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## THE HISTORY OF RUSSELL'S PYTHAGOREAN MYSTICISM

STEFAN ANDERSSON  
Theology and Religious Studies / University of Lund  
S-223 62, Lund, Sweden  
SANDERSS@CHASS.UTORONTO.CA

Ray Monk. *Russell: Mathematics: Dreams and Nightmares*. (The Great Philosophers.) London: Phoenix, 1997. Paperbound. Pp. vi, 58. £2.00. CDN\$4.99.

Ray Monk's short book on Russell is number seven in a series of books called *The Great Philosophers*. Since there is neither a publisher's foreword nor an author's preface, the only suggestion concerning the content is the subtitle *Mathematics: Dreams and Nightmares*. For those familiar with Monk's earlier work on Wittgenstein and Russell and his understanding of the relationship between them, it will come as no surprise that Monk has chosen this theme for his little book.

His essay has two parts: "The Pythagorean Dream" and "The Mathematician's Nightmare". In the first part Monk describes the content, origin, and development of the Pythagorean dream up to Russell's discovery of his paradox. The second part is devoted to showing how the dream turned into a nightmare, mainly due to Wittgenstein's influence.

Monk traces the origin of the dream back to an experience that Russell had at the age of eleven, when his older brother Frank gave him lessons in geometry. Russell described the experience as being "as dazzling as first love" and went on to say that from that moment until he finished *Principia Mathematica*, written with his former teacher Alfred North Whitehead, "mathematics was my chief interest, and my chief source of happiness." What made geometry so attractive to Russell was that it purported to provide him and everyone else with knowledge that was so certain that no reasonable man could question its truth. Certainty was the goal and mathematics the means, but the study of mathematics and the contemplation of its objects and eternal truths became an end in itself. For a period of Russell's life it was more than a dream or a source of happiness; it developed into Russell's personal religion, or "a form of mysticism" according to Monk.

In several of his autobiographical writings Russell confessed that he had hoped the study of philosophy would provide some satisfaction for his religious impulses. In "Why I Took to Philosophy" (1955) he stated that:

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For a time I found satisfaction in a doctrine derived, with modification, from Plato. According to Plato's doctrine, which I accepted only in a watered-down form, there is an unchanging timeless world of ideas of which the world presented to our senses is an imperfect copy. Mathematics, according to this doctrine, deals with the world of ideas and has in consequence an exactness and perfection which is absent from the everyday world. This kind of mathematical mysticism, which Plato derived from Pythagoras, appealed to me. (*PfM*, p. 22)

This passage does not really convey just how much this "mathematical mysticism", or "Pythagorean mysticism" as Monk also calls it, once appealed to Russell. In "The Study of Mathematics" and other writings, as well as his letters written in the first decade of the century, we find more passionate confessions of his faith—or "personal religion" or "Pythagorean mysticism"—call it what you will. The fact is that Russell's fascination with mathematics and his hope of proving that all of pure mathematics can be deduced from a small number of logical definitions and axioms—his logicism—was for a period mixed up with his religious yearnings and impulses.

I have argued for this thesis in my doctoral dissertation, *In Quest of Certainty*.<sup>1</sup> Since my thesis ends with 1903, I did not discuss his attempts to solve the paradox. Nor, for the same reason, did I discuss Wittgenstein's influence on his thinking or address the question why Wittgenstein's definition of "logic" as consisting of tautologies supposedly led Russell to a linguistic interpretation of mathematics, which shattered his earlier Platonic or Pythagorean view of the nature of mathematics. At the time, I had done some research on his later development, so I had an idea about why he gave up his mathematical mysticism and when it happened. I will return to this in discussing the second part of Monk's book.

I want now to turn to a brief discussion of the definition of "mysticism", since this word plays an important part in Monk's book, although he does not discuss possible alternative meanings. I could have used "mysticism and logic" instead of "religion and mathematics" in the title of my thesis, but I decided to avoid the word "mysticism", because I did not want to get sidetracked into a discussion of the meaning of "mysticism" and its relation to the meaning of "religion". Is mysticism a deepened form of religion, or do the two words refer to different phenomena? Or are they related in some other way? Monk does not address these questions. Russell claimed to have been the subject of two mystical experiences: the most important of them took place in February 1901—which he also referred to as his "first conversion"—and the other ten years later during the early stages of his love affair

