'One of the Great Intellects of His Time'

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Frank Ramsey (1903–1930): A Sister's Memoir
by Margaret Paul, with a foreword by Brian McGuinness and an afterword by Gabriele Taylor
Cambridgeshire: Smith-Gordon, 304 pp., £20.00 (paper)

"Well, God has arrived. I met him on the 5:15 train."

Thus, in the New Year of 1929, was Ludwig Wittgenstein's return to Cambridge announced by John Maynard Keynes in a letter to his wife, Lydia Lopokova. Wittgenstein had previously been at Cambridge before World War I as a student of Bertrand Russell, but had acquired his godlike status through the publication after the war of his first and only book, *Tractatus Logico-Philosophicus*, which was very quickly recognized as a work of genius by philosophers in both Cambridge and his home city of Vienna. Wittgenstein himself was initially convinced that it provided definitive solutions to all the problems of philosophy, and accordingly gave up philosophy in favor of schoolteaching. In 1929, however, he returned to Cambridge to think again about philosophical problems, having become convinced that his book did not, in fact, solve them once and for all.

What drew him back to Cambridge was not the prospect of working again with Russell, who by this time (having been stripped of his fellowship at Trinity College, Cambridge, because of his opposition to World War I) was a freelance journalist, a political activist, and only intermittently a philosopher. Rather, it was the opportunity of working with Frank Ramsey, the man who had persuaded him of the flaws in the *Tractatus*. Most significantly, Ramsey had shown that the account Wittgenstein gives of the nature of logic in the *Tractatus* could not be entirely correct.
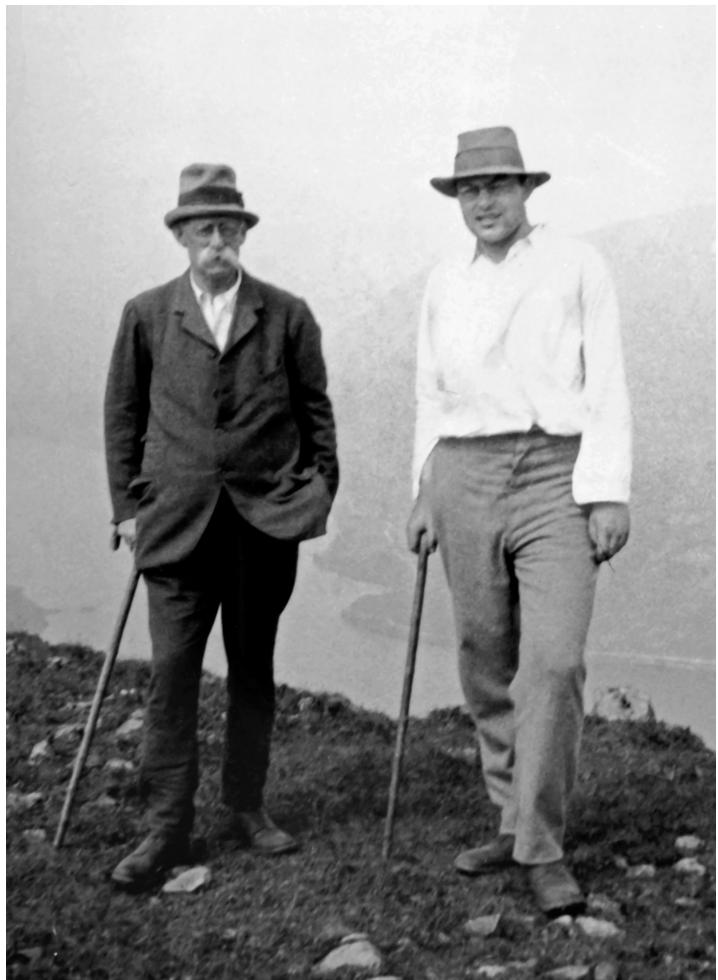
Stephen Burch

Frank Ramsey (right), with his mathematician father, Arthur Ramsey, Lake District, England, 1925

Wittgenstein's belief that he had solved all the problems of philosophy rested on two other beliefs: (1) that those problems arose out of a "misunderstanding of the logic of our language" and (2) that in the *Tractatus* he had corrected those misunderstandings. Ramsey pointed out that there was something fundamentally amiss with Wittgenstein's own view of logic, central to which was the insistence that logic is linguistic. Logical relations, that is, hold not between the things or the facts of the world, but rather between propositions. For instance, from the two propositions "If it is raining, the streets are wet" and "It is raining," we can logically infer a third proposition, "The streets are wet." That is to say, if the first two propositions are true, the third is *necessarily* true. The third *follows logically* from the other two.

