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‘HE IS NO GOOD FOR MY WORK’
On the Philosophical Relations between Ramsey and Wittgenstein

Was it Frank Ramsey that gave us the later Wittgenstein?

In his Logic, Philosophy, and Language, Georg Henrik von Wright remarks that: ‘Wittgenstein’s later thinking is, as far as I can see, completely independent of a philosophical tradition and without literary sources’.1

Von Wright is far from being the only one entertaining this view. But Wittgenstein’s later thinking is, of course, not the genesis of a new philosophy. What is surprising, however, is that although many interesting links and connections have been pointed out, the most obvious of them all seems to have been almost totally overlooked or neglected by most Wittgensteinianscholars. Thus, since it is far better to be thought-provoking than provocative let me straightaway rephrase the opening question and instead ask to what extent Frank Ramsey may have influenced the thinking of the later Wittgenstein.

Having written The Philosophy of F. P. Ramsey, I was left with the impression that Wittgenstein was far more influenced by Ramsey than Ramsey was influenced by Wittgenstein.2 It is well known that Wittgenstein got a solid grip of the very young Frank Ramsey’s philosophical panorama. But, what is less well known is that Ramsey came to change his view of philosophy and in doing so became a major force in Wittgenstein’s upheaval of the Tractarian view. And that from 1929 and on one can clearly spot a remoulded Ramsey in the work of Wittgenstein.

There are no incontrovertible arguments in favour of this thesis. However, there are enough circumstantial pieces of evidence to support the hypothesis and combining these concurring pieces gives it not too low a probability. I will present my arguments in three parts. First, a few biographical glimpses have to be given. They will give us a picture of what we
know about Ramsey's and Wittgenstein's philosophical discussions, when and where they met, and what was probably on their agenda. Second, something has to be said about Ramsey's British pragmatism. The core of Ramsey's philosophical and scientific work consists of no more than, say, 15 papers. But they are more than 15 brilliant essays on 15 disparate subjects. As I read them I found that almost all of them contain the same view of philosophy — a method of analysis — merging a sound portion of realism, or to use G. E. Moore's words 'the soundest of common sense', with Ramsey's kind of pragmatist philosophy. For my purpose it is of crucial importance to show that Ramsey came to entertain this view of philosophy in the mid 20's. Third, I will give a few examples of where this British pragmatism can be spotted in Wittgenstein's work after 1930.

1. Biographical glimpses

Frank Plumpton Ramsey was born on the 22nd of February 1903 and died at the age of 26 on the 19th of January 1930. He became a Fellow of King's in 1924 at the age of 21. Two years later he was made a lecturer in mathematics at Cambridge.

With the *Tractatus*, Wittgenstein made sure that the professional philosophers were fully occupied, and, for better and worse, he forced Oxford into a special mode of philosophical thought. Perhaps Wittgenstein is the philosopher that, together with Russell, had the greatest importance for Ramsey's early philosophical development. Not that Ramsey blindly accepted their views. Ramsey was, for example, far too clear-sighted not to perceive the defects of *Tractatus* (and *Principia Mathematica*) at an early stage.

In 1922 Wittgenstein's *Logisch-Philosophische Abhandlung* of 1921 was published in a bi-lingual version, this time under the title *Tractatus Logico-Philosophicus*, a title which Moore is said to have suggested. Wittgenstein's aphoristic style caused many, including Moore, to doubt whether it was possible to translate the book at all. Ramsey was extremely interested in Wittgenstein's text and C. K. Ogden suggested to him that he should try to translate it. At this time, Ramsey was 18 years old. During the winter of 1921–1922 Ramsey went now and again to Mrs. Pat's typing office and dictated straight off a translation of the *Tractatus*. Having Ramsey translate the book proved to be a stroke of genius.

But it was not until the summer of 1923 that Ramsey met Wittgenstein. Ogden had written to Wittgenstein in Puchberg explaining that Ramsey would like to meet him. Ramsey got an invitation from Wittgenstein and went to visit him. This gave him the opportunity of discussing the difficulties he had with the *Tractatus*. It is well-known that Ramsey's and Wittgenstein's conversations resulted in both the English translation and the German original being altered, alterations that were made in the second edition of the *Tractatus*.

Ramsey's review of *Tractatus*, published in *Mind* (October 1923), although written before they met gives us some ideas of what they actually discussed at their meetings. But, this is what happened on the philosophical level; there is, however, also a psychological dimension. Ramsey admired Wittgenstein a lot. *Tractatus* was the hub around which Ramsey's philosophical mind was spinning. It was no doubt a devoted and enthusiastic student that arrived in Puchberg to learn from his master. In an often quoted letter to his mother, written on September 20, 1923, Ramsey says:

He is great. I used to think Moore a great man but beside W!

In the same letter he also tells us something about how their discussions went on:

He is prepared to give 4 to 5 hours a day to explaining his book. I have had two days and got through 7 (+ identical forward references) out of 80 pages. And when the book is done I shall try to pump him for ideas for its further development which I shall attempt.

and a few lines later on continues:

He has already answered my chief difficulty which I have puzzled over for a year and given up in despair myself and decided he had not seen.

That Ramsey forced Wittgenstein to defend his position is clear from the following passage:

It's terrible when he says 'Is that clear' and I say 'no' and he says 'Damn it's horrid to go through that again'. Sometimes he says I can't see that now we must leave it. He often forgot the meaning of what he wrote within 5 minutes, and then remembered it later. Some of his sentences are intentionally ambiguous having an ordinary meaning and a more difficult meaning which he also believes.

In 1923 Ramsey, having translated the *Tractatus*, went to Puchberg hoping to 'pump' Wittgenstein for ideas for its further development, something that he himself wanted to attempt. I do not think that Ramsey got any new ideas or insights from his discussions with Wittgenstein, at least none that he later
came to develop. A vigilant reading of the letter to his mother suggests that Wittgenstein did not, contrary to what one might believe, act as a teacher or advisor, hinting at new possibilities, generously giving away fruitful ideas. Instead it seems as if Wittgenstein was under attack and had to stand up for his ideas. In translating Tractatus Ramsey had already spotted the weaknesses of the building. But his aim was not to tear it down, to build something new; rather he wanted to spend time repairing and developing the construction and improving its foundation.

