la forma o anima; una la materia o corpo. Una la cosa. Uno lo ente. Uno il massimo et ottimo; il quale non deve posser essere compreso, e però infinibile, et interminabile; et per tanto infinito et interminato: e per consequenza immobile.[4]

Resorting to what Borges calls those "ambiciosas y pobres voces humanas *todo mundo, universo,*" (A, 119) Bruno describes the absolute engulfing infinity of the universe with its stark pantheistic or atheistic implications, in such a way that it resembles the interminable paths of the labyrinth limited only by its own contained limitlessness.[5] Borges shares with Bruno a delight in that "concepto que es el corruptor y el destinador . . ." (D, 129)—the idea of the infinite. Nothing shatters the dogmatism of the scholasticism of Bruno's day nor the neo-positivism of Borges' like the imposition of a relativistic framework on the logician's enterprise.

The notion of infinity has several conventional geometrical symbols, one of which, the sphere or circle, is the subject of Borges' *La Esfera de Pascal,* wherein Borges summarizes the theological history of the sphere metaphor. He traces it from the *Corpus Hermeticum,* as have other scholars before him, through Alain de Lisle, Giordano Bruno and Pascal. All of these thinkers toyed with the idea that God or Nature, or the Universe is likened to the infinite sphere whose center is everywhere and whose circumference is nowhere.[6] In *Avatares de la Tortuga,* Borges cites Bruno's forerunner, Nicolás de Cusa, who writes that "en la circunferencia vió un polígono de un número infinito de ángulos y dejó escrito que una línea infinita sería una recta, sería un triángulo, sería un círculo y sería una esfera." Borges adds wistfully that "Cinco, siete años de aprendizaje metafísico, teológico, matemático, me capacitarían (tal vez) para

planear decoroṣamente ese libro" (OI, 149). Yet in *La Muerte y la Brújula,* Borges has treated much of the matter he postulates here, and altogether *decorosamente* at that.

These various geometrical figures play up to the symbolic aptitude of the routine appearance in Borges' work of the Renaissance thematic of *coincidentia oppositorum* in which the infinite is conceived to be explicit in the finite and the finite implicit in the infinite. Both Borges and Bruno draw from *De Docta Ignorantia* of Nicolás de Cusa, which boldly suggests by this reasoning the pantheistic notion that God and the world are one. The one implies the other, just as rest implies motion, potency act, the one the many, and number unity as Teofilo declares in *De la causa.*

Within the narrative of *La Muerte y la Brújula,* the leading indicator to Lönnrot of the pattern of the murders is that "polvorienta palabra griega," *Tetragrammaton,* which is the cabalist's symbol for the name of God in the four letters JHVH. Lönnrot suddenly realizes that a quadrangular rather than triangular plan is in operation. Other clues which eventually fall into place are, to review for the reader, the deceptive three's of the date of each murder which convert to four's when Lönnrot finally discovers in the *Philologus Hebraeo-Graecus* that the Hebrew calendar counts days from sundown to sundown. The patches of the costumes of the harlequins, the losenges of the windows, the Tetrarch of Galilee, and the rhomboids of the painter's shop sign are other minor signals of the fours and quadrilaterals which eventually become the limited quantity of the infinite labyrinth.[7]

Likewise, triangles convert to quadrangles; triadic structures convert to quaternities. But the triadic forms are not lost; they are rather assimilated into the quaternity. In the words of one close reader of *La Muerte,* L. A. Murillo, "The rhombuses simultaneously contain the triangles and are displaceable by them. The "predicament" of symbolic knowledge . . . is that the same figure or symbol can contain two antithetical orders of meaning, a trinity and a tetragram, a mystic equilateral triangle and the Tetragrammaton."[8] The symmetry of the total scheme and the simple integrity of quadrature are, however, not sufficient responses to the questions one can put to Borges' text. The textual clues of three's and four's and of triads and quaternities are merely superficial; Murillo's excellent analysis of the story still does not uncover either the very determinate quality of the process whereby three *must* become four or how (or even why) the linear labyrinth is generated from this

context, especially when the classical labyrinth is conceived as a *pair* of lines which cross at one point so that there can be only one entrance and no egress.

The generational principle behind three becoming four is often alluded to in Jung, where he discusses triadic and quaternary structures. He illustrates the natural process whereby triads move toward quaternities, and may even explain the significance of Treviranus' "No hay que buscarle tres pies al gato" (F, 149): ". . . three should be understood as a defective quaternity or as a stepping stone towards it. Empirically, a triad has a trinity opposed to it as a complement. The complement of quaternity is unity."[9] This passage from Jung's *Aion* proposes an arrangement of forms identical to that discovered by Lönnrot when he realized that his equilateral triangle should have been a rhombus. In other words, Lönnrot's triad of points forming the triangle required a fourth point which made a quaternity of the triangle and thus awarded it unity and completeness. As a consequence of the added point, he created an opposed trinity to the first triad based upon a shared line; that is, two equilateral triangles share a single base line to form a rhombus. Jung's work is to the point here in demonstrating that the isometric shadow world must be known to make the pattern complete and unified, while most people are like Treviranus who, true to his name, can only see the triangle even though the quaternity exists before him in a shadow.[10] While Borges and Jung share more than just the first part of this century,[11] it is Bruno who can put even Jung into perspective for us, because Bruno personified the close of the Gnostic tradition which Jung elaborates and which inspires in *De la causa* its principles concretely exposed in plane geometry.