According to Wittgenstein, *all* logic is like this; if there were no language, there would be no logic. And, if there were no logic, there would be no necessity, since *all* necessity is logical necessity. There is no such thing as a necessary *fact*. Thus, what Wittgenstein calls an "atomic proposition," i.e., one that states a simple fact about the world, cannot be necessarily true or false; it has to be *contingently* true or false. It follows that the truth or falsity of one atomic proposition cannot follow from the truth or falsity of others. (In our example of logical inference above, the first proposition is not an atomic proposition, since its "if A, then B" structure is complex—it combines two propositions, A and B, and is therefore, so to speak, molecular rather than atomic.) Atomic propositions must, in other words, be logically independent.

Now, there is a potential problem here, which Wittgenstein himself raises and discusses in the *Tractatus*. The problem is this: the statement "This is red" seems to be as simple as a proposition can be. If anything is an atomic proposition, you might think, then that is one. And yet, from it we seem to be able to infer logically that the (equally simple) proposition "This is blue" is false. These two propositions, despite looking paradigmatically atomic, are certainly not logically independent. Wittgenstein's response to this in the *Tractatus* is to insist that, despite appearances, these two propositions are *not* atomic.

By using physics, Wittgenstein suggests, these statements might be analyzable into simpler statements about the velocities of particles and then even simpler statements about the positions of particles. Thus the contradictory (necessarily false) statement "This is both red and blue" is analyzable into the statement that a particular particle is in two different places at the same time.

In his review of the *Tractatus*, Ramsey points out that this proposed solution to the problem does not work. "Even supposing," he writes,

> that the physicist thus provides an analysis of what we mean by "red," Mr. Wittgenstein is only reducing the difficulty to that of the *necessary* properties of space, time, and matter or the ether. He explicitly makes it depend on the *impossibility* of a particle being in two places at the same time.

This impossibility, Ramsey suggests, is a feature of the world, rather than of our language, thus threatening to undermine Wittgenstein's entire theory of logic. It was this devastating criticism that compelled Wittgenstein to revise his opinion that he had solved all the problems of philosophy and to return to Cambridge to study, with Ramsey as his supervisor.

Ramsey was then only twenty-five years old but already recognized at Cambridge as one of the greatest intellects of his time, not only by Wittgenstein, but also by, among others, Keynes, C.K. Ogden, I.A. Richards, and Russell himself. He was to live just one more year, but in his very brief lifetime he made fundamental contributions to mathematics, philosophy, and economics. Despite the persistent and widespread admiration he arouses among academics, however, Ramsey is little known to the public at large. One of the chief purposes of *Frank Ramsey (1903–1930): A Sister's Memoir*, by his younger sister Margaret Paul, is to introduce him to a wider audience.

Perhaps because of the deeply felt desire among his admirers to see Ramsey receive some public attention at last, this memoir has been very warmly welcomed. David Papineau, a philosophy professor at King's College London, reviewing it in the *Times Literary Supplement*, writes that Ramsey "has some claim to be the greatest philosopher of the twentieth century" and calls the book "a sensitive and philosophically well-informed memoir."

What he and others fail to mention, however, is that in many ways this is a disappointing and unsatisfying book. Margaret Paul died in 2002, and the book was evidently not quite finished at the time of her death. I got to know her while she was writing it and I know how diligently she pursued her work and how determined she was to leave no stone unturned. It therefore seems inconceivable to me that she did not intend to fill some of the glaring gaps that mar the book as it has now been published.

For anyone interested in Wittgenstein, the worst of these gaps occurs between the two last chapters. At the end of the penultimate chapter, Chapter 17, we reach the climactic moment in January 1929 when Wittgenstein returned to Cambridge. At the beginning of the next chapter, expecting to read about the intellectual interchanges between Wittgenstein and Ramsey, we read instead about Ramsey's death from hepatitis in January 1930. The relationship between Wittgenstein and Ramsey during the intervening twelve months—in which they met regularly for philosophical discussions that were of fundamental importance to them both—is passed over in silence.