Ramsey went back to Vienna in March 1924 to see Wittgenstein again. But he does not seem to have had much philosophical enjoyment from the conversations with him on the few occasions that they met. In May, having seen Wittgenstein one more time, he writes:

... he is no good for my work.3

In less than a year Ramsey had turned around completely. He no longer wished to work with Wittgenstein on the foundations of mathematics. He had realized that Wittgenstein was no good for his work. We can only guess what reasons he had for this change of mind. However, as early as 1923 he must have sensed that Wittgenstein had nothing new to offer him. That summer Wittgenstein also explained to Ramsey that: ‘he himself will do nothing more’. Thus, if Ramsey had what he thought promising ideas that he wanted to develop, that he saw things that Wittgenstein hadn’t seen or didn’t agree on, why should he not pursue them on his own? We should be grateful that Ramsey realized this and decided to cultivate his own ideas. What came out of this decision was a couple of first-rate papers, for example, ‘Universals’, ‘The Foundations of Mathematics’ (both 1925), and ‘Mathematical logic’ (1926).

But there is one more thing of importance in this context. In 1922 Ramsey wrote a review of Keynes’ A Treatise on Probability. And he criticised this theory so effectively that Keynes himself abandoned it. Ramsey also read C. S. Peirce on probability and was introduced to American pragmatism.4 Keynes, whose theory he thought so flawed, and Peirce, whose work I do not think he knew very well (from what we can tell he just read bits and pieces of Peirce’s writings), came to influence him considerably. Dissatisfied with their views on probability he developed a radically new theory of probability. However, in doing so he also laid the foundation for the British pragmatism that he then came to entertain and develop till his death.

After the summer of 1924 Ramsey and Wittgenstein seem to have lost touch, at least when it comes to philosophy. They met again in 1925 at Keynes’ place and had a heated spat, but unfortunately not on philosophy. There is also a letter from 1927. Apart from these two sporadic encounters, there are no indications of any other correspondence whatsoever or philosophical trysts. However, when Wittgenstein moved to Cambridge in January 1929, he and Ramsey resumed their acquaintance. It is known that they met frequently and spent considerable time discussing philosophy, but exactly what was on the agenda is mostly entombed in oblivion.5

In the introduction to Philosophical Investigations Wittgenstein announces the significance which Ramsey’s ‘certain and forcible’ criticism had for his philosophical reorientation:

For since beginning to occupy myself with philosophy again, sixteen years ago, I have been forced to recognize grave mistakes in what I wrote in that first book. I was helped to realize these mistakes — to a degree which I myself am hardly able to estimate — by the criticism which my ideas encountered from Frank Ramsey, with whom I discussed them in innumerable conversations during the last two years of his life.

What Wittgenstein alludes to must be the 1923 discussions as well as the discussions they had in 1929. But the Ramsey that Wittgenstein met in 1929 was surely not the same young mathematician as he had to defend his work to in the summer of 1923. With ‘Truth and probability’ (1926) Ramsey had begun to develop his pragmatist view of philosophy. And in 1929 he had a unified and quite complete theory of belief, truth, knowledge and probability. In fact he had been working on a book manuscript, now published as On Truth, dealing with these topics. This manuscript dates from the period 1927–29.6 It is essentially elements of this British pragmatism of Ramsey’s that we can find traces of in the work of the later Wittgenstein.

2. Ramsey’s British Pragmatism

Ramsey concludes ‘Facts and propositions’ (1927) by saying:

The essence of pragmatism I take to be this, that the meaning of a sentence is to be defined by reference to the actions to which asserting it would lead, or, more vaguely still, by its possible causes and effects.7

In ‘Facts and propositions’ Ramsey uses his pragmatist philosophy to outline a theory of truth. Ramsey’s theory has been misunderstood in later philosophical literature. The reason for this is, I take it, that no one has clearly comprehended the intimate connection between his theories of truth,
partial belief (the subjective theory of probability) and knowledge.

In his paper 'Truth and Probability', written in 1926, Ramsey laid the foundations of the modern theory of subjective probability. He showed how people's beliefs and desires can be measured by use of a traditional betting method. What we want to do is to measure a person's belief by proposing a bet, and 'see what are the lowest odds which he will accept'. Ramsey took this method to be 'fundamentally sound', but saw that it suffered from 'being insufficiently general, and from being necessarily inexact ... partly because of the diminishing marginal utility of money, partly because the person may have a special eagerness or reluctance to bet, ...'. To avoid these difficulties he laid the foundations of the modern theory of utility. He then went on to show that if people in their behaviour follow a set of rules, the measure of our 'degrees of belief' will satisfy the laws of probability.

Ramsey was the first one to prove the celebrated Dutch book theorem; he had a proof of the value of collecting evidence; he took higher order probabilities seriously; and he had the notion important for Bayesian statistics of 'exchangeability'. In 'Truth and probability' he also laid the foundations of modern decision theory. Finally, it is important to emphasize that Ramsey was far from being the narrow-minded subjectivist/Bayesian that others have often presented him as. He did not, for example, believe that 'probabilities do not exist', meaning objective probabilities; rather he saw that some types of probability are a matter for physics, not for psychology and not for logic.

In this context it is especially fruitful to look upon 'Truth and probability' as a theory of rule-following. It tells us that we can describe a person's actions in terms of rule-following. It, for example, tells us that if our distribution of degrees of belief follows the rules of probability theory, a book cannot be made against us.

But let us now return to Ramsey's theory of truth. In 'Facts and propositions' Ramsey argues that 'if we have analysed judgment we have solved the problem of truth'. To carry out such an analysis successfully one has to say what the content of a belief is without falling into a regress by appealing to the meaning of sentences understood as truth conditions.

There is an important paragraph in the paper where Ramsey clearly indicates how such an analysis can be carried out:

... it is, for instance, possible to say that a chicken believes a certain sort of caterpillar to be poisonous, and mean by that merely that it abstains from eating such caterpillars on account of unpleasant experiences connected with them .... An exact analysis of this relation would be very difficult, but it might well be held that in regard to this kind of belief the pragmatist view was correct, i.e. that the relation between the chicken's behaviour and the objective factors was that the actions were such as to be useful if, and only if, the caterpillars were actually poisonous. Thus any set of actions for whose utility p is a necessary and sufficient condition might be called a belief that p, and so would be true if p, i.e. if they are useful.11

In a note Ramsey adds: 'It is useful to believe aRb would mean that it is useful to do things which are useful if, and only if, aRb; which is evidently equivalent to aRb'.

