DAVID ALBERTSON, *Mathematical Theologies: Nicholas of Cusa and the Legacy of Thierry of Chartres*, Oxford/New York: Oxford University Press 2014 (Oxford Studies in Historical Theology), xii + 483 S., ISBN 978–0–19–998973–7.

Since Pierre Duhem, many commentators have discussed Cusanus' reliance on Thierry of Chartres. Yet David Albertson's *Mathematical Theologies* provides the most ambitious and thorough study of their relationship and its background to date. The first of the book's three sections surveys the development of Pythagorean themes from their beginnings into the early Middle Ages. The second provides a close reading of Thierry's works and related Chartrian texts. The final section offers a detailed analysis of Cusanus' works that highlights his continuing engagement with Chartrian texts and themes. In the end, this thoughtful and provocative book requires us to re-examine Nicholas' speculative career in light of his Pythagorean sources.

In Part One, Albertson analyzes Pythagoreanism as »a mathematizing moment in the history of Platonism« (25). Plato used mathematics as »a stepping stone to assist the mind in its ascent from physics to dialectics« (30) leading to knowledge of the Good. Since mathematics' subordinate, mediating role proved unstable, Plato set up a tension between Arithmos and Logos that was to mark the entire Pythagorean tradition. Speusippus distinguished between the divine One and the monad, »the principle of all number« (36). Reversing Plato, he made the monad and point »the stable terminus for dialectic« (37). Eudorus then derived the monad – and all number – from the theological One. But Nicomachus of Gerasa (c. 70–150 CE) was the first to achieve »an integrated mathematical theology« and *mathesis universalis* (56). Using Aristotle's distinction between multitude (discrete number) and magnitude (continuous extension), he further distinguished absolute and relative number, and spatial extension at rest and in motion. This scheme supports four sciences: number's two forms yield arithmetic and music, and magnitude's yield geometry and astronomy. Nichomachus saw arithmetic as primary, and placed it within the Logos as its pattern for ordering the world – thereby dissolving the tension between Arithmos and Logos (57–58). Although Iamblichus followed Nicomachus' lead, Proclus restored dialectic's primacy and replaced numerical mediation with the henads and the triad of remaining, procession and return (67).

In a Christian context, Augustine's early works set out to reconcile Logos and Arithmos by »theologizing number as a trace of the presence of God's Word (*sapientia*)« (72). In the *Confessions*, however, he changed direction and highlighted not number but »the incarnate Logos as *mediator*« (74). Yet Pythagorean strains remained in Augustine's theology of the Trinity and his description of God as »number without number« (76). Boethius is the central figure for Latin Neopythagoreanism because his *Institutio arithmetica* incorporated Nicomachus's *Introduction to Arithmetic*, and became the West's most influential mathematical text into the sixteenth century. He coined the term 'Quadrivium' for the four mathematical sciences, and left tantalizing hints for integrating mathematics and theology. Yet far from achieving this integration, his writings split along disciplinary lines – the quadrivial commentaries on the one side, and the theological tractates on the other.

So things stood until the twelfth century, when Thierry of Chartres sought to unify the two halves of the Boethian tradition. His early *Tractatus* on Genesis adapted Augustine's mathematical analogy for the Trinity – *unitas*, *aequalitas* and *connexio* (not *concordia*). Linking the Trinity and quadrivium, he declared that »the creation of number *is* the creation of things« (113). As Albertson comments, »Here we finally witness

Neopythagorean henology alive within medieval Christianity« (113). From this starting point, Albertson traces »the development of Thierry's full theology of the quadrivium« through his three later Boethian commentaries (120–121). Key moments were recovering Boethius' reciprocal »folding« – *complicatio* and *explicatio* – and applying it to four modes of necessity and possibility: *necessitas absoluta* or divine unity unfolds in *necessitas complexionis*, the order of created things; and *possibilitas determinata*, the actual world, unfolds *possibilitas absoluta* or prime matter (125–128). These modes ground the sciences so that theology considers divine necessity as absolute, mathematics considers »the forms of things in their truth«, and physics considers both modes of possibility (128). The most novel and controversial mode is the second, *necessitas connexionis* or »necessity of enfolding« (132). Distinct from the necessity of the absolute One, it »inheres in the seriality of number unfolded from that One« (133). The *necessitas connexionis* places number within God, and orders the whole of created actuality. It thus became Thierry's mediating principle, but raised theological problems: how to integrate it with the Word or Wisdom, and how to explain »the status of plural but eternal exemplary forms« within it (139).