One is left with the unshakable impression that at least one chapter is missing, which happens to be the very chapter that many of us most wanted to read. If that chapter had been written, it would surely have given us a detailed description of the year that Wittgenstein and Ramsey spent together at Cambridge, and traced the influence the two had on each other, as Wittgenstein attempted to revise his thoughts on logic in the light of Ramsey's criticisms and Ramsey attempted to develop a theory of truth.

This is the most egregious, but by no means the only, example of apparently missing material. Indeed, in its odd structure and weirdly unbalanced patchiness—dwelling at length on relatively unimportant details while completely ignoring things of deep and lasting interest—this book recalls another biography that conspicuously failed to deliver on its considerable promise: Abraham Pais's 2006 book on J. Robert Oppenheimer, which also remained unfinished at the time of its author's death.

The book has its highlights, however. The opening chapter on Ramsey's family, for example, though not especially well written, is extremely interesting. On both his mother's and his father's side, Frank Plumpton Ramsey (the unusual middle name came from his maternal grandfather, who was descended from the de Plompton family that could trace itself back to the Normans) was the product of the British educated upper-middle class. Both his grandfathers were clergymen, one educated at Oxford, the other at Cambridge, while his father, Arthur Ramsey, was a mathematics don at Cambridge and the president (equivalent to vice-master) of Magdalene College. Frank, the eldest of four children, was born in 1903 and, together with his brother Michael (who became famous as the archbishop of Canterbury), was brought up in a large house called "Howfield" that Arthur Ramsey had built on a piece of land that he bought from his college. Margaret, their sister, was much younger, being born in 1917.

In 1915, at the age of twelve, Frank Ramsey was sent to Winchester College, one of the oldest and most distinguished of Britain's public (i.e., private) schools. He was not particularly happy there, but he excelled academically, winning prizes for almost everything and establishing himself in particular as an outstandingly gifted mathematician. The chapter on Winchester illustrates the weird imbalance of the book. Though it contains abundant information about the history and customs of the school, it also contains the *only* mention in the whole book of Ramsey's most important contribution to mathematics: his founding of what is now called "Ramsey Theory."

Remarking that Ramsey excelled at mathematics while at Winchester, Paul goes on to say that he was equally interested in economics and philosophy, and therefore "it is not surprising that, of all his later published work, only nine pages were strictly mathematics." She adds, as if in parentheses: "These, though, formed the basis of a new branch of mathematics called 'Ramsey Theory.'" One looks in vain in the rest of the book for an explanation of what Ramsey Theory is or where those nine pages might be found.

If Paul had lived to finish her book properly, she would surely have expanded this account of one of her brother's most notable achievements and put it in its proper chronological place. As only those who already know Ramsey's work

would realize, what she is alluding to is a paper that he presented to the London Mathematical Society at the end of 1928 (just a month before Wittgenstein returned to Cambridge and therefore possibly belonging to the period that was to be covered by a part of the book she never got around to writing). The paper is called "On a Problem of Formal Logic" and is twenty-two (not nine) pages long. It is not, as Paul implies, an isolated piece of writing. On the contrary, it is of a piece with much else that Ramsey wrote on logic and the foundations of mathematics.

Its starting point is an attempt to tackle what was then considered a leading problem in mathematical logic: the *Entscheidungsproblem* (decision problem), the problem of finding a method for deciding—in a finite number of steps —whether any given statement of logic or mathematics is or is not logical truth. The problem was posed by the German mathematician David Hilbert in 1928 (so Ramsey's paper is one of the earliest discussions of it) and was solved in 1936 by Alan Turing and Alonzo Church, who both, separately, showed that there was no such method.

In his own approach to the problem, Ramsey presented what he called "certain theorems on combinations which have an independent interest," and it is these theorems on combinatorics that have established the branch of mathematics named after him. The interest of Ramsey Theory centers on how certain types of order arise as mathematical objects get larger. A typical problem in this branch of mathematics would ask something like "How many elements of some structure must there be to guarantee that a particular property will hold?"