This pragmatic theory of truth is something rather different than the redundancy theory of truth credited to Ramsey. If propositions are the carriers of truth value, then to say that 'it is true that Caesar was murdered' means no more than that Caesar was murdered. But, Ramsey does not find this a very interesting analysis of truth. Far more challenging is to say what it means to have a true belief and to do this without appealing to the meaning of sentences. To succeed in this a pragmatic analysis seems to be the correct way to go.

Ramsey's theory of truth, like his theory of probability, tells us something about rule-following. The chicken in Ramsey's example can be seen as having a decision problem, it has a choice between the two actions: (i) eat the caterpillar; (ii) refrain from eating the caterpillar. If the chicken chooses to eat the caterpillar, this choice will lead to one of two consequences, depending on whether the caterpillar is poisonous or edible. If the caterpillar is poisonous, the chicken gets an upset stomach; if it is edible, the chicken gets a good lunch. If, on the other hand, the chicken refrains from eating the caterpillar, this means that it has either avoided an upset stomach or missed its lunch.

This is a well-defined decision problem and we can therefore use Ramsey's theories of subjective probability, utility and decision to solve it. 'Truth and probability' tells us that if a chicken does not know whether the caterpillar is poisonous or not, he should 'act in the way he think[s] most likely to realize the objects of his desires'; i.e. maximize his subjective expected utility. However, a truth-problem is not one of degrees of belief, but of full belief. We want to make clear what is meant by saying that the chicken believes fully, i.e. believes, that the caterpillar is poisonous. What it means is that the chicken refrains from eating the caterpillar: an action that is useful if and only if the caterpillar is poisonous (and the chicken wants to avoid an upset stomach).

This is the gist of Ramsey's theory of truth. It is an obvious example of a pragmatic theory of truth, but also of a type of rule-following epistemology. Having a true belief is having a more or less complicated rule, which if put to use, always leads to success.

In 'Knowledge', written in 1929, Ramsey uses his pragmatic theory to
give an analysis of what it means to have knowledge. 'I have', he says, 'always said that a belief was knowledge if it was (i) true, (ii) certain, (iii) obtained by a reliable process.' On the surface this definition of knowledge looks very much the same as the traditional, true-justified-belief theory, but working out the details of this theory one discovers that it diverges significantly from that account of knowledge. Of special interest is his third condition.

Ramsey requires that X's belief (that p) has been obtained by a reliable process. It is not sufficient that X has evidence for believing that p; the way in which we acquire our beliefs should be reliable. The reliability condition thus tells us that the provenance of knowledge is of decisive importance. To have full belief is not enough, not even if the belief is supported by heaps of evidence. But as important as the provenance of the beliefs we call knowledge is their future use. A belief, being a map by which we steer, being a rule to follow, must guide our future actions. A full belief, obtained by a reliable method, is definitely not knowledge if it leads us on the wrong track; to be knowledge it must help us to avoid errors. Thus, knowledge is simply not true justified belief but rather: A belief is knowledge if it is obtained by a reliable process and if it always leads to success. Knowledge is simply a special type of rule-following activity.

3. Ramsey and Wittgenstein

It should then be obvious in what ways Ramsey must have influenced Wittgenstein. In the introduction to Philosophical Investigations Wittgenstein himself mentions how Ramsey forced him to 'recognize the grave mistakes' he made in Tractatus, but also the 'innumerable conversations' they had in 1929. One thing that must have been on the agenda during these conversations is the pragmatism that Ramsey had begun to develop already in 1926 with 'Truth and probability'. An essential element of this pragmatist philosophy is, as we have seen, various aspects of rule-following. Rational decision making, acting on true beliefs, and knowledge are all examples of rule-following activities.

It is not my intention to compare the writings of Ramsey and Wittgenstein word by word or even sentence by sentence. I find such a task utterly uninteresting and more often than not it leads nowhere. I will also try to avoid being caught in a tedious and unproductive exegesis. There are many readings of the later Wittgenstein's work, but it seems to me quite clear that they have no bearing on my work.

I have chosen to compare Ramsey's and the later Wittgenstein's writings on the following points: (a) rule-following; (b) general propositions and theories; and (c) induction and probability.

3.1. Rule-following

Colin McGinn opens his book Wittgenstein on Meaning by saying: 'However much interpreters of Wittgenstein's philosophy may disagree, there is one point in which no dispute is to be expected: that Wittgenstein held that the proper way of understanding and resolving philosophical problems lies in arriving at a correct conception of language'. If you are looking for a Ramsey in the later Wittgenstein's writings, do not expect to find the ideas presented as they are in his own work. Rather what you have to look for is a Ramsey ground through the mind of a person with a diametrically different philosophical temperament who was primarily concerned with the philosophy of language; with language as a method of analysis.

For Ramsey the meaning of a sentence is to be defined by reference to the actions to which asserting it would lead. If this is your view of meaning, you have to study rule-following: so did Ramsey, and so did Wittgenstein. Wittgenstein, however, did not aim at a definition, but to him there is no meaning without rule-following and no rule-following without meaning.

Ramsey teaches us how people's beliefs and desires can be measured by use of a traditional betting method. He also shows that if people in their behaviour follow a set of rules, the measure of our 'degrees of belief' will satisfy the laws of probability. His primary concern is to give a description of sound decision making, to depict what it is to maximize expected utility. McGinn tells us that one thing Wittgenstein aimed at was to give a 'characterisation [a description] of what it is actually like to follow a rule, to remind us of the 'phenomenology' of ... using a word' Wittgenstein's entire project is more sweeping, but the core of it is essentially Ramsey's decision theoretical project applied to language. Note, however, that 'giving a description' for Ramsey is to 'solve a problem', for Wittgenstein to 'dissolve a problem'.

A Wittgenstein familiar with Ramsey's descriptive view of decision making, ought to ask Ramsey a number of thought-provoking questions about sound decision making. Is it, for example, possible to obey the postulated rules of rationality 'privately'? And, '[i]s what we call ["maximizing expected utility"] something that it would be possible for only one man to do, and to do only once in his life?' (Philosophical Investigations, 199).