A medieval source for Bruno's inspirations was the Spaniard Ramón Lull, from whose mnemonic works were derived the Nolan's. Lull is also paraphrased by Borges in *Nota sobre (hacia) Bernard Shaw* (OI, 218). Frances Yates, known especially for her remarkable work on Bruno,[12] has also written on the symbolism inherent in Lull's works, which we may compare with that of Bruno, who was directly influenced by the Spaniard.[13] Professor Yates, having discussed the mystical or divine triangle and the quarternity which names the four elements of the universe, writes: "The geometry of the elemental structures of the world of nature combines with the divine structure of its issue out of the Divine Names [Divine Attributes] to form the universal Art [of Memory] which can be used on all subjects because the mind works through it with a logic which is

patterned on the universe."[14] Professor Yates insists not only on the constant symbolism of the Trinity and the four elements, but also on the logic, the epistemological and generative function of such symbolism: ". . . the four elements in their various combinations enter very deeply into the kind of geometrical logic which it uses. The logical square of opposition is identified in Lull's mind with the square of the elements, hence his belief that he has found a "natural" logic, based on reality and therefore greatly superior to scholastic logic."[15] Certainly, Bruno appreciated exactly this superiority over scholastic logic of Lull's geometrical one, which we find continued in the Italian's arguments which follow this discussion below. Yates further characterizes Lullian logic as a "kind of geometrical logic with squares and triangles and its revolving combinatory wheels."[16] It is particularly interesting that Lull's system, although it lacked Bruno's delight in the infinite and was essentially apologetic, as Bruno's was not, does contain the generative notion of quaternities evolving from trinities and the square from the triangle. The generational aspect is noted by Yates as well, when she discusses Lull's own source, John Scotus Erigena, the ninth-century thinker with pantheistic tendencies. "Erigena's great vision, the Divine Names, are primordial causes out of which issue directly the four elements in their simple form as the basic structures of the creation."[17] The clue to Lull's art of memory in Yate's study is that the "Divine Dignities [or names] form into triadic structures, reflected from them down through the whole creation; as causes they inform the whole creation through its elemental structure."[18] The sense in which the divinity in its triadic shape informs the whole of creation in its quadrapartite elemental structure and is thence contained by it, is a logical thrust we also see in Bruno and Borges. And Yates' testimony to the logic of the geometrical evolution from triangle to square is basic to our reading of Borges and supplies a sense of the process that Jung only hints at.

The geometrical expression of these ideas is found in Bruno's "Dialogo Quinto" and is borrowed by Borges as an *episteme,* or absent determining principle around which the story is articulated. In the process, Borges follows Lull and the Nolan's ideal of reduction of the complex to the simple. The straight-line labyrinth of *La Muerte y la Brújula* is a radical simplification of the Cusan's infinite line tracing through all imaginable figures mentioned above. Moreover, it is the naturally generated outcome of the geometrical logic of the story and grounded in Bruno's explanation of the

symbolic function of the triangle and the rectangle with regard to the finite and the infinite.

In "Dialogo Quinto" of *De la causa,* Bruno begins by offering a challenge to the quality of a person's intellect by distinguishing the superior from the inferior according to the ability of the former to reduce the many into one: "Credi che sarebbe consummatissimo e perfettissimo geometra quello che potesse contraere ad una intenzione sola tutte le intenzioni disperse ne' principii di Euclide. Perfettissimo logico chi tutte le intenzioni contraesse ad una. Quindi è il grado delle intelligenze: per che le inferiori non possono intendere molte cose, se non con molte specie, similtudini e forme. Le superiori intendeno megliormente con poche."[19] Borges rises to the Brunian challenge by attempting to resolve the finite into the infinite and reduce the infinite to a single line, which is nothing more than a simple, singular extended point. Borges accomplishes this reduction, similar to the aleph, through Lönnrot, who after entrapping himself by means of his brilliance and deductive logic, reduces Scharlach's schema to the single, simple all-inclusive line.[20] Bruno himself expounds upon the line relative to point, arguing that if act is not different from potency, then point cannot differ from line. "Se dalla potenza non è differente l'atto, è necessario che in quello il punto, la linea, la superficie, el il corpo non differiscano; perché cossí quella linea è superficie: come la linea movendosi può essere superficie; cossí quella superficie è mossa et è fatta corpo."[20a]