These issues haunted Thierry's legacy, and led readers to modify and in one case to reject his scheme. The anonymous twelfth-century *De septem septensis* and Clarembald of Arras pay homage to Thierry, but alter his teaching. Whereas Thierry stressed God's immanence throughout the modes and creation, *Septem* »lifted the transcendent divine principle above the fray of the cosmic principles of the *physici*« (149). Clarembald recast the modes within an Augustinian framework of the Word and seminal reasons, and described »a causal chain descending from the first mode« (151–152). Yet Thierry made neither of these moves, and emphasized reciprocal folding, not ontological subordination. A third commentary is the anonymous *Fundamentum naturae* discovered by Maarten Hoenen.[1] This late medieval treatise has been discussed in Cusanus circles because substantial excerpts from it appear in *De docta ignorantia*. But Albertson first analyzes the treatise for what it is: an Aristotelian critique of Thierry's modal theory. *Fundamentum* uses the notion of *contractio* or delimitation to drive a wedge between God as the first, absolute mode and the remaining three contracted modes. By eliminating mediation between the absolute and the contracted, the author rejects Thierry's second mode. He argues that *necessitas complexionis* is not a subordinate Platonic *mens* or world-soul; rather, it inadequately refers to »the Word and the Son equal to the Father in divinity, [which] is called *Logos* or *ratio*, since it is the *ratio* of all things« (161). Once again Logos triumphs over Arithmos. While *Fundamentum* presents a more polished and systematic critique of Thierry than either *Septem* or Clarembald, all three distort Thierry's project. As Albertson comments:

> »Where Thierry searched for divine activity within the fabric of the created order – in causes, in numbers, in the very structure of necessity – his later readers rearranged (or in the case of *Fundamentum*, disassembled) the balanced structure of his mathematical theology in order to elevate God above any need for Platonic mediation whatever« (165).

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1 MAARTEN J. F. M. HOENEN, ›Ista prius inaudita‹. Eine neuentdeckte Vorlage der *Docta Ignorantia* und ihre Bedeutung für die frühe Philosophie des Nikolaus von Kues, in: Medioevo. Revista di storia della filosofia medievale 21 (1995) 375–476.

Then Cusanus read Thierry and his commentators in radically new ways. When Nicholas praises »a commentator on Boethius' *De trinitate* – easily the most brilliant man of all those whom I have read« (*Apologia*, h II, n. 35), he in fact praises *Fundamentum* and »the whole set of Chartrian manuscripts in his possession« (177). Assuming a single author for these anonymous and inconsistent works, Cusanus became

> »an editor with imperfect knowledge, weaving his sources together in *De docta ignorantia*…, experimenting with Thierry's concepts well beyond their original context, and often radically transforming them toward new intellectual ends« (175).

The first two Books share a parallel structure where unattributed, verbatim quotes precede Nicholas' development of their themes. Book I cites Chartrian texts on the arithmetical Trinity, and – as Hoenen discovered – Book II cites *Fundamentum* on the four modes (179). Albertson adds that *Fundamentum* also provides the concepts of the maximum and contraction around which Books I and II revolve (179). Yet Nicholas' editing and elaboration are anything but slavish. Whereas *Fundamentum* ignored Thierry's mathematics, Cusanus mathematizes contraction by linking it to *aequalitas*. He thereby alters both contraction and equality. *Fundamentum*'s contracted universe becomes a numerical series, and equality – which is manifest imperfectly throughout this series – takes on a new, negative tone. For quadrivial knowledge of things lacks precision, and thus obliquely or negatively reflects its origin in the absolute equality of the divine Word. Nicholas' turn to *aequalitas* also enables him to view Thierry's second mode, *necessitas complexionis*, as »an instrument of contraction implemented by the Word as *aequalitas*« (192). This re-connection of the second mode to the Word leads into *De docta ignorantia*'s major breakthrough: the Christology of Book III. With ingenious editorial skill, Cusanus unites Thierry's *aequalitas essendi* and *Fundamentum*'s contraction. He defines the absolute maximum »as the *aequalitas* absent from the contracted universe«, and describes the contracted maximum in terms of *complicatio*. The Christological turn then follows: the union of God and humanity occurs »as if the universal *contraction* of all things were hypostatically and personally united with the *equality* of being of all things« (194; citing *De docta ign.* III, 3: n. 202). As Albertson comments, »The Incarnation becomes the medium that connects the absolute and the contracted, the first mode and the third mode« of Thierry (198). We cannot overstate Cusanus' achievement here: ever since Augustine the Incarnation had been the major obstacle to a mathematical Christian theology, but in *De docta ignorantia*, the incarnate Word completes and unifies Cusanus' Neopythagorean project.