<sup>1</sup> *In Quest of Certainty: Bertrand Russell's Search for Certainty in Religion and Mathematics up to "The Principles of Mathematics" (1903)* (Stockholm: Almqvist & Wiksell International, 1994).

with Lady Ottoline Morrell. I have not discovered any direct references to the second experience in Russell's published works, but he mentioned it in his letters to Lady Ottoline and to his friend, Goldsworthy Lowes Dickinson. Both of his experiences fit William James' definition of a mystical experience,<sup>2</sup> but one or even two mystical experiences do not necessarily turn a person into a mystic. At the time I was not aware of any definition of "mysticism" that would easily fit Russell's case. I also found Russell's usage of the concept both vague and ambiguous, so I avoided being drawn into a discussion of mysticism.

Some time later, I realized that I had been introduced to a definition of "mysticism" proposed by the Swedish historian of religion (and Archbishop of Sweden) Nathan Söderblom which threw some light on Russell's case. Söderblom distinguished between "personality mysticism" and "infinity mysticism".<sup>3</sup> The distinguishing factor is the conception the mystic has of God. Is God understood as a person of some kind, or is God conceived of as an impersonal principle? Söderblom claimed that his distinction was based on information he had collected as an historian of religion, but he was obliged to admit that most mystics exhibited both attitudes. It turned out that most infinity mystics are to be found within the Greek and Eastern religious traditions and most personality mystics among Jews and Christians. Söderblom claimed that his distinction was meant to be purely descriptive and not to involve any value judgments, but it is pretty clear which form of mysticism appealed most to Söderblom's Protestant heart. Martin Luther was for Söderblom the paradigmatic example of a personality mystic. Söderblom's description of "infinity mysticism" reminded me a lot of what Russell had to say about God and the world beyond the reach of our normal senses. Wittgenstein, too, fit the description of a personality mystic, with his preoccupation with ethical questions. It made sense to associate Russell with Greek and Eastern mystical traditions and to place Wittgenstein in the Judeo-Christian tradition.

In the light of this distinction, it is easier to understand why Wittgenstein reacted so strongly against Russell's attempts before the war to express his mystical insights, and why Russell said that when Wittgenstein returned from the war, he had turned into a "total mystic" and that it was difficult to understand what he was talking about. Around 1912 Russell tried to formulate his Platonic mysticism and to convince Lady Ottoline that what she called

<sup>2</sup> "Mysticism" chapter, *The Varieties of Religious Experience*. James mentions four characteristics of a mystical experience; ineffability, noetic quality, transiency, and passivity.

<sup>3</sup> Söderblom wrote about personality and infinity mysticism for the first time in *Uppenbarelsereligion [Revealed Religion]* (1903); 2nd ed. (1930).

"God" was what he referred to as "the Infinite". But he probably underestimated the difference. Russell's god was impersonal and indifferent to human desires, while Lady Ottoline and Wittgenstein's gods were more like the God of Abraham, Isaac and Jacob. A comparison of Russell and Wittgenstein's views of mysticism and ethics would make an interesting project, and some of the work has already been done by McGuinness, Blackwell, Monk, and others. This, however, is neither the time nor the place to undertake such an enterprise, but before returning to Russell's "Pythagorean mysticism" I want to say a few words about another aspect of Russell's mysticism.

If Pythagoras was one source of inspiration for Russell's mysticism, Spinoza was another, and of equal importance. There is not much room for love in mathematical mysticism, and the intellectual love of God was an indispensable element of Russell's mysticism, as Blackwell has shown in his book *The Spinozistic Ethics of Bertrand Russell*. In *What I Believe* (1925) Russell says that "The good life is one inspired by love and guided by knowledge" (*BW*, p. 372). In a letter to Lady Ottoline, Russell discussed Spinoza and said: "He thinks strife the fundamental evil, and reason informed by love the cure."<sup>4</sup> That sounds very much like Russell's philosophy of the good life and reflects two elements in his mysticism: the search for certainty and love, if we read "indubitable knowledge" for "certainty".