What is decision making but a practice? Most of us believe ourselves to
master the techniques of rational decision making; that, for example, we are not violating the rules of probability calculus. But, thinking that one is a sound decision maker, obeying the rule of maximizing expected utility, does not entail that one is; ‘to think that one is obeying a rule is not to obey a rule’ (Philosophical Investigations, 202). The only way to find out seems to be to conduct an experiment. Beliefs and desires have to be separated and measured. Measurement, however, demands stability, our preference rankings should not be drifting. We must also be able to identify one and the same outcome or consequence in different preference rankings and from one time to another. One might now argue that this can be accomplished only from a third-person perspective; that the rationality of a decision maker is something that has to be experimentally verified.19 One might argue that it is the surroundings that make a decision rational or irrational. Exactly what constitutes this outer frame of reference is an interesting question, but not one that has to be dealt with in this context. One answer, however, would be to say that what is needed is more than one decision maker who speaks the language of decision. (In Remarks on the Foundations of Mathematics20 Wittgenstein, talks about this problem: ‘What sort of public must there be if a game is to exist, if a game can be invented?’ and ‘What, in a complicated surrounding, we call “following a rule” we should certainly not call that if it stood in isolation.’)

What I have designed is a ‘private language argument’ in disguise. The argument is presented as it might occur to you after you have read some descriptive decision theory. I do not say that it is a very good argument. What I do imply, however, is that someone who is primarily concerned with language may well have found Ramsey’s theory of decision thought-provoking and transmuted it into a theory of language.

In ‘Truth and probability’ Ramsey discusses how his theory relies on mathematical expectation. He argues that ‘mathematical expectations in terms of money are not proper guides to conduct’, but that the ‘dissatisfaction often felt with this idea is due mainly to the inaccurate measurement of goods’.21 Ramsey solves this difficulty by deriving measures of desire rather than measures of goods. However, we might want to ask him what the arguments are for maximizing expected utility in a unique situation. The standard justification for using mathematical expectation as a decision maxim is the average utility in the long run. But, if only one man plays a game only once in his life, a long-run justification is hardly admissible.

Assume, for example, that you arrive at a remote spot where they sell Coca-Cola for 5 cents a bottle. The price of a bottle has risen to 6 cents recently but the machine only takes nickels. If every sixth bottle in the machine is empty in a random way, the expected price per bottle will be six cents. For the owner of the machine and those who often use it this will be quite satisfactory, but for you, the visitor passing through, the system is of doubtful value.22

Reading Wittgenstein on rule-following reminds one of some of the key elements in Ramsey’s theories of belief, truth and probability. It is like coming back to a city destroyed by war and rebuilt again. We recognize the major roads, a few buildings, the rest is untrodren ground. I might be wrong about this, but in Wittgenstein’s later writings I see a theory of rule-following taking off from a Ramseyian analysis of sound decision making, from a theory of decision making as rational rule-following.23

3.2. General propositions

Ramsey argued that the logical form of a belief determined its causal properties. A belief is ‘a map of neighbouring space by which we steer’.24 The difference between the belief ‘not-p’ and the belief ‘p’ lies in their causal properties. Thus disbeliefing ‘p’ and believing its negation have the same causal properties. They express, as Ramsey puts it, really the same attitude: ‘It seems to me that the equivalence between believing “not-p” and disbeliefing “p” is to be defined in terms of causation, the two occurrences having in common many of their causes and many of their effects’.25 One of the advantages that Ramsey found in this theory is how it avoids the ontological proliferation of Russell’s theory; negative facts, for example, are not needed.26

A causal property theory of this kind also has to handle more complex beliefs. What precise differences are there between the various logical forms of a belief and its causes and effects. Disjunctive beliefs engender no problems. To ‘believe p or q is to express agreement with the possibilities p true and q true, p false and q true, p true and q false, and disagreement with the remaining possibility p false and q false’.27 However, quantification introduces a set of problems which are not that easily handled.

In ‘Facts and propositions’ Ramsey follows Johnson and Wittgenstein and sees general propositions as the logical products and the logical sums of atomic propositions. ‘For all x, φx’ is to be interpreted as: a is φ, b is φ, c is φ ... and ‘There is an x such that φx consequently is equivalent to the logical sum of the values of ‘φx’. If all propositions are truth functions of elementary propositions, traditional quantification leads to truth functions of an infinite number of arguments. With this analysis the causal property theory is easily extended to cover also the case of general propositions: ‘Thus general propositions, just like molecular ones, express agreement and disagreement with the truth-possibilities of atomic propositions, but they do
this in a different and more complicated way. Feeling belief towards “For all x, φx” has certain causal properties which we call its expressing agreement only with the possibility that all the values of φx are true”.28

Two years later Ramsey no longer found this a tenable analysis. In “General propositions and causality”, written in the summer of 1929, he has four arguments against analysing ‘For all x, φx’ as a conjunction. First, ‘For all x, φx’ cannot be written out as a conjunction. Second, it is never used as a conjunction. The statements are different as a basis for action. Third, ‘For all x, φx’ exceeds by far what we know or have knowledge of. What we know are, at most, a few instances of this generalization.

A belief of the primary sort is a map of neighbouring space by which we steer. It remains such a map however much we complicate it or fill in details. But if we professedly extend it to infinity, it is no longer a map; we cannot take it in or steer by it. Our journey is over before we need its remotest parts.29

Fourth and finally, he argues that what we can be certain about is the particular case, or a finite set of particular cases. Of an infinite set of particular cases we could not be certain at all. Thus, ‘For all x, φx’ expresses, as Ramsey puts it, an inference we are at any time prepared to make, not a belief of the primary sort.

But, if general propositions are not conjunctions and thus not propositions, and assuming that general facts do not exist, how then are we to look upon sentences of this type? What status do they have; in what way can they be right or wrong? Unsurprisingly, Ramsey gives a pragmatic answer to this question. That general propositions are neither true nor false, that they carry no truth value, does not imply that they are meaningless. This type of sentence is the very foundation of the expectations that direct our actions. If I accept that for all x, φx, this means that when I have an x, I act as if it is φ. As Ramsey puts it, a general proposition is not a judgment but a rule for judging: it cannot be negated but it can be disagreed with.

In his Wittgenstein, Georg Henrik von Wright tells us that in one of the first conversations he and Wittgenstein had in 1939, Wittgenstein said that ‘the biggest mistake he made in the Tractatus was that he had identified general propositions with infinite conjunctions and disjunctions of singular propositions’.30

It is well-known that the later Wittgenstein took a different view of quantification, a view which in fact is very similar to the one adopted by Ramsey in ‘General propositions and causality’.31 In Philosophical Grammar, for example, Wittgenstein argues that ‘[a]n hypothesis is a law for forming propositions’. ‘You could also say’, he continues, ‘an hypothesis is a law for forming expectations’.32 Ramsey could have written these words. What they show is that Wittgenstein came to foster the view that propositions containing quantifiers are not ‘genuine’ propositions.33 Wittgenstein uses the word Gesetz, i.e. law, and one could then succinctly state the later Wittgenstein’s position using Ramsey’s words: general propositions are not judgments, but laws for forming judgments, they are expectations-forming: ‘If I meet a φ, I shall regard it as a ψ’.34

We cannot say if Wittgenstein got these ideas from Ramsey, or via some other source. Not too bold a conjecture is, however, that the discussions they had in 1929 must have made Wittgenstein see his earlier view of quantification as the biggest mistake he made in Tractatus.

