MR2314472 (2008g:01007) 01A40 (01A70 51-03)
Saiber, Arielle (1-BOWD)

★**Giordano Bruno and the geometry of language.**
Literary and Scientific Cultures of Early Modernity.
Ashgate, *Aldershot*, 2005. *xvi*+183 *pp*. $89.95. *ISBN* 0-7546-3321-7

The final paragraph of Arielle Saiber's beautiful book starts (p. 144) by aptly recapitulating its main point: "to show that Bruno's language is rich with a geometric rhetoric that serves both to reflect and reinforce his philosophic thought. Its subsequent point has been to demonstrate that we can further understand Bruno's complex and often convoluted philosophy through familiarizing ourselves with his notions about space and form."

These points are made in six chapters: (1) "Axioms", (2) "Foci", (3) "Lines: *The Candle Bearer*", (4) "Angles: *The Heroic Frenzies*", (5) "Curves: *The Ash Wednesday Supper*", and (6) "The Point"—all titles being at least halfway playful metaphors.

"Axioms" falls into two sections, "Theories of Geometric Space and Form in Literature", *pre-* and *post-*Bruno, respectively. Beyond the impact of geometric theories as such, general conceptions of artistic and geographical space and their reflections in philosophy and worldview are treated under these headings (tacitly including the tension between the notions of "space" and "place"). Here as elsewhere, the substance of the properly mathematical theories that are concerned is taken for granted, and thus mentioned or hinted at rather than explained (but apparently understood in the necessary depth by Saiber; there are a few mistakes, but they mostly look like slips rather than genuine misunderstandings—thus "Second" instead of "First Law of Thermodynamics", p. 83).

"Foci" is divided into "Brunophilia, Brunophobia", treating the reception of Bruno; "Bruno and Geometry"; and "Bruno and Language". "Bruno and Geometry" makes it clear that Bruno was no mathematician, and points out that "he held the mathematics—and especially the mathematicians—of his time in great disdain" (p. 46). He was fond of "suggestive and perplexing geometric diagrams" (p. 48), but these were integrated in stories, not the basis for theorems. His geometry was, one might say, the sister of philosophic numerology and not of theoretical arithmetic, a "language that explicitly served his philosophical project of describing the ineffable and the infinite" (p. 50) as well as the minimally small. His use of the key term "mathesis" was ambiguous—at times it seems to represent mathematics (even trivial mathematics) as it was actually done, at times his own intended revision of mathematics. It is a "unified science of space and form" but also "a convergence of space, form, word, and symbol" (p. 52).

"Bruno and Language" starts by asserting Bruno's "belief that mathematics and natural language are integral parts of each other's system", a bond which he tried consciously to reveal through "figurative, literary language", aiming thereby at the creation of "a semiotics more comprehensive, adaptable and powerful than any other symbolic system constrained to one mode of reference or meaning could ever be" (p. 53). None of the single approaches could in itself be correct; it is rather "that the use of many models together led to the best results".

The following three chapters look at three specific works. "Lines" analyses the comedy *Il*

candelaio, in which three "rectilinear" passions—for a prostitute, for alchemy, and for pedantry—fail and are brought to fall, in a satire "against the kind of thought that moves in only one direction, as though seeing the world with blinders on" (p. 70). In an equally metaphorical way (but illustrated with some of Bruno's emblematic diagrams encompassing multiply broken lines, suggesting that the metaphor is really Bruno's), the comedy is explained to illustrate the adequacy of "multidirectional rectilinearity".

"Angles" takes up the dialogue *De gli eroici furori*, argued to show "a heightened interest in the impossibility of measuring and comprehending the infinite" and to be "a study in angles and vision" though without "a single diagram, chart, wheel, or image" (p. 89). The dialogue aims at finding a way to speak about the unspeakable and see the unseeable—never with full adequacy, since that is impossible, but by "intersecting it at an angle" and being thereby transformed by it (for which reason Bruno is argued on p. 92f not to be a mystic, all his interest in mysticism notwithstanding, since the mystic aims at experiencing *union* with the divine).

"Curves" explores *La cena de le ceneri* for circles, hyperbolas and ellipses. Since "there are no conic sections {Reviewer comment: apart from circles} in Bruno's diagrams, nor does he ever speak about them" (p. 122), the latter two can only be understood metaphorically (Saiber's, not Bruno's, metaphors), through the rhetorical figures hyperbole and ellipsis, both amply and purposefully used in the dialogue. The circle as such does appear copiously both in Bruno's texts and in his diagrams, and using it as a metaphor for the circumlocution may thus reflect Bruno's own thought (even though he, thus Saiber, never makes the link explicit). All three figures of Bruno's "curvilinear rhetoric" are summed up (in Brunian fashion) to speak "around, inside, beyond, incompletely and fully of the *Cena's universale intentione*" (p. 137).

The final two-page chapter suggests (with reference to *De monade* and *Articuli . . . adversus . . . mathematicos atque philosophos*) that "the point as origin, a focus, a means and end is the emblem [. . .] of Bruno's thought as a whole" (p. 143). But this is a paradoxical and very un-mathematical point, which as minimum may be a circle, a sphere, a triangle, or a pyramid.

What stands out in the end is a picture of Bruno as much less of a mathematician than Cusanus (who inspired him) or Caramuel y Lobkowitz (whose maxim "the world is full of Proteus; let us therefore grasp a Proteic pen and sing the praise of Proteus" corresponds well to Bruno's attitude). But he was much more intrepid than both in his poetical use of mathematically inspired ideas in the philosophical transgression of every Cartesian-simple philosophy.

Mathematicians or historians of mathematics who seek "real" mathematics in Saiber's book will be at least as disappointed as those who look for it in Bruno's writings. But those who are interested in understanding how mathematics functions when taken up for the purpose of worldview building (as has happened in recent decades, inter alia, with catastrophes, chaos and fractals) or for understanding what the Baroque mindset (Bruno, indeed, belonged to the early Baroque and *not* to the Renaissance, chronologically as well as mentally—cf. also Saiber, p. 3) will enjoy the book, written as it is in truly Baroque-poetical fashion—probably the most fruitful way Bruno can be approached, through "angles", "intersection" and "circles".

Reviewed by *Jens Høyrup*