Nicholas revisited his Chartrian sources and themes in later works. Albertson traces these developments in rich detail, but here a few key points will suggest this complex history. *De coniecturis* marks out an alternative to *De docta ignorantia*, as it »exalts number as the prime mediator, not the incarnate Word – a synthesis of Arithmos in lieu of Logos« (211). Nicholas transforms Thierry's modes into four 'unities' following an arithmetic progression: God as 1, the source of number; intellect as 10; reason as 100; and sense as 1,000. The second unity functions like Thierry's *necessitas complexionis*, since it »uniquely mediates divine unity to the lesser planes of number, and it does so as the decade without root« (214). Yet Cusanus also downgrades mathematics to the third unity of reason, and thereby weakens its theological power. Throughout the 1440s, Nicholas – like Boethius – split his theological and mathematical projects, developing his Christology in *De filiatione dei* (1445) and probing the *quadratura circuli* in geometrical works. But *Idiota de mente* (1450) brings these projects together in a new way. Cusanus

now views Thierry's »four modes as an account of the human mind, not as universal ontology or as Platonist temptation« (230). For mind does not *unfold* God's unity into a semi-divine reality, but rather is itself »the primary *image* of divine Enfolding, which enfolds all images of enfolding« (231; citing *De mente* 9: n. 122). As such, it becomes a »living number« which measures itself and all things, and mirrors God's self-measuring in the Trinity. Thanks to »the radical intimacy of divine Number hidden within human number« (241), theology becomes »the ecstasy of mathematical thinking« (239). *De theologicis complementis* (1453) goes further as Cusanus translates the *quadratura circuli* into theology. He »portrays God as the geometer par excellence« (245) whose self-measure is »the Word as an infinite Angle« (247). Echoing Augustine, he also names God as »the Number of all things, [which] is Number without discrete quantity« (247; citing De theol. compl.: n. 12, lin. 58–59). Since the divine Angle and Number ground magnitude and multitude, they »establish the foundations of the quadrivium« (247). Nicholas adds that God's self-measuring is a self-seeing that creates all things. For »God's arithmetic enumerates the world and God's geometry spatializes the world, but the primary event is God's self-seeing in the Word, a self-measure that visualizes the world into being« (259). While this sets the stage for *De visione Dei*, *Complementum*'s theology lacks one crucial piece: the Incarnation. But in *De ludo globi* (1462–63) Cusanus puts Christ at the center of his symbolic game and its meanings. As the central point of nine circles, Christ is the goal towards which the game's players roll a ball whose hollowed out section causes it to wobble. The gameboard and the ball's irregular motion suggest both the difficulties of becoming Christiform and the texture of physical reality. Christ is now the center of the threefold world of God, humanity and the universe. Indeed, he becomes the infinite »sphere in which the centers of Creator and cosmos are juxtaposed and united« (264). Albertson comments:

> »Only in *De ludo globi* does Cusanus enunciate what he seems to have intuited from the start, namely that the overcoming of every opposition in the Incarnation grounds the mathematical order of the cosmos as it is rendered visible in the quadrivium« (276).