Ramsey got his view of general propositions from reading Weyl. In ‘The foundations of mathematics’, first read in November 1925, there are references to Hermann Weyl’s Das Kontinuum, and a reference to Weyl’s paper ‘Über die neue Grundlagenkrise der Mathematik’, a paper published in Mathematische Zeitschrift in 1921. The F. P. Ramsey Collection35 contains a short transcript (6 handwritten pages) in German of bits of this (40-page) paper. The transcript is not dated, but it must have been written before 1925. Something that caught Ramsey’s attention is what Weyl has to say about quantification:

Ein Existentialsatz – etwa “es gibt eine gerade Zahl” – ist überhaupt kein Urteil im eigenen Sinne, das einen Sachverhalt behauptet; Existential-Sachverhalte sind eine leere Erfindung der Logiker. “2 ist eine gerade Zahl”: das ist ein wirkliches, einem Sachverhalt Ausdruck gebendes Urteil; “es gibt eine gerade Zahl” ist nur ein aus diesem Urteil gewonnenes Urteilsabstrakt.36

Ramsey then jumps a few lines in Weyl’s text and continues his annotations:

Ebensowenig ist das generelle “jede Zahl hat die Eigenschaft E” – z. B. “für jede Zahl m ist m + 1 = 1 + m” – ein wirkliches Urteil, sondern eine generelle Anweisung auf Urteile.37

At the time when Ramsey made these annotations he was not the least impressed with or convinced by Weyl’s view of mathematics.38 But obviously he came to change his mind, and in the process maybe Wittgenstein’s too.

3.3. Theories

Ramsey saw that the best way to understand how the theoretical entities of a theory function is to picture them as existentially bound variables. If the entities of our theory are α, β and γ, the ‘best way to write our theory’
according to Ramsey is: ‘(3x, β, γ): dictionary, axioms’. This is the theory’s ‘Ramsey sentence’. The existentially bound variables are the carriers of ontological commitment; if the Ramsey sentence is true, they tell us what there is.

Ramsey’s view of theories has many advantages. First, Ramsey sentences help us understand the dynamics of scientific theories and scientific growth. Second, they explain the phenomenon of ‘incommensurability’. We note, for example, that no proposition of a theory ‘can be understood apart from the whole theory to which it belongs. If a man says “Zeus hurls thunderbolts”, that is not nonsense because Zeus does not appear in my theory, and is not definable in terms of my theory. I have to consider it as part of a theory and attend to its consequences, e.g. that sacrifices will bring the thunderbolts to an end’. Thus, the ‘adherents of two such theories could quite well dispute, although neither affirmed anything the other denied’.

What Ramsey says about scientific theories should be compared to what Wittgenstein says about language. In The Blue Book he argues: ‘The sign (the sentence) gets its significance from the system of signs, from the language to which it belongs. Roughly: understanding a sentence means understanding a language’.

In this respect, Wittgenstein’s view merely extends Ramsey’s view of scientific theories to the whole of language.

3.4. Induction and probability

What has been called Wittgenstein’s theory of probability is, as a theory of probability, somewhat incomplete. The classical definition of probability says that probability is the ratio of the number of favourable cases to the number of all equipossible cases. Transformed into the world of Tractatus ‘the number of all equipossible cases’ is the number of truth-grounds of a given proposition q; and ‘the number of all favourable cases’ is the number of truth-grounds of a proposition p, which also are truth-grounds of q. Assume that these numbers are m and k, respectively. Then the conditional probability, the probability of p given q, is \( \frac{k}{m} \), ‘the degree of probability that the proposition [“q”] gives to the proposition [“p”]’ (5.15).

von Wright reminds us that when Wittgenstein wrote Tractatus he obviously believed that logically independent propositions give one another the probability 1/2. The classical view of probability needs a set of exclusive and exhaustive alternatives. Wittgenstein must have thought that his system of propositions was sufficiently rigorous to allow a straightforward transformation of the classical definition. But it all hangs on the notion of independence. If two propositions are logically independent, if they have no truth-arguments in common (5.152), (i.e. if they have no elementary propositions in common), they do not necessarily give one another the probability 1/2, von Wright tells us that Wittgenstein must have realized his mistake and in the second edition we are told that two elementary propositions give one another the probability 1/2. What we then have is a set of exclusive, exhaustive and equally probable elementary propositions, i.e. a hidden principle of indifference.

For Wittgenstein probability is a logical relation between propositions. In A Treatise on Probability Keynes advocates a similar idea. Keynes began his work on probability in 1906 and it was almost completed in 1911; however, it was not published until 1921. In the preface Keynes says that he has ‘been much influenced by W. E. Johnson, G. E. Moore, and Bertrand Russell, that is to say by Cambridge’. It is known that Johnson already around 1907 entertained ideas similar to Keynes’, but they were not published until after his death. Thus, when Wittgenstein came to Cambridge in the autumn of 1911, probability theory must have been on the philosophical agenda. It seems therefore safe to say that Wittgenstein was as much influenced by Cambridge as Keynes. However, as a logical theory of probability Wittgenstein’s attempt in Tractatus is but a pale and incomplete counterpart of the theories of Keynes and Johnson.

At the bottom of Keynes’ theory we have a primitive logical (probability) relation. When this relation is measurable it tells us how strong an inference is from one proposition to another. The conclusive inferences of deductive logic are in Keynes’ theory replaced by objective inconclusive inferences. ‘Objective’ means that for any two propositions one and only one probability relation holds. If this relation has the degree \( \frac{k}{m} \), it is irrational to have any other degree of belief in the derived conclusion.

Ramsey’s key argument against Keynes is that this probability relation does not seem to exist. Ramsey says that he cannot perceive it and that he shrewdly suspects that no one else can. What is, he asks, the probability relation between ‘That is red’ and ‘That is blue’? Is it 1, 1/4, 1/9, 1/25, 1/64, 1/169, or? One could, of course, give up the idea of a primitive logical probability relation and instead make probability depend on ordinary logical relations. But can a logical relation justify a unique degree of belief? What logical relations justify what degrees of belief?