Lönnrot's method of winning the battle of the intellect demonstrates his brilliance and power of analysis, but in the end he becomes the victim not of the crime but the criminal. His reaction upon discovering his terrible fate is to do something analogous to adding a fourth point to the triad of points forming the triangle. Instead of creating a new triangle, he creates a new world, the world in which his linear labyrinth would make him the victor—not victim of the criminal. Robert Gillespie writes an excellent explanation of this behavior in Borges himself; one need only substitute Lönnrot's name for Borges'. Comparing Borges to Father Brown, Gillespie writes: "It is just the reverse in Borges, whose spirit and reason both are thwarted by physical impediments. Borges' way of solving the mystery presented by these impediments is to construct a world that is analogous to them . . . from which the only outs are joking or death."[21] This analogous world is a projection of the real, and a kind of isometric opposite, created by placing a single point at some distant locus relative to, i.e., *based* upon, the real. He thus

creates, in a gesture strongly suggestive of Romantic thinking in Borges, a second not quite believable world. This second world is a "reasonable" or "rational" alternative to the not quite dependable real world that is always prepared to thwart man's reason and intellect. It could also be termed idealistic, metaphysical, or hallucinatory after various Borgesian inferences. Borges' characters stand in a tantalizing posture of gamesmanship between the ideal world of limited human intelligence but of unlimited and extravagant hope, and the real world which scoffs at the evasions of intellect. This isometrical world of Borges' sceptical dialectic Lönnrot inhabits.

In the ideal world, that is, in Lönnrot's projected world, the detective's testament is not only the intellectual, Brunian reduction to the simplest figure imaginable, the line or extended point, but his reversal in the process—at least in his defensive analogous world—of his assassin's goals. In that other avatar proposed by Lönnrot before he dies, Scharlach becomes his victim. Borges allows Lönnrot to win, metaphysically speaking, but only in that other world, for he suffers like any genius the physiological limits of his vulnerable body and the material world. However, Lönnrot still has the better part, self-sacrifice or not, for he moves toward his goal according to Bruno's principle of simplification adopted by Borges for the process of his story: ". . . quando l'intelletto vuol comprendere l'essenzia di una cosa, va simplificando quanto può, voglio dire, dalla composizione e moltitudine se ritira rigittando gli accidenti corrottibili, le dimensioni, i segni, le figure, a quello che sottogiace a queste cose."[22] This is a goal characteristic of Borges himself, as Carter K. Wheelock discusses in his chapter on the epistemological character of Borges' writing. "Carried to a higher plane, the form of an idea becomes the form of a whole hierarchy of knowledge. A system, said Borges, is the subordination of all aspects of the universe to any one of them."[23]

In "Dialogo Quinto," Bruno begins his geometrical proofs by arguing that the universe is one, infinite, and immobile, and that it comprehends all contradictions. In the fourth argument of this dialogue, he proposes signs through which to conclude that contraries coincide in unity and from which he can infer, in the Hermetic tradition, that all things are one. Bruno begins with the difference between a circle and a straight line and concludes with his demonstration that as an arc increases it approximates more and more a straight line. From Nicolas de Cusa's elaboration of the ultimate indifference of the minimum arc and the minimum chord,

Bruno extrapolates that in the maximum there is no difference between an infinite circle and an infinite line.[24] Therefore, in the maximums and minimums contraries coincide as one and undifferentiated. This demonstration begins the process of simplification which Borges will further, and which gives order to the geometrical progressions of *La Muerte y la Brújula.*

> Or quanto à segni. Ditemi che cosa è piú dissimile alla linea retta, che il circolo? che cosa è piú contrario al retto che il curvo? pure nel principio, e minimo, concordano. Atteso che (come divinamente notò il Cusano inventor di piú bei secreti di geometria) qual differenza trovarai tu tra il minimo arco, e la minima corda? Oltre nel massimo, che differenza trovarai tra il circolo infinito e la linea retta? Non vedete come il circolo quanto è piú grande, tanto piú con il suo arco si va approssimando alla rettitudine? chi è sí cieco che non veda qualmente l'arco BB per esser piú grande che l'arco AA; e l'arco CC piú grande che l'arco BB; e l'arco DD piú che gli altri tre: riguardano ad esser parte di maggior circolo, e con questo piú e piú avicinarsi alla rettitudine della linea infinita del circolo infinito significata per IK?[25]

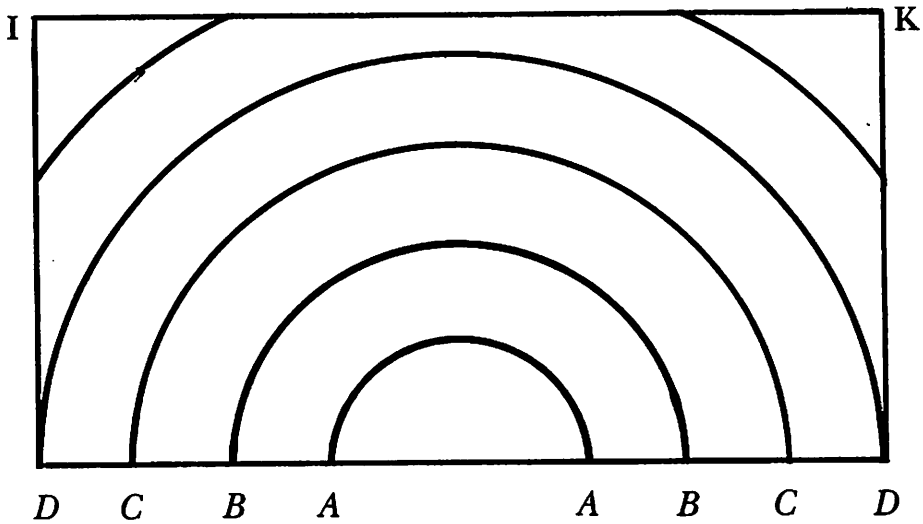

FIGURE 1.