In his review of my thesis Nicholas Griffin suggested that Russell required "not so much certainty, as an object worthy of veneration. He was persuaded in the end that no such object existed, but the love of it was the love of his life." Griffin then went on to quote from Russell's autobiography: "What Spinoza calls 'the intellectual love of God' has seemed to me the best thing to live by, but I have not had even the somewhat distant God that Spinoza allowed himself to whom to attach my intellectual love. I have loved a ghost." According to Griffin three objects attracted Russell's intellectual love up until 1903—the Christian God, the Hegelian Absolute, and the Platonic realm of mathematics—but Griffin has forgotten Spinoza's God. Russell read Spinoza for the first time early in 1894, and, from that time onward, he (particularly his ethical views) remained an important influence in Russell's life. I am not sure where Griffin would place Russell's version of Spinoza's God chronologically, but, rather than placing it after the Platonic realm, I would claim that Spinoza's God came into his life at about the same time as the Hegelian Absolute and outlived it, as well as the Platonic realm, as an object worthy of veneration. I see no conflict between searching for certainty

<sup>4</sup> No. 82, 24 May 1911.

<sup>5</sup> *Svensk Teologisk Kvartalskrift*, 71 (1995): 138.

and searching for an object worthy of veneration. Russell's search for certainty and his struggles to find a loving attitude to the universe as a whole are compatible, and both elements are found in Spinoza. The question to be answered, however, is how to reconcile the Spinozistic element in Russell's mysticism with the Pythagorean element. Exactly when his infatuation with Pythagorean mysticism ended is difficult to say, because Russell never provided us with an exact date. In "My Mental Development" (1944) he wrote: "When I was very young I hoped to find religious satisfaction in philosophy; even after I had abandoned Hegel, the eternal Platonic world gave me something non-human to admire. I thought of mathematics with reverence, and suffered when Wittgenstein led me to regard it as nothing but tautologies" (*Papers* II: 17).

After Monk introduces Pythagorean mysticism and explains the importance of the discovery of incommensurables, he proceeds to discuss three mathematical concepts that caused mathematicians and philosophers great dismay, since they seemed inherently paradoxical and difficult to define. The three concepts are infinity, the infinitesimal, and continuity. Monk also discusses the rise of non-Euclidean geometries, which according to him helped to undermine Russell's hope of finding certain knowledge in mathematics. Russell's brief flirtation with Hegel's philosophy, which he was induced to undertake through J. M. E. McTaggart's influence, is treated next. For McTaggart, according to Monk, logic and religion meet, and he quotes McTaggart as stating that "all true philosophy must be mystical, not indeed in its methods, but in its final conclusions" (p. 19). Monk claims that for a short period Russell was inspired by "this peculiar form of mysticism". (This remark raises the question of how many forms of mysticism there are in Monk's view.) Russell abandoned his neo-Hegelianism and his faith in the "dialectic of the sciences" after he became acquainted with the work of Weierstrass, Dedekind and Cantor. Monk argues that they played a more important part in Russell's conversion from idealism and the use of the synthetic method to realism and the adoption of the analytic method than Moore did. This conversion, Monk thinks, marked a major division in his thinking and it "enabled Russell to adopt a very robust form of Pythagoreanism: there really is a mathematical realm, and its truths are indeed discoverable through reason alone" (p. 22).

Russell's hopes of finding a solid foundation for mathematics were greatly encouraged when he was introduced to the work of the Italian mathematician Giuseppe Peano, whom he met in 1900. Peano had shown that arithmetic could be axiomatized by five basic propositions, involving three undefined terms—zero, number and successor. Russell hoped that he could further reduce the number of basic notions by defining Peano's three in terms of the

concept of class. If this could be done, it would prove that his logicism was true. This is the central idea advanced in *The Principles of Mathematics*. But, at the height of his enthusiasm, he discovered that the ordinary concept of class led directly to his paradox. The book came out without any definite solution to the paradox, but he still hoped he would be able to find one eventually. At this point the first part ends.

Monk's main target at the beginning of the second part is Russell's attempts to solve the paradox by advancing various theories of types. With the help of Whitehead, Russell embarked on the project of reducing mathematics to logic. "Eventually" Monk states, "this collaboration produced the massive—and almost completely unreadable—classic three-volume work *Principia Mathematica*, which was published from 1909 to 1913" (p. 37). Apart from the fact that the three volumes were published in 1910, 1912 and 1913, I wonder what Monk means by "almost completely unreadable". He does go on to assert that Russell and Whitehead "created a system of quite monstrous complexity", and still later, "having eliminated numbers, classes, denoting phrases and propositions, Russell was left with a horribly complicated 'logically proper language', in which even the simplest mathematical formula would be expressed in an almost incomprehensibly convoluted manner" (p. 48). Classes were replaced by propositional functions which make the system of logic "one of quite dizzying complexity". It is unclear why Monk uses such negative words to describe *Principia Mathematica*. I have personally only read the introduction to the book and there was much I did not understand, but I feel sure there are people who are capable of reading all of it and seeing its strengths and weaknesses. One weakness that Russell carried with him from *The Principles of Mathematics* was the lack of a clear definition of "logic". This was a problem that Russell failed to solve and that he gladly handed over to Wittgenstein, but that does not necessarily make *Principia* the incomprehensible piece of confusion that Monk seems to think it is.