In a paper written in the autumn of 1922 and read at one of the meetings of the Apostles (20 October 1923) Ramsey briefly touches upon Wittgenstein’s theory of probability. In the first part of the paper he attacks Keynes’ view of induction. He then gives a simple example of the Tractarian view of probability. If p and q are elementary propositions, the probability of p,
given \( p \) or \( q \), is \( 2/3 \). If the disjunction is to be true, the propositions cannot both be false. Thus it is easily seen that \( p \) is true in 2 out of 3 cases.

Ramsey finds two objections to this theory. First, it is of almost no practical use. How do we know ‘the logical forms of the complicated relations of every day life’?\(^5\) Second, it definitely does not justify induction. The theory does not tell us how to make an inference from one set of facts to another distinct set of facts. And he might have added, third, it does not allow us to learn by experience. Following Wittgenstein, the probability of an elementary proposition, given any conjunction of elementary propositions (from which it is not entailed), is \( 1/2 \).

Ramsey’s own theory of probability avoids these difficulties. The basic idea is that probability is to be interpreted as degree of belief, i.e. to give the notion of probability a subjective interpretation. This requires the measurement of partial beliefs. He therefore showed how people’s beliefs and desires can be measured by use of a betting method and also gave a joint axiomatization of probability and utility. Given some intuitive rules of rational behaviour, a system of preferences among options, he could prove that the measure of our ‘degrees of belief’ satisfies the laws of probability.

A classical blemish that Ramsey succeeds in getting rid of is the principle of indifference. Keynes thought it possible to base it on purely logical conditions, but did not succeed in doing so. A careless reading of *Tractatus* seems to suggest that Wittgenstein could do without the principle. But this is not true, he simply hid it in the fabric of elementary propositions. Ramsey’s probability theory also gives a justification for the axioms of the calculus; Keynes’ theory has to assume the existence of a probability relation. In Ramsey’s theory probability knowledge is effectively accommodated.\(^5\) In Keynes’ theory my rational degree of belief is given by the probability relation (between the hypothesis and what is known for certain, the evidence) and in Wittgenstein’s theory by some logical relation (between sets of elementary propositions).

von Wright tells us that there are two poles in Wittgenstein’s thinking about probability. The one pole is the logical theory of probability as it is sketched in *Tractatus*. The other pole is the epistemological view of probability as it is briefly outlined in *Philosophical Remarks* and *Philosophical Grammar*. von Wright emphasizes that Wittgenstein’s later theory of probability is linked to the notions of imperfect knowledge and incomplete descriptions. But so is Ramsey’s theory! A subjective theory of probability handles probable knowledge and incomplete descriptions: that is the whole point. A subjectivist does not need any logical relations to guide his or her probability assessments.

We want our subjective probabilities to stem from as complete and accurate knowledge as possible. They should be well calibrated. The best way to calibrate them is to take account of well-established frequencies and objective probabilities. To bet 1 to 1 on the toss of an American penny is not to be well calibrated.\(^6\) Similarly it seems rather stupid not to follow the probabilities given by accepted physical theories. The same idea I think we can find in the later Wittgenstein’s writings on probability. To give an account of the relationship between frequencies and probabilities, you have to expand the bulk of knowledge by various hypotheses.\(^7\)

Wittgenstein says that the logic of probability is only concerned with the state of expectation in the sense in which logic is concerned with thinking. This could well be Wittgenstein’s understanding of what Ramsey was doing.

Wittgenstein’s upheaval of the Tractarian view also forced him to reconsider his view on probabilities. von Wright says that the bridge between the two poles in Wittgenstein’s thinking on probability is the idea of a probability which is relative to the bulk of our knowledge. One could say that some of the reasons for, and the drawings and material for this bridge come from Ramsey.

In *Tractatus* Wittgenstein argues that induction consists in accepting as true the simplest law that harmonizes with our experience (6.363). This procedure, however, has no logical justification, only a psychological one (6.3631). Ramsey, however, thought it would be a pity, out of deference to authority, to give up trying to say anything useful about induction.\(^8\)

Ramsey concludes the paper on induction that he read to the Apostles in 1923 by saying that: ‘a type of inference is reasonable or unreasonable according to the relative frequencies with which it leads to truth and falsehood. Induction is reasonable because it produces predictions which are generally verified, not because of any logical relation between its premiss and conclusion. On this view we should establish by induction that induction was reasonable, . . .’.\(^9\) In ‘Truth and probability’ we find the same idea again, but this time more fully developed. He says: ‘We are all convinced by inductive arguments, and our conviction is reasonable because the world is so constituted that inductive arguments lead on the whole to true opinions. We are not, therefore, able to help trusting induction, nor if we could help it do we see any reason why we should, because we believe it to be a reliable process’.\(^10\) That is, our conviction is justified because the world houses reliable processes; inductive arguments on the whole lead to success.

Hume’s problem is a problem of justification or validity. The premises of an inductive argument do not logically entail its conclusion. But what is
it that has to be certified? The truth of the belief? Of course not! General
beliefs carry no truth value; they are not judgments but rules for judging
“If I meet a φ, I shall regard it as a ψ”. What has to be certified is the
effectiveness of our general inferential habits or beliefs. The only way in
which this can be done adequately is by assuming the existence of under-
lying reliable processes.

Instead of accepting the Tractarian view Ramsey showed why some type
of rule-following, some beliefs, are better habits qua basis for action than
others. It is not because they are backed up by more evidence; that they
have proved successful in the past. It is because there are underlying
reliable processes or mechanisms accounting for our habits. Our habit of
acting as if all men are mortal is successful simply because there is an
underlying biological mechanism which more or less rapidly breaks down
our minds and bodies. We do not need to assume that we can account for
the underlying mechanisms or the reliable processes. No one has a clue to
the enigma of aging. But this fact does not make our habit less successful;
it is successful because there is an underlying mechanism.

Ramsey’s and the later Wittgenstein’s views on induction merit discus-


Cambridge devoted much of the thirties to digesting Wittgenstein. D. H.
Mellor has argued that, ‘the whole philosophical community, would have
been at least as well employed trying to digest Ramsey; and indeed that, but
for Ramsey’s early death, Wittgenstein’s own work, on which Ramsey had
a strong influence, would have developed more profitably than it did and
been digested less uncritically than it was’. Mellor is no doubt right
about this and I hope that what has been said above at least hints at the
influence Ramsey had on Wittgenstein. Ramsey is not just another key, but
the key to unlocking the interpretation of Wittgenstein. I am convinced
that Wittgenstein research would gain a lot from looking more closely at
this philosophical tryst.