Mathematical Theologies presents a compelling narrative of Pythagorean thought from antiquity to Cusanus. Albertson discusses the early tradition up to Boethius with clarity and grace. He then presents an illuminating account of Thierry of Chartres and his heirs by reading Thierry's writings as stages in his developing quadrivial theology, and tracing their later reception. Here Albertson shows how *Fundamentum naturae*'s critique complicates Thierry's legacy. But the book's main achievement comes in the pages that masterfully trace Cusanus' probing, creative reading and editing of Chartrian texts from *De docta ignorantia* through *De ludo globi*. By showing that Nicholas' debt to Thierry and his heirs is deep and pervasive, the book makes us see his speculative project in powerful new ways. Yet it is not without controversy. Albertson uses the »genetic method« of Kurt Flasch, but his focus on Nicholas' engagement with Thierry and *Fundamentum* yields different conclusions.[2] For Flasch, Cusanus moves from theology into an autonomous philosophy; but for Albertson, he integrates philosophy and the quadrivium with a theological drive throughout his career. We can agree with Albertson here, but still ask how Nicholas' mathematical theology fits within his works. For example, if Chartrian sources »provide the indispensable architecture« of *De docta ignorantia* (180),

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2 ALBERTSON, Mathematical Theologies, 18–20, 227, 385–386. See KURT FLASCH, Nikolaus von Kues: Geschichte einer Entwicklung, Franfurt a.M. 1998.

they rarely discuss the infinite. Yet Cusanus builds the work around the infinity of the Maximum, the universe and Christ. How do his Pythagorean sources inform this infinitizing framework, and how does Cusanus adapt them to work within it? Here we may glimpse »the cardinal's larger strategy in *De docta ignorantia* of connecting the Chartrian theology of the quadrivium with the Ps.-Dionysian theology of negation« (176). Albertson adds other sources as well, including Heymeric de Campo, Bonaventure and Proclus, and the list grew as Nicholas continued to read and adapt new materials in his later works. Our task is to see how he weaves the many strands of his readings into the novel fabric of his own works. *Mathematical Theologies*' magisterial account of the Chartrian threads woven through Nicholas' writings is essential to this larger project. Finally, Albertson proposes a much wider agenda when he challenges the assumption that *mathesis universalis* is a hallmark of modernity that requires separation from theology. Since Thierry and Cusanus are neither modern nor secular thinkers, exploring their mathematical theologies can open the borders between medieval and modern, and lead us to rethink the nexus of theology, mathematics and the sciences.

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Aleksej Fedorowich Losev, Nikolaus von Kues in Übersetzungen und Kommentaren, 2 Bde., hg. von Elena A. Takho-Godi, Moskau: Izdatel'skij dom Jask 2016, 728 u. 520 S. [Aleksej Fedorovic Losev: Nikolaj Kuzanskij v perevodach i kommentarijach, v 2-x tomax, Elena A. Taxo-Godi (sost.), Moskva: Izdatel'skij dom Jask 2016, ss. 728; 520].

In der Einleitung und im Vorwort (Bd. 1, S. 11–13; 14–56) stellt Elena Takho-Godi, Leiterin der Abteilung für Aleksej Losevs Nachlasserforschung in der Bibliothek »Haus A. F. Losev« in Moskau und Herausgeberin der vorliegenden Bände, den Lebenslauf Losevs, seine Stellungnahme zu der Philosophie des Nikolaus von Kues, den Kontext, in dem Losev sie betrachtet, und die Geschichte der Übersetzungspublikationen und der Entdeckungen nichtpublizierter Texte und Kommentare dar, von denen die letzten im Laufe des 21. Jahrhunderts erfolgten. Die Editionsleistung von Takho-Godi ist hoch zu schätzen. Die Texte und die Übersetzungen Losevs sind sehr sorgfältig herausgegeben. In den *Kommentaren* von Takho-Godi zu den beiden Bänden (Bd. 2, S. 435–519) und in den Fußnoten zu den einzelnen Texten liegt die Betonung auf der textologischen Arbeit und deren Ergebnissen. Neben der ausführlichen und präzisen Information über die einzelnen Handschriften und Publikationen und der genuinen Anordnung der Texte werden auch darauf bezogene Personen, Daten, Quellen und Realien ertragreich präsentiert, wodurch ein dichter Kontext der einzelnen Schriften und des Werks Losevs herausgearbeitet wird.

Aleksej Fedorowich Losev (22. September 1893–24. Mai 1988) war der bedeutendste russische Philosoph des 20. Jahrhunderts. Zu seinen Schülern zählen mehrere prominente Figuren der nichtmarxistischen Strömungen in der russischen Kultur. Sein Einfluss in der zweiten Hälfte des Jahrhunderts – sowohl in Russland, als auch unter den Russisch verstehenden Denkern überhaupt – ist schwer zu überschätzen.