Bruno next evokes the triangle and opposes it to the square. Borges, of course, does the same, with this difference: that the rhombus, still quadrilateral form, is substituted for the square. The triangle in Bruno's work demonstrates simple finitude. "Il triangolo è la prima figura, la quale non si può risolvere in altra specie di figura piú semplice (come per il contrario il quatrangolo se risolve in triangoli) e però è primo fondamento di ogni cosa ter-

minata e figurata."[26] When compared to the Brunian arguments concerning the arc and the line, it is clear that either maximizing or minimizing the triangle has no effect on its measure. The sum and measure of its angles remains the same in an infinitely minimum or in an infinitely maximum triangle. Moreover, it cannot be resolved into another figure, which therefore awards it the Brunian attribute of uncompromised finitude.

> . . . trovarai che il triangolo come non si risolve in altra figura, similmente non può procedere in triangoli, di quai gli tre angoli sieno maggiori o minori, benché sieno varii e diversi, di varie e diverse figure, quanto alla magnitudine maggiore e minore, minima e massima. Però se poni un triangolo infinito (non dico realmente et assolutamente; perché l' infinito non ha figura: ma infinito dico per supposizione, e per quanto angolo dà luogo a quello che vogliamo dimostrare): quello non arà angolo maggiore, che il triangolo minimo finito, non solo che li mezzani, et altro massimo.[27]

The quadrilateral figure, on the other hand, has qualities symbolically more appropriate to the concerns of Bruno and Borges, whether one considers squares or rhombuses. Borges' rhombus, simply, is formed from two equilateral triangles based upon a shared line, but when divided across its baseline the configuration is open to the analysis applied by Bruno to the square.

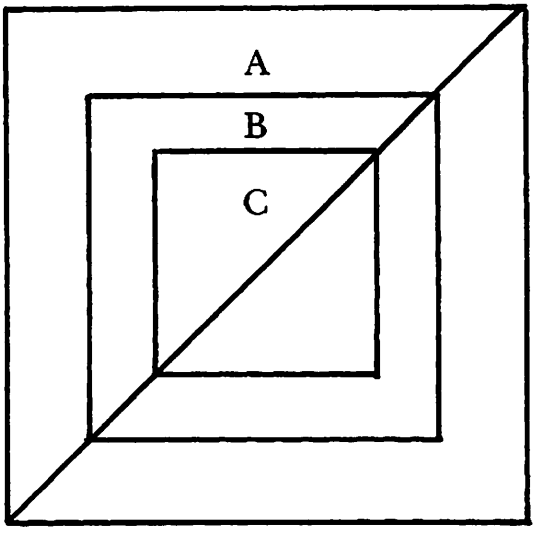

FIGURE 2.

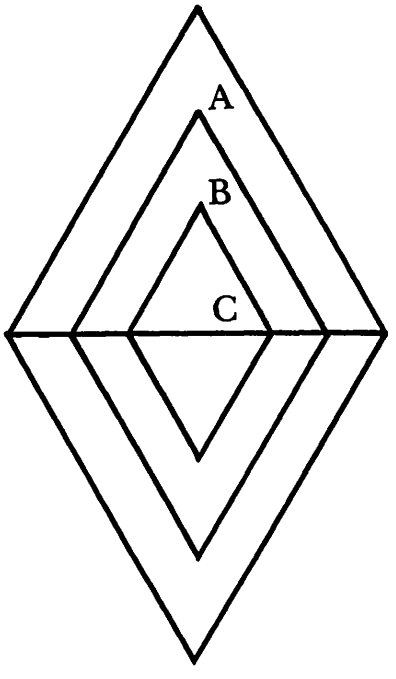

FIGURE 3.

Divided diagonally, Bruno's square offers two opposed right triangles which in turn, and in contrast to the isolated triangle, can reproduce the finite by the inscription of smaller triangles (or divided squares) within the infinitely divisible original. Bruno's argument runs as follows:

> Lasciando stare la comparazione de figure e figure, dico di triangoli e triangoli: e prendendo angoli et angoli, tutti (quantumque grandi e picciolo), sone eguali come in questo quadro appare, (Fig. 2) il quale per il diametro è diviso in tanti triangoli: dove si vede, che non solamente sono uguali li angoli retti di tre quadrati A, B, C, ma anco tutti gli acuti che risultano per divisione di detto diametro che constituisce tanti al doppio triangoli, tutti di equali angoli.
>
> Quindi per simultudine molto espressa si vede come la una infinita sustanza può essere in tutte le cose tutta, benché in altri finita in altri infinitamente; in questi con minore, in quelli con maggior misura.[28]