For example, consider plot dots (vertices) on a certain space and the question of how each of them is to be joined up with others. What is the minimum number of vertices that would guarantee the appearance of an entirely red (or blue) triangle? The answer is six, the proof of which belongs to Ramsey Theory. In a special issue of the *Journal of Graph Theory* dedicated to the memory of Frank Ramsey, the mathematician Frank Harary said of Ramsey Theory: "Its results are often easy to state…and difficult to prove; they are beautiful when exact, and colorful. Unsolved problems abound, and additional interesting open questions arise faster than solutions to the existing problems."[*]

Ludwig Wittgenstein; drawing by David Levine

Margaret Paul was herself an economist and her book is a little better on her brother's contributions to economics than on his contributions to mathematics. Even here, however, she seems reluctant to go into much depth. She devotes, for example, just a few sentences to Ramsey's first paper on economics, "The Douglas Proposal," which was published during his second year as an undergraduate shortly before his nineteenth birthday. (He entered Trinity College as a mathematics student in 1920 at the age of seventeen.) C.H. Douglas was an engineer who in the 1920s had put forward a scheme, known as "Douglas Credit" or "Social Credit," according to which consumers would be given rebates by the government that would close the gap between what it cost to produce goods and what it cost the consumer to buy them. In his criticism of this scheme, Ramsey brought to bear a new kind of mathematical analysis involving integral calculus. His deeply impressed father described it as "a new branch of mathematics." Ramsey's conclusion was that the scheme advocated by Douglas would achieve its ends only in exceptional circumstances.

Of far more lasting importance are two papers on economics that Ramsey wrote in the late 1920s: "A Contribution to the Theory of Taxation" (1927) and "A Mathematical Theory of Saving" (1928). Paul provides brief but useful summaries of both. The first "showed that, on certain assumptions, taxes did the least harm—caused the smallest possible fall in satisfaction—if they were set so that, as a result of the tax, the production of each good [such as sugar or corn] fell by the same proportion." In the second, he "set out to discover how much of its income a nation should save each year" in order to "reach what Frank termed the state of bliss" in which "everyone would have as much as they wanted of goods." (He concluded that it should save 60 percent of its income.)

The latter of these essays—though he conceded that it was "terribly difficult reading for an economist"—was described by Keynes as

> one of the most remarkable contributions to mathematical economics ever made, both in respect of the intrinsic elegance of the technical methods employed and the clear purity of illumination with which the writer's mind is

felt by the reader to play about its subject.

Extraordinarily, Ramsey wrote this groundbreaking paper while working on a book (that he never finished) on logic. What for economists and most mere mortals was "terribly difficult" was, for him, a kind of relaxing distraction, "a waste of time." Today, it is regarded by economists as one of the founding papers in the branch of their discipline known as "optimal accumulation," which seeks to calculate the amount of a society's economy that should be invested rather than consumed so as to maximize utility.

Ramsey's initial excursion into economics had been at the instigation of C.K. Ogden, whom he met while still a schoolboy at Winchester and who was, in all sorts of ways, to have a deep influence on his life. Ogden, fourteen years older than Ramsey, had been a classics student at Magdalene and thus had come to the attention of Ramsey's father. While still an undergraduate, Ogden had founded both a weekly journal, *The Cambridge Magazine*, and a discussion group, the Heretics. Ramsey first met him in the spring of 1920, a few months before he entered Cambridge, and in the summer of 1923 wrote him a couple of letters—one about Ogden's book (cowritten with I.A. Richards) *The Meaning of Meaning* and the other about Bertrand Russell's philosophy of mathematics—that reveal how astonishingly perceptive, incisive, and critical his mind already was at the age of seventeen.

At Cambridge, Ramsey was quickly accepted by the intellectual elite. Most notably, perhaps, he was elected a member of the famous conversation club the Apostles, whose other members included many of the leading economists, mathematicians, historians, philosophers, and writers of the day. At the Apostles he got to know Keynes, who invited him to attend meetings of the select Political Economy Club. Another member of the Apostles, G.E. Moore, was the most influential philosopher at Cambridge. When Ramsey started to attend his lectures, Moore recalled later, "I had soon come to feel of him, as of Wittgenstein, that he was much cleverer than I was, and consequently I felt distinctly nervous in lecturing before him." Moore was at that time forty-eight years old, a fellow of Trinity, and the author of several widely influential books and articles; Ramsey was eighteen years old and a first-year undergraduate.