At this point Wittgenstein enters Monk's account. "By 1913, Russell became persuaded by his brilliant young student, Ludwig Wittgenstein, that there were no such things as logical objects, and yet he still insisted that there *was* such a thing as logical knowledge" (p. 51). Is this a totally accurate description of the situation? I do not think so, and Monk supplies the evidence to show that in the *Introduction to Mathematical Philosophy* (not ... *Logic* as Monk has it), written in 1918, Russell did believe that we can have knowledge by acquaintance of logical objects or logical forms, a view that he explains more fully in his lecture series, "The Philosophy of Logical Atomism", delivered in the same year.

In *My Philosophical Development* (1959) Russell devotes a whole chapter to the impact of Wittgenstein and says that it came in two waves. They met in

Cambridge in the fall of 1911 and soon developed an intense relationship that was beneficial to them both at the start. In 1913 Russell was working on his theory of knowledge, which Wittgenstein criticized so severely that Russell almost lost faith in his capacity as a philosopher. Before Wittgenstein left for Norway in the fall of 1913, Russell succeeded in getting some writing out of him—the "Notes on Logic", which Russell used in his 1914 Harvard lectures.

The second wave of influence came after the war when Wittgenstein sent Russell the manuscript of his *Tractatus*. They met in December 1919 to discuss the book and Russell helped Wittgenstein get it published by supplying an introduction that Wittgenstein disliked. It was also through the support of Russell that Wittgenstein later was able to return to Cambridge and receive his Ph.D. His later doctrines, in *Philosophical Investigations* and other posthumous writings, had no influence on Russell. In his chapter on Wittgenstein in *My Philosophical Development*, Russell says that his doctrines "influenced me profoundly. I have come to think that on many points I went too far in agreeing with him" (p. 112). This should remind us of the necessity to distinguish between the short-term impact and the long-term impact of his influence. In the *Tractatus* Wittgenstein maintained that logic consists wholly of tautologies. Russell commented: "I think he is right in this, although I did not think so until I read what he had to say on the subject" (p. 119). What he did not accept was Wittgenstein's distinction between what can be said and what can only be shown. This Russell referred to as "a curious kind of logical mysticism" (p. 114). He does not say that the acceptance of the view that logic consists of tautologies led him either to abandon his belief in logicism or to a linguistic interpretation of logic and mathematics.

Monk claims that Russell gave up the view that there are logical objects after reading the *Tractatus* and concluded that "only an understanding of language is necessary in order to know a proposition of logic."<sup>6</sup> The "retreat from Pythagoras" was, according to Monk, complete not long before Gödel published his famous article in 1931, showing that Russell's hope of proving his "Pythagorean Dream" was an illusion. Russell did not mention Gödel's proof in the new introduction to *The Principles of Mathematics* in 1937. What he said about logical constants was that "if we are to be able to say anything definite about them, [they] must be treated as part of the language, not as part of what the language talks about. In this way, *logic becomes much more linguistic* than I believed it to be at the time when I wrote the *Principles*" (p. xi [1992 reprint, p. xv], my italics). This does not support Monk's claim

<sup>6</sup> Quoted by Monk, p. 52, from Russell's 1920 review of Joachim's *Immediate Experience and Mediation* (*Papers* 9: 405).

that the retreat from Pythagorean realism was completed in the 1920s. What might appear as a clear acceptance of a linguistic interpretation of mathematics and logic lies in two essays Russell wrote in 1942, on how to become a mathematician and a logician (*Papers* 10: see pp. 580, 558). Yet Russell certainly continued to believe that logic and mathematics are powerful and useful tools for reasoning, which is more than the consistent use of arbitrarily defined words.