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NOTES

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between Ramsey and Wittgenstein’ was published in the Proceedings of the 17th
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3 I am grateful to Mrs Margaret Paul for showing me this interesting remark of her
brother’s. She will discuss it further in the biography she is writing about Frank
Ramsey.

At one point (in 1929) Ramsey had obviously told Wittgenstein straight out that he
didn’t like his method of arguing: ‘I don’t like your method of arguing’. Ramsey’s
statement must have left Wittgenstein in disquietude; if not, why should he bother to
tell Moore about it? See G. E. Moore, ‘Wittgenstein’s lectures in 1930—31’, in

4 In ‘Facts and propositions’ (1927) he says: ‘My pragmatism is derived from
Russell; and is, of course, very vague and undeveloped’ (p. 5). But in 1927 he had
read Peirce. Thus, one reading of this line is that the type of pragmatism he wanted to
develop was not the sort he found in Peirce.

All references to Philosophical Papers, ed. by D. H. Mellor, Cambridge University
Press, Cambridge 1990. See also Mellor’s ‘Ramsey, Frank Pumpton’, in The Encyclo-
pedia of Philosophy, 1994, for a concise and excellent presentation of Ramsey’s
philosophical work.

4. Conclusions

Jaakko Hintikka and Mathieu Marion have showed us that the break in
Wittgenstein’s philosophy occurred in October 1929. Wittgenstein did
not live in a vacuum. To me he is very much a Cambridge product. The
eyt Wittgenstein was influenced by Russell, Moore, Keynes, Johnson and
other Cambridge philosophers: the later Wittgenstein by Ramsey.
5 A few things are mentioned in Moore's *Philosophical Papers, op. cit.*. We also have the letter that Ramsey sent to Trinity College in 1929 (on Moore's request) in support of Wittgenstein (op. cit., pp. 253–54). The recently published *Ludwig Wittgenstein: Wiener Ausgabe*, ed. by M. Nedo, Springer-Verlag, Wien 1994, reveals that one thing they talked about was general propositions and infinity.


7 P. 51.
8 P. 68.
9 P. 68.
10 P. 39.
11 P. 40.
12 P. 69.
13 P. 110.


16 It is astonishing how different they were. Philosophy for Ramsey was a pleasure, a joyful activity. For Wittgenstein it seems to have been tormenting, almost causing him physical pain. Ramsey's thinking was constructive; it aimed at solving problems, producing theories. Wittgenstein's thinking was destructive; it aimed at showing what cannot be done, what is impossible. Ramsey's work is well thought-out, all arguments are secured. Wittgenstein's work is open to a sea of interpretation, full of loose ends.


21 P. 79.


23 Wittgenstein says: 'Following a rule is a human activity', *RFM*, 3rd ed., p. 331. I have not, for reasons that are too obvious to be mentioned, touched on all aspects of the so-called 'rule-following argument'. However, I believe that also its "inductive" facets can be viewed from my perspective.

The Wittgenstein scholar might argue that if Wittgenstein was influenced by Ramsey on rule-following, there should not be a time lag between cause and effect. I do not think that this is too good an argument. Not all seeds start to grow at once: it depends on how germinative they are, but also on the quality of the soil.

24 P. 146.

25 P. 44.

26 In *The Philosophy of F. P. Ramsey*, Chapters 4 and 8, I point out that Ramsey's contribution to this problem is highly dependent on his theory of universals. In 'Universals' he forcefully argued that 'the whole theory of particulars and universals is due to mistaking for a fundamental characteristic of reality what is merely a characteristic of language' (p. 13). There is no intrinsic difference between universals and particulars. There are no negative or complex properties. Negative facts, like complex properties, are superstition and lead to a distorted view of reality. Ramsey found Wittgenstein's theory in *Tractatus*, 'that neither is there a copula, nor one specially connected constituent, but that, . . ., the objects hang one in another like the links of a chain' (p. 17) dogmatic, for it does not 'really explain any difference in the mode of functioning of subject and predicate' (p. 17). But it was the insufficient theories of Wittgenstein, Johnson and Russell, that inspired Ramsey to work on this classical problem. See also my 'Obtained by a reliable process and always leading to success', *Theoria* 57, 1991, pp. 132–49, and 'Ramsey, Frank Plumpton', in *A Companion to Metaphysics*, ed. by J. Kim and E. Sosa, Basil Blackwell, 1994, pp. 429–30.


28 P. 49.

29 P. 146.


31 Compare Ramsey's paper with what Moore writes in 'Wittgenstein's lectures in 1930–33', *op. cit.*, pp. 297–8:

In order to make clear exactly where the mistake lay, he [Wittgenstein] first said that in the case of such a universal proposition as 'Everybody in this room has a hat' (which I will call 'A'), he had known and actually said in the *Tractatus*, that, even if Smith, Jones and Robinson are the only people in the room, the logical product 'Smith has a hat, Jones has a hat and Robinson has a hat' cannot possibly be identical with A, because in order to get a proposition which entails A, you obviously have to add 'and Smith, Jones and Robinson are the only people in the room'. But he went on to say that if we are talking of 'individuals' in Russell's sense . . ., the case is different, because, in that case, there is no proposition analogous to 'Smith, Jones and Robinson are the only people in the room'. The class of things in question, if we are talking of 'individuals', is, he said, in this case, determined not by a proposition but by our 'dictionary': it is 'defined by grammar': . . . He went on to say that one great mistake which he made in the *Tractatus* was that of supposing that in the case of all classes 'defined by grammar', general propositions were identical either with the logical products or with logical sums. . . . He said that, when he wrote the *Tractatus*, he had supposed that all such general propositions were 'truth-functions'; but he said now that in supposing this he was committing a fallacy, which is common in the case of the Mathematics, e.g. the fallacy of supposing that 1 + i + 1 . . . is a sum, whereas it is only a limit, . . . He said he had been misled by the fact that (b) if a can be replaced by fa . . . fc . . ., having failed to see that the latter expression is not always a logical product: that it is only a logical product if the dots are what he called 'the dots of laziness', . . .