Proceeding from Bruno's reasoning to Borges', one sees that the prescription of a fourth point over the city of Triste-le-Roy forms the rhombus. The Borgesian quaternity, therefore, possesses the same qualities for embracing the finite within the infinite, for in Bruno's work the conclusion to be drawn is that Scharlach's labyrinth, devised to snare Lönnrot, and detected too late by him, necessitated a quadrangular form—the quaternity which Jung states is an organizing schema par excellence—in order to qualify as a labyrinth and not simply for reasons of mystical symbolism, as Treviranus mistakenly believes about the triangle. The quaternity was necessary purely and simply because it is the symbolical route to the infinite, and without the infinite there is no labyrinth. Jung's statement that quaternity "is a system of coordinates that is used almost instinctively for dividing up and arranging a chaotic multiplicity"[29] pertains particularly to the labyrinthine strategies of Scharlach and will pertain as well to the labyrinthine pretensions of Lönnrot. The quaternity will impose order and arrangement over the chaos of a labyrinth; moreover, it will provide an order and a finitude to the infinite and multiple aspects of its endless character. Thus the quaternity in Borges' story reflects the quality of Bruno's square by demonstrating finitude and infinity in one and the same schema, and finally awards at least a symbolic language to Pascal's "firmamento que no hablará" (OI, 13).

Borges, however, takes the Brunian *episteme* one step further. Until this point, the Nolan's reasoning has guided the story's intrigue, while the characters, puppets of Borges' narrative strategies,

have worked out their destiny in accordance with the directives of this ancient principle. Scharlach, until now, represents that historical—and thus limited—character, and his is the function of ordering the story by the imposition of his worldly rationality. But no sooner does the labyrinth close on Lönnrot than the *episteme* of the ancients comes to a halt. Scharlach has the trigger yet to pull and his own "history" of his pursuit to relate to his captive victim, but the determining rationality moves to Lönnrot. The detective and interpreter of signs now begins to spin his modern web in a fashion and place which one may now have come to expect—in the infinite world. Lönnrot's thinking, as opposed to Scharlach's, is not based upon history, with the exception of his bow to Zeno, which is a misleading clue throwing off the reader. His thinking operates in the world barely hypothesized by Bruno, the relativistic a-historical world of time, space and movement which has been consecrated by the twentieth century. Lönnrot's speculation is a break with history and Scharlach's world, just as Bruno's was a break with the history of his own. Unfortunately for Lönnrot, his creative wisdom was bounded by both history and material reality. His labyrinth is a projection of thought issuing from that projected isometric world which opposes the real world in the same fashion that the fourth point projected a second, equilateral triangle. From Lönnrot's analogous world, the world of intellect deprived of production and efficacity, arrives a metaphysical transcendence which eludes the trap of Scharlach's rationality but cannot elude his reality.

Erich Lönnrot and Red Scharlach in the critical literature are regularly characterized as doubles because of the likeness of their names which each refer twice to shades of the color red. Yet this reference is as incomplete an interpretation as would be an interpretation of Lönnrot's labyrinth merely as a Zenonian paradox. Lönnrot and Scharlach are less doubles than they are enemy brothers. In their names and in their actions, they work out the epistemological theme of the story, that of difference in identity of reciprocal difference. But more importantly, because of the different worlds in which they apply their rationality, they also symbolize the predominant model of difference and identity at work in the story, which is the presence of the finite explicit in the infinite and the infinite implicit in the finite. Lönnrot represents the infinite scale because of his projection of a labyrinth into a non-historical, speculative and infinite world of another avatar. Scharlach is concrete, historical, vengeful and finite; he is also successful,

which is a Borgesian opinion on the world of the intellect. Lönnrot, who does not pursue the criminal with the worldly incentive of vengeance, but rather for the spirit of the game, is an idealist and does not detest his victor in this hunt. He does not consider the search as a game of life, but naively, a game of intellect operating in a world of signs and significances so private and hermetic that they are shared by no one. The very privacy and irrelevancy of his act of projecting a labyrinth before he is shot testifies to the isolation and solipsism of his position relative to the social world.

However, in his idealism Lönnrot takes the historically limited Brunian problem one large step further when he leaves the geometrical quality of shape and radically reposes the schema of Bruno in terms of his linear labyrinth. For in rejecting rhombic symmetry for a labyrinth of a straight line, Lönnrot turns intellectual history upon itself. He and Borges hold to the Brunian idea of the intellectual's task of reducing multiplicity to its simple essences. Lönnrot, victim and victor at once, finite and infinite, proposes to Scharlach in Borgesian fashion that "En su laberinto sobran tres líneas" (F 158). Borges moves away from multiplicity by transforming the quadrilateral form into a (uni-)linear form reducing the multiple to the singular, four to one. Yet the genius of his reduction is that along the single line lay four points, the four points of the quaternity which insure completeness, organization, unity and the infinite. Borges' invention here, although a great step from Bruno, does have a parallel in Bruno.

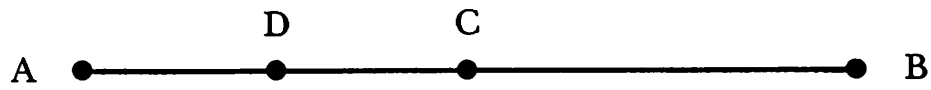

FIGURE 4.