Through his connection with Ogden, Ramsey was elected a member of the committee of the Heretics and was also able to publish a couple of articles in *The Cambridge Magazine*. One of these was his piece on Douglas Credit. The other was a review of Keynes's recently published *A Treatise on Probability*. Unlike many other aspects of Ramsey's work, his views on probability are expounded in some length in Paul's book. Indeed, she devotes an entire chapter to them, in which she outlines Ramsey's 1922 criticisms of Keynes as well as his more substantial 1926 paper "Truth and Probability." She also provides extensive quotations from a paper on the subject that Ramsey presented to the Apostles in 1923.

At the heart of Ramsey's views on the subject was a rejection of Keynes's idea that probability is an objective relation between two propositions. Instead Ramsey saw it as a measure of the strength of our beliefs in what will occur. With characteristic rigor, Ramsey provided a way of bringing to this subjective characterization of probability a strict mathematical analysis, thus preparing the way for modern decision and game theory. The "subjective probability" he devised was quite similar to the later "expected utility theory" of John von Neumann and others. When reviewing the posthumous collection in which "Truth and Probability" was published, Keynes summarized Ramsey's view and added: "I yield to Ramsey—I think he is right."

Another consequence of Ramsey's friendship with Ogden was his involvement in the English edition of Wittgenstein's *Tractatus Logico-Philosophicus*. Ogden had a position at the London publishers Kegan Paul, for whom he edited a series called the International Library of Philosophy and Scientific Method. On Russell's recommendation, Ogden offered to publish the *Tractatus* in that series and then turned to Ramsey to perform what Moore had suggested was an impossible task: translating Wittgenstein's compressed and oracular German into English. Ramsey rose to the task and, after many corrections by Wittgenstein himself, the English edition ("translated from the German by C.K. Ogden") was published in 1922.

The following year, Ramsey published in *Mind* a brilliant review of the book that combined masterful exposition with typically penetrating criticism. He wrote that the book had "an attractive epigrammatic flavour," which

perhaps makes it more accurate in detail, as each sentence must have received separate consideration, but it seems to have prevented him from giving adequate explanations of many of his technical terms and theories, perhaps

because explanations require some sacrifice of accuracy.

It was Ramsey's criticisms, made both in that review and also in person when Ramsey visited him in 1924, that persuaded Wittgenstein to return both to philosophy and, eventually, to Cambridge with Ramsey.

At Keynes's insistence, when Ramsey graduated he was offered, at the extraordinarily young age of twenty-one, a fellowship at King's College, Cambridge. The post carried with it a surprisingly heavy teaching load. In a letter to Keynes, Ramsey complained that he was teaching sixteen hours a week. Most of this was tutoring, which Ramsey was not especially good at, because, having such a quick mind himself, he was unable to understand why his students (and King's College, Cambridge, of course, attracted some of the very best students in the country) were not able to understand what they read or what he said to them. He also lectured three times a week. "You ask what he looked like and how he lectured," one of his students wrote to Margaret Paul. "The answer, in my recollection, is in one word—chalk! Chalk getting into his hair, all over his gown and suit, smudged over his glasses and face, and broken bits of chalk flying at all angles off the blackboard."

When people described Ramsey's physical appearance, they tended to use the word "bulky." He was over six feet tall and heavily built. The philosopher Arthur McIver, who knew Ramsey at Winchester, described him as "an enormous man like a cross between a lighthouse and a balloon—like a Zeppelin set up on end." In one of his most frequently quoted remarks, Ramsey used his large frame to illustrate his *Weltanschauung*:

> Where I seem to differ from some of my friends is in attaching little importance to physical size. I don't feel the least humble before the vastness of the heavens. The stars may be large, but they cannot think or love; and these are qualities which impress me far more than size does. I take no credit for weighing nearly seventeen stone [238 pounds].