Then Gödel, a Platonic realist, wrote an article about Russell's mathematical logic for the Schilpp volume, but Russell received it too late to respond to it, which Monk does not mention. Russell's silence on Gödel in 1937 and 1944 might be interpreted as a way of hiding the fact that Russell's hopes of showing that mathematics can be reduced to logic had turned into a linguistic illusion. This "cover-up interpretation" can further be supported by the fact that Russell wrote an essay in 1950 with the title "Is Mathematics Purely Linguistic?", which he left unpublished. Russell ends this essay: "All the propositions of mathematics and logic are assertions as to the correct use of a certain small number of words. This conclusion, if valid, may be regarded as an epitaph on Pythagoras" (*Papers* 11: 362). Note the reservation "if valid". It shows that he was far from totally convinced of the soundness of the linguistic interpretation. Monk does not mention any of this, but just supports his claim by quoting "A Mathematician's Nightmare" written at about the same time, and concludes that "the 'Pythagorean Dream', Russell finally came to think, had been nothing but a nightmare all along" (p. 58).

When Monk uses "finally" to mean around 1950, we should remember that Russell had another twenty years to think about the matter. If Monk had paid more attention to Russell's remarks about Wittgenstein and Gödel in *My Philosophical Development*, written nine years later, and what he wrote about Gödel in "Addendum to My 'Reply to Criticisms'", written in 1965 but not published until 1971, he would have realized that Russell never really gave up his faith in the soundness of the underlying principles of *Principia Mathematica*. In *My Philosophical Development* Russell bore witness to his unshaken faith in type theory: "It disposes of Wittgenstein's mysticism and, I think, also of the newer puzzles presented by Gödel" (p. 114). In the chapter, "The Retreat from Pythagoras", Russell maintained he had come to believe that mathematics consists of tautologies: "I fear that, to a mind of sufficient intellectual power, the whole of mathematics would appear trivial, as trivial as the statement that a four-footed animal is an animal.... I cannot any longer find any mystical satisfaction in the contemplation of mathematical truth" (pp. 211–12). Monk uses this quotation (p. 53) to support his thesis that Russell replaced his Pythagorean mysticism with a linguistic understanding of logic and mathematics, but does it really support this interpretation?

In his "Addendum" Russell states that he found "a sort of solution of the contradictions which I embodied in *Principia Mathematica*, but the solution was not one with which a logician could feel comfortable. Others have found other solutions, but no one, so far, has found one which is wholly satisfying" (*Papers* 11: 64–5). What Russell asserted about the effects of Gödel's discoveries on *PM* showed that at the age of 93 he was still capable of defending its underlying ideas, and there is not a word about being influenced by Wittgenstein to adopt a linguistic interpretation of mathematics.

Most of the content of this little book can be found in the first volume of Monk's biography of Russell, *Bertrand Russell: the Spirit of Solitude*, which takes his life up to 1921. There is no reference there to "Pythagorean mysticism", but Monk claims that by 1919 the "retreat from Pythagoras" was completed and his belief in the reality of mathematics had been replaced by a linguistic understanding of logic, which turned both logic and mathematics into something trivial (p. 594). There can be no doubt that at different times Russell thought the arguments in favour of a linguistic interpretation of logic and mathematics convincing, but did he ever adopt this view fully? In a letter to C. W. K. Mundle, written in December 1968, Russell stated:

I found Wittgenstein's *Tractatus* very earnest, and this implied a genuine philosophical outlook in its author. I did not appreciate that his work implied a linguistic philosophy. When I did, we parted company.... I felt a violent repulsion to the suggestion that "all mathematics is tautology". I came to believe this, but I did not like it. I thought that mathematics was a splendid edifice, but this shows that it was built on sand.<sup>7</sup>

Does this letter support the view that it was due to Wittgenstein that Russell woke up from his "Pythagorean Dream"? Not necessarily. The simple truth is that Russell had mixed feelings about Wittgenstein's influence on his views of mathematics and that depending on the context and his mood at the time, he gave different descriptions that can be interpreted in more than one way.

I find it difficult to understand why Monk chose to deal with such interesting topics as Russell's "Pythagorean mysticism" and Wittgenstein's influence on Russell's views on logic and mathematics in less than 60 short pages, and in such an imprecise manner. We will probably hear more about his claim in the second volume of his life of Russell. Perhaps he will be able to supply more convincing evidence for his theories in that book.<sup>8</sup>

<sup>7</sup> Mundle, *A Critique of Linguistic Philosophy*, 2d ed. (London: Glover & Blair, 1979), p. 181n.

<sup>8</sup> I want to thank the Craaford Foundation in Sweden for financial support, John Slater for improving my English and Nicholas Griffin for supplying me with valuable criticism.