In his arguments in the "Dialogo Quinto," Bruno extends his discussion of triangles and quadrangles to demonstrate that "in questo uno et infinito, li contrarii concordano."[30] After stating that acute and obtuse angles are contraries, he shows that they "nascono da uno, individuo, e medesimo principio, ciò è da una inclinazione che fa linea perpendicolare M, che si congionge alla linea iacente BD nel punto C. . . .

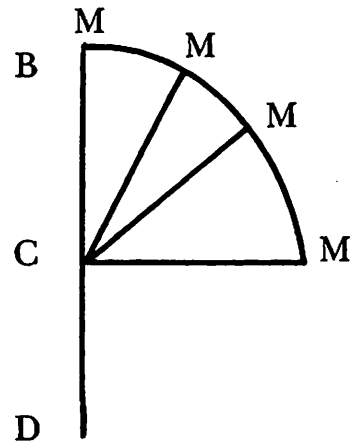

FIGURE 5.

At the point where the perpendicular line M moves toward conjunction with the line BD, the angles to each side of MC become increasingly obtuse and acute until all angles are reduced to indifference by virtue of the ultimate superposition of line MC over BD. They become one, he says, in the potency of the same line that . . .

> essendo gionta, et unita, fa l'indifferenza d'acuto et ottuso, similmente annullandosi l'uno e l'altro, perché sono uno nella potenza di medesima linea. Quella come ha possuto unirsi, e farsi indifferente con la linea BD, cossí può disunrsi e farsi differente da quella, suscitando da medesimo, uno, et individuo principio, i contrariissimi angoli che sono il massimo acuto, e massimo ottuso: sin al minimo acuto, et ottuso minimo, et oltre all' indifferenza dei retto, e quella concordanza che consiste nel contatto della perpendicolare, e iacente.[31]

The principle at work in Bruno's straight line operates in Borges' as well, there being an indifference of the points of the quaternio as they are resolved from various angular schemes into the straight line.

The imposition of Zenonian paradox upon the simplification of the quaternary structure into a straight line rails with modernistic irony. For Borges, the hesitant modern, both critic and apologist of idealism, condemns both the hallucinatory metaphysics of the idealist and at the same time gives to him alone the victory of the intellect. "Admitamos lo que todos los idealistas admiten: el carácter alucinatorio del mundo. Hagamos lo que ningún idealista ha hecho: busquemos irrealidades que confirmen ese carácter. Las hallaremos, creo, en las antinomias de Kant y en la dialéctica de Zenón." Borges goes on to quote Novalis in this regard and in such

a way as to condemn Lönnrot. "El mayor hechicero sería el que se hechizara hasta el punto de tomar sus propias fantasmagorías por apariciones autónomas. ¿No sería ése nuestro caso?" Borges concludes: "Yo conjeturo que así es. Nosotros (la indivisa divinidad que opera en nosotros) hemos soñado el mundo" (OI, 156).

The paradoxical schema of this superficially Eleatic enigma is that unlike other quaternities, Lönnrot's idealistic one refuses cloture at the fourth point, thus resembling the classic labyrinth. While Scharlach was able to enclose the unsuspecting Lönnrot within the rhomb when they met at the last point, he will never catch him in the radically new labyrinth proposed by his victim. In the next avatar, if that unassuaged irony were to inflict itself upon life, Lönnrot would survive based upon the principle that by proceeding by halves, Scharlach beginning at point B could never arrive within range of Lönnrot. The dreamer is one of the few who remembers Zeno's first paradox, for according to Borges, "Casi nadie recuerda el que lo [the second paradox] antecede—el de la pista—. . . ." The mechanism is well known: "el móvil debe atravesar el medio para llegar al fin, y antes el medio del medio, y antes el medio del medio del medio y antes. . . ." (OI, 150). Once the halving begins on a line terminated by the first two projected crimes, at points A and B, (Fig. 4) then the progress to point D is impossible; but the Eleatic dilemma is familiar to Borges scholarship and needs no further elaboration. What is different from and more important here than Zeno's paradox is that the postulated line includes the four points necessary to express qualities necessary to the labyrinth, infinity and unity. After the fourth point is reached in Lönnrot's schema, progress breaks down into infinite progressions toward a point and is thus tantamount to motionlessness. Borges' "El movimento es imposible (arguye Zenón) . . ." (OI, 150), recalls Bruno's "E dumque l'universo uno, infinito, inmobile. . ."[32]

Borges has it both ways. He maintains the figure of quaternity and the map articulating its four points.[33] He thus maintains the infinite within the four points while reducing a complex proposition to the most simple one by capitalizing on the features of Eleatic paradox. The line undergoes infinite segmentation between C and D as progress by halves proceeds in fashion similar to the procedure by which the square and rhomb can be infinitely divided and still remain true to their form. The infinitely divisible straight line labyrinth retains these necessary characteristics, and yet adds an

additional Eleatic paradox which would trick Scharlach, the vengeful pursuer. In a most subtle fashion, the paradox reveals once again the common Borgesian bow in the direction of Oedipus. In a second reversal of roles in the last minute, Scharlach becomes the pursuer pursued, exchanging roles with Lönnrot, who was pursued from the start and victimized by the person he pursued. The exchange creates an isometric pattern of doubling and alternation of roles between the two. These doubles differ in their identity; Lönnrot and Scharlach are like Bruno's overlaid lines that can be both differentiated and undifferentiated. Like the double being from *Los Teólogos* which began this essay, dead, they will be united and one will be the other. "Muertos nos uniremos à él y seremos él." In another avatar, or *quizá*—dead, Lönnrot could be master. Like Tlön, Lönnrot's straight line "será un laberinto . . . destinado a que lo descifren los hombres" (F, 34).