Y ou might think, when dealing with the life of a man who died at the age of twenty-six, especially one who wrote so much in that short time, that there would not be much to say about his love life. In fact, however, a surprising amount of this book is taken up with just that. Paul describes in detail Ramsey's unhappy and unreciprocated love, at the age of nineteen, for a woman called Margaret Pyke, who was married and had a child, and also his relationship with his wife, Lettice, whom he met in 1924 and married the following year. Drawing extensively on correspondence between the two, Paul charts the ups and downs of this marriage, which produced two daughters but was not entirely happy because of infidelities on both sides.

Ramsey was an extraordinarily intelligent man whose every word on logic, mathematics, economics, and philosophy is worth contemplating. He was not, however, a great imaginative writer or a man blessed, or cursed, with a particularly intense, unusual, or noteworthy emotional life. Thus, when talking about his romantic feelings, he appears as what in other matters he most assuredly was not: an ordinary man. While his wife was away in Ireland he told her, in the spirit of an open marriage, about a very satisfactory affair he was having with another woman; when she wrote that she, too, was having an affair, he erupted in anger.

So if we want to understand the admiration in which he is widely held, it does not help much to read his letters to Lettice. His sister would have done a much greater service to his memory if, as well as writing at such length about his love life, she had described the context, content, and impact of the work on which his reputation as a philosopher rests. For during his five last years, the years of his marriage to Lettice, he published three seminal papers on philosophy —"Universals" (1925), "The Foundations of Mathematics" (1925), and "Facts and Propositions" (1927)—and wrote several more that remained unpublished until after his death.

Paul provides extremely brief accounts of each of the published papers, but does little or nothing to provide a general characterization of the philosophical position that inspired them. She gives no clear idea, for example, of how his philosophical thinking developed from his consideration of the age-old question "What is truth?," a question to which Ramsey responded with what is often called the "deflationary theory": to say that a proposition p is true is simply to assert p. "It is evident," he writes in "Facts and Propositions," "that 'It is true that Caesar was murdered' means no more than that Caesar was murdered." From there, Ramsey went on to tackle what he regarded as the more difficult question, "What is belief?" Or rather, this is what he *intended* to do. His early death prevented him from completing this task.

The papers he left unpublished, however (about which Paul says almost nothing), provide evidence that during the last year of his life Ramsey was moving away from the broadly Russellian views that he espouses in his published papers and toward a view more akin to the intuitionism associated with the Dutch mathematician L. E. J. Brouwer—the belief that mathematical concepts are solely creations of the mind, with no external existence. The story of this shift, and the part (if any) played in it by Ramsey's conversations in 1929 with Wittgenstein, would be of enormous interest to anyone concerned with the development of philosophy in the twentieth century. Without going into detail, we can at least say that he helped convince Wittgenstein to move past his work in the *Tractatus*; Wittgenstein himself said that his talks with Ramsey "educate[d] me into a degree of courage in thinking."

Whatever Ramsey was working on in 1929 was cut short by his very untimely death in early 1930, which is described with great tenderness and sensitivity in Paul's final chapter. In November he was confined to bed with jaundice. Nobody thought much of it, but when, in January, he was still ill, he was moved to Guy's Hospital where an exploratory operation was carried out. Three days later he died, the cause of death being given as hepatitis. Using contemporary accounts in the letters and diaries of Ramsey's friends and relatives, the last chapter of this memoir conveys vividly the shocked disbelief with which his death was greeted.

With Ramsey's young death, the world of learning was robbed of one of its most glittering stars. It is now time that he receive his due. What is needed is a thorough biography that would describe and place in intellectual history his important contributions to economics, mathematics, and philosophy, while keeping an eye out for what Virginia Woolf called the "fertile facts" that would reveal to us not only the impressive mind, but also the somewhat elusive personality of this extraordinary man.

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* Vol. 7, No. 1 (Spring 1983). ↩

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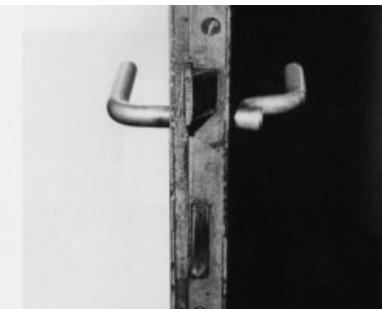
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