What Wittgenstein says 1930–33 is not too far away from what Ramsey wrote in 1929. In 'General propositions causality' Ramsey is objecting to the infinite character of the logical products and sums. He is also talking about a form of laziness, that 'which we cannot express for lack of symbolic power' (p. 146); and points out the relation to previous mistakes in Mathematics, 'Now this we never do with these variable hypotheti-
calls except in mathematics in which it is now recognized as fallacious' (p. 147). My guess is that it was Ramsey (the mathematician) who taught Wittgenstein that he in fact had committed a fallacy. In his lectures Wittgenstein also uses the word ‘dictionary’ a word frequently used by Ramsey in ‘Theories’ (written in 1929) a paper in which he is discussing very similar problems.


33 See von Wright, op. cit., p. 151.
34 In ‘General propositions and causality’, p. 149.
36 P. 54 in Weyl’s paper.
37 P. 55 in Weyl’s paper.
38 In ‘Mathematical logic’ Ramsey discusses Weyl’s position: ‘Weyl says that an existential proposition is not a judgment, but an abstract of a judgment, and that a general proposition is a sort of cheque which can be cashed for a real judgement when an instance of it occurs. ... [If, as Weyl says, an existential proposition is a paper attesting the existence of a treasure of knowledge but not saying where it is, I cannot see how we explain the utility of such a paper, except by presupposing its recipient capable of the existential knowledge that there is a treasure somewhere’ (pp. 253–4).
39 P. 131.
40 It might be interesting and productive to compare Ramsey and W. V. Quine on this point (R. C. Jeffrey has hinted that this is an interesting relation). Cf. Quine’s famous slogan ‘to be is to be the value of a variable’. See From a Logical Point of View, Harper Torchbooks, New York 1953. A more general comparison would also be interesting. Cf., for example, Ramsey and Quine on (i) logic (realism), (ii) truth (disquotational); (iii) scientific theories and (iv) pragmatism (American vs. British).
41 See The Philosophy of F. P. Ramsey, pp. 146–9.
43 P. 133.
45 Ramsey’s ‘Theories’ seems to have influenced Wittgenstein also in other ways. See Mathieu Marion, ‘Wittgenstein in transition: Phenomenology, hypothesis, and assertions’, unpublished paper.
48 It is most likely that it was Ramsey who taught him this in Puchberg. According to C. Lewy, ‘A note on the text of the Tractatus’, Mind 76, 1967, pp. 417–23, the relevant correction was made in the German text and is in Wittgenstein’s handwriting. In a letter to Wittgenstein, dated 15 of September 1924, Ramsey talks about ‘... a lot of corrections we made to the translation’ (see Lewy’s paper; Ludwig Wittgenstein: Letters to C. K. Ogden, ed. by G. H. von Wright, Basil Blackwell, Oxford 1973, p. 86; and von Wright, op. cit., pp. 108–9).
49 An interesting hypothesis is that we here have the seed of Wittgenstein’s abandonment of the completeness idea. However, it would take us too far away to discuss this surmise and I thus have to leave it for the time being.
51 Some parts of Keynes’ theory are discussed by Russell in his The Problem of Philosophy, Oxford University Press, Oxford 1986 (1912).
54 Notes on Philosophy, Probability and Mathematics, p. 300.
56 Don Saari has told me that throwing an American penny results in heads about 29% of the time. This frequency is supported by experiments carried out by his students every year since 1972.
57 See von Wright, op. cit., p. 159.
58 P. 87.
59 Notes on Philosophy, Probability and Mathematics, p. 301.
60 P. 93.
61 P. 149.
64 In the Wiener Ausgabe, Band 2, op. cit., there are a number of short remarks on probability. Wittgenstein, for example, says that:
- Wahrscheinlichkeit und Galtonische Photographie.
- Die Galtonische Photographie ist das Bild einer Wahrscheinlichkeit.
- Die Fragen über die Wahrscheinlichkeit hängen auf irgendeine Weise mit denen über die ‘Unbestimmtheit’ der Sinnessdaten zusammen.

Das Gesetz der Wahrscheinlichkeit ist das Naturgesetz was man sieht wenn man blinzelt. (pp. 101–2)

Wittgenstein relates a probability to an indistinct or foggy picture. This is odd because in one respect a probability statement is as exact or determined as anything else. On the other hand we might well perceive a state of uncertainty as imprecise and undetermined; as a picture of many states of the world.

Wittgenstein is also, like Ramsey, talking about ‘expectations’.
Alle /"begründete"/ Erwartung ist Erwartung daß eine bis jetzt beobachtete Regel weiter gelten wird.
Die Regel /aber/ muß beobachtet worden sein und kann nicht selbst wieder
/nur/ erwartet werden.
Die Theorie der Wahrscheinlichkeit hat es nur in so fern mit /dem Zustand/ der
Erwartung zu tun wie etwa die Logik mit dem Denken.
Die Wahrscheinlichkeit hat es vielmehr mit der Form und einem (gewissen)
Standard der Erwartung zu tun.
Es handelt sich um die Erwartung daß die zukünftige Erfahrung einem Gesetz
entsprechen wird, dem die bisherige Erfahrung entsprochen hat. (p. 129).

To my ears this sounds a lot more like "Truth and probability" than Tractatus. I also
believe that it supports what has been said above about rule-following.

See also Philosophical Grammar and Philosophical Remarks, op. cit.
65 Merrill B. Hintikka and Jaakko Hintikka, Investigating Wittgenstein, Basil
Blackwell, Oxford 1986, and Mathieu Marion, 'Wittgenstein in transition: Phenomenol-
ogy, hypothesis, and assertions", unpublished paper.
66 See the introduction to Ramsey's Philosophical Papers, p. xvii.
67 In his 'Ludwig's apple tree: On the philosophical relations between Wittgenstein
and the Vienna Circle', Scientific Philosophy: Origins and Developments, ed. by F.
Stadler, Kluwer, Dordrecht 1993, pp. 27—46, Jaakko Hintikka argues that Wittgen-
stein's philosophical views around 1932 were close to the views of some of the members
of the Vienna Circle (e.g. Carnap). And that they interpreted the Tractatus more
faithfully than 'Wittgenstein's own alleged followers'. This is probably correct, but what
Hintikka does not point out is that there is support for his thesis in Ramsey's work.
Ramsey was, I think, a trustworthy (faithful, whatever that means) interpreter of
Tractatus, and his reading of the book can preferably be compared to the interpretation
by members of the Vienna Circle. But, saying this, it is also important to emphasize that
Ramsey was not a positivist or logical positivist (see The Philosophy of F. P. Ramsey,
Chapter 5, op. cit.).

II
FORMAL TOOLS: INDUCTION,
OBSERVATION AND IDENTIFIABILITY