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NOTES

1 Quotations from Borges' works are taken from *Obras Completas,* 3 volumes (Buenos Aires: Emecé Editores, 1965). This edition merely sews together the separate volumes, with their individual pagination, known separately and collectively as the *Obras Completas.* It contains nine separate collections, three to a volume, of works published through 1964. Volumes cited in this essay, with dates of latest editions until 1965, and the conventional abbreviations used in Borges criticism to identify them in the text are the following: *Otras Inquisiciones,* 1964 (OI); *Discusión,* 1964 (D); *Ficciones,* 1963 (F); *El Aleph,* 1961 (A). Page numbers follow abbreviations in the text of this essay.

2 Borges criticism has made little of this fascinating puzzle. The critical literature for the most part is content to allow the linear labyrinth be explained by the Eleatic paradoxes, or to reduce the problem to a platitude as does for example J. Alazraki: "una sensación de inutilidad de todas las cosas" in *La Prosa Narrativa de Jorge Luis Borges.* (Madrid: Editorial Gredos, n.d.) p. 177. This essay wishes to investigate the linear labyrinth in order to expand upon its intellectual implications and to anchor it in an historical context whose development in Giordano Bruno sets an astonishing parallel with its adaption by Borges. This historical epistemological schema, or *episteme,* not only orders the Borges story, but must impart to it as well the meanings of its symbolism, a thesis which when imposed upon the story will obviously bring a new and sometimes conflicting interpretation to the fore. The test of its value as a reading will be in the coherence it can impose upon the story in its entirety.

3 Giordano Bruno, *De la Causa, Principio et Uno,* a cura di Giovanni Aquilecchia (Torino: Einaudi Editore, 1973).

4 *ibid.,* 142.

5 Marcial Tamayo and Adolfo Ruiz-Días in *Borges, Enigma y Clave* (Buenos Aires: 1955) have confirmed, with the same force as Bruno elaborates his opinion, Borges' reduction of the many to one: "No hay más que un ente, cada cosa en cuanto es, es todas las cosas. Todo está en todo, todo es uno" (p. 42).

6 C. G. Jung cites Mathias Baumgartner, *Die Philosophie des Alanus de Insulis* (Munster: 1896) as the scholar who accomplished the groundwork in tracing the saying "God is an infinite circle (or sphere) whose center is everywhere and the circumference nowhere," to a *liber Hermetis* or *liber Trismegisti:* in *The Collected Works of C. G. Jung,* trans. R. F. C. Hull, vol. 9, pt. I (London: Routledge and Kegan Paul, 1959) p. 325.

7 The reader is undoubtedly familiar with the many analyses of *La Muerte y la Brújula,* and to labor the three's and four's and other elements of the plot strategy would not add to my contribution nor offer more to the reader than can be found in the following excellent books: Ana María Barrenechea, *Borges the Labyrinth Maker,* trans. R. Lima (New York: New York University Press, 1965), pp. 36-37; Jaime Alazraki, *La Prosa Narrativa de Jorge Luis Borges* (Madrid: Editorial Gredos, n.d.), pp. 58-59; Carter K. Wheelock, *The Mythmaker* (Austin: University of Texas Press, 1969), pp. 90-91; Ronald J. Christ, *The Narrow Act,* (New York: New York University Press, 1969), pp. 120-121; L. A. Murillo, *The Cyclical Night* (Cambridge: Harvard University Press, 1968), pp. 187-194. Also by Alazraki, "Borges and the Kabbalah" in *Prose for Borges* (Evanston: Northwestern University Press, 1974), pp. 184-211, especially pp. 182-189. Also Lewis H. Rubman, "Creatures and Creators in *Lolita* and *Death and the Compass*" in *Modern Fiction Studies,* (1973) pp. 433-452.

8 Murillo, pp. 189-190. I cite Murillo here because he perceives the coexistence of the triangle in the square, even though he makes no allusions to Bruno. But without Bruno, in which the *hierarchy* of forms is foremost, Murillo can ostensibly state that the rhombuses are displaceable by triangles. But by following the thinking of Bruno, the weight and value of each geometrical form is revealed and the equivalence Murillo draws between the two forms cannot stand. Murillo reads like inspector Treviranus, who does not know that the mystic equilateral triangle *has* to have a fourth point outside itself to give it the qualities of the mystic it pretends to have. By following Bruno, as I suspect Borges must have done, the progress of the story and the generation of forms takes on order and meaning which no critic of this story has yet, to my knowledge, observed in print.

9 Jung, vol. 9, pt. II, p. 224. The idea of the three-legged cat, a colloquial Spanish expression, indicating something overly complicated, and in Treviranus' expression indicating the search to make an unnecessarily complicated matter of something, has an interesting relevance to this essay precisely because of Borges' own interest in Jung as a writer more than as psychologist. In Jung's *The Phenomenology of the Spirit in Fairytales,* 9, II, pp. 207-254, three-leggedness occupies the central place in one of the tales analysed and brings Jung to expound at length on the symbolism of three's and four's. "The superiority of four-leggedness over three-leggedness," writes Jung, "is not altogether unexpected. But what is the meaning of the opposition between threeness and fourness, or what does threeness mean as compared with wholeness? (p. 234). It is indeed ironic that Treviranus, whose name signifies the number three, would reject the "complication" of three, i.e. the three-legged cat. He is correct in the word play of his expression, but wrong in his name. The three-legged cat must be overlooked, because completeness lies in four. It has been pointed out above that Treviranus mistakenly believed in the triangular solution. Borges cannot have introduced this expression unknowingly given the numerology of his story and his interest, shared with Jung, in the ancient "axiom of Maria," which is the relatedness in alchemical thinking of three and four.

Jung has more to say on this opposition of three's and four's and uses the very same metaphor as do Bruno and Borges. The Argentinian undoubtedly was familiar with both examples. "If one imagines the quaternity as a square divided

into two halves by a diagonal, one gets two triangles whose apices point in opposite directions. One could therefore say metaphorically that if the wholeness symbolized by the quaternity is divided into equal halves, it produces two opposing triads. This simple reflection shows how three can be derived from four, and in the same way the hunter of the captured princess explains how his horse, from being four-legged, became three-legged through having one hoof torn off by the twelve wolves. The three-leggedness is due to an accident, therefore. . ." (p. 235). Jung nowhere cites Bruno in this volume even though Bruno's writings, and in particular *De la Causa,* are replete with figures of this nature.

10 It is interesting that besides containing in his name the symbolical components TRE and VIR, Treviranus has a near namesake in a little known Renaissance alchemist, contemporary, it is thought, with Nicolas de Cusa. Jung mentions Bernardus Trevisanus (1406-1490) author of *De secretissimo philosophorum opere chemico* in 9. II, p. 143. The two names are of distinct families however, one Venetian and the other German.

11 Emir Rodríguez-Monegal "Symbolism in Borges' Work" *Modern Fiction Studies,* 19 (1973), p. 329, writes of the relation of Borges to Jung's writings: "Not only does he admit to having read his works but also adds that he has always been a "great Reader" of his. In contrasting Jung with Freud he observes that 'in Jung you feel a wide and hospitable mind.' His recognition is not without some ironic undertones: he admits he has read Jung 'in the same way as, let us say, I might read Pliny or Frazer's *Golden Bough,* I read it as a kind of mythology, or as a kind of museum or encyclopedia of curious lores.' Thus even when he seems to accept Jung's psychoanalytical approach, he does not accept it to the letter." It would seem that perhaps Monegal and Borges both underestimate the degree to which the Argentinian was a reader of Jung when it might be correct to say that only with difficulty could one overestimate the degree to which he was a student of Jung, not of course for Jung's psychological perceptions, but for his encyclopedic knowledge of the heterodox. In the same issue of *MFS,* a tribute issue for Borges, see Saúl Sosnowski *"The God's Script*—A Kabbalistic Quest," pp. 381-394, to see the parallel interests of Borges and Jung. See also Alazraki, article cited in note 7 above.

12 *Giordano Bruno and the Hermetic Tradition* (Chicago: University of Chicago Press, 1964).

13 See *The Art of Memory* (Chicago: The University of Chicago Press, 1966). Bruno's occult geometrical tradition does not stop at Nicholas de Cusa, but has roots extending into medieval times when the learning of the Greeks was combined with the religious thinking of the Egyptians. Ramón Lull, a Spanish contemporary of Dante, but of a different intellectual tradition, wrote mnemonic works, the last of which, *Ars Magna,* was published in 1305. Lull's place in this study lies in his interest in geometrical figures and numerology as well as the fact that Bruno, also a writer of mnemonic works was a student of those of Lull. Yates has occasion to compare the two hermetic thinkers in *The Art of Memory.* "Lullian Art," she writes, "works with abstraction, reducing even the Names of God to B to K. It is more like a mystical and cosmological geometry and algebra than it is like the *Divine Comedy* or the frescoes of Giotto" (p. 185). Speaking of the figures she continues: "The Art uses only three geometrical figures, the circle, the triangle, and the square, and these have both religious and cosmic significance. The square is the elements; the circle, the heavens; and the triangle, the divinity. I have this statement on Lull's allegory of the Circle, the Square and the Triangle in the *Arbor Scientiae*" (pp. 182-3).

14 *ibid.,* 181.

15 *ibid.,* 178.

16 *ibid.,* 375.