DOI: 10.1111/phin.12261
Philosophical Investigations ••:•• •• 2019
ISSN 0190-0536

Mathematics and the Mystical in the Thought of Simone Weil

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Abstract

On Simone Weil's "Pythagorean" view, mathematics has a mystical significance. In this paper, the nature of this significance and the coherence of Weil's view are explored. To sharpen the discussion, consideration is given to both Rush Rhees' criticism of Weil and Vance Morgan's rebuttal of Rhees. It is argued here that while Morgan underestimates the force of Rhees' criticism, Rhees' take on Weil is, nevertheless, flawed for two reasons. First, Rhees fails to engage adequately with either the assumptions underlying Weil's religious conception of philosophy or its dialectical method. Second, Rhees' reading of Weil reflects an anti-Platonist conception of mathematics his justification of which is unsound and whose influence impedes recognition of the coherence of Weil's position.

I. Introduction

In her discussion of what she calls *The Pythagorean Doctrine*, Simone Weil says something remarkable about the nature of mathematics:

> one does double harm to mathematics when one regards it only as a rational and abstract speculation. It is that, but it is also the very science of nature, a science totally concrete, and it is also a mysticism, those three together and inseparably.[1]

Rush Rhees, who had both a profound respect for the depth and originality of Weil's religious thought and a long-standing interest in the philosophy of mathematics, professed himself baffled by these remarks. Weil, he says, "adopts a Pythagorean view of mathematics, according to which pure mathematics is simultaneously a formal calculus and discipline, a theory of nature and of natural happenings, and a religious metaphysical doctrine. But I have *no* idea what it means, and I have just to

1. Weil (1976: 191).

back away and sit down. I do not know *what* Pythagoras recognised when he celebrated his geometrical discovery about triangles with a religious feast."[2] Nor is such a reaction altogether surprising. For the idea that mathematics as it is understood and practised in the modern world, may coherently be thought of as "a mysticism", seems bizarre.

Of course, if Weil's remarks concerned matters of minor importance in her thought, then a failure to understand her meaning would be of little consequence. This is not, however, the case. For on Weil's Pythagorean view, mathematics is regarded as a providential "bridge" between the world as we experience it through the senses, and the divine source of that order which both makes the objects of sense experience intelligible and constitutes the world as "Cosmos". The study of mathematics is, on this view, a means by which human beings may become better disposed not merely intellectually, but also ethically, to receive the gift of spiritual encounter with the divine.[3] In developing these ideas, Weil draws upon her understanding of ancient Greek mathematics and, especially, her reading of Plato. In so doing, her interest is not merely historical, it is contemporary. For Weil maintains that the wisdom of these ancient sources may be appropriated so as to create once more an understanding of man's place in the Cosmos which integrates the scientific search for knowledge and the human yearning for an absolute good.

The substance of these claims is, however, known to Rhees. Yet still he finds himself baffled by Weil's Pythagorean view of mathematics. Of course, in many respects the thought world of Plato's Athens is profoundly different from our own. While Plato's ethics remains relevant to contemporary ethical inquiry, interest in the ancient Greek understanding of mathematics is confined, in the main, to classical scholars and historians of mathematics. In marked contrast, Weil insists on the enduring relevance of Socrates' remarks in the Gorgias in which Callicles is criticised for his failure to understand the connection between the study of geometry and the development of good character.[4] But what is the connection, and can it be understood in terms which justify the claim that it has enduring relevance in ethics?

In assessing Weil's thought, it should also be remembered that she is a mystic as well as a philosopher. In some of the remarks in her *Notebooks,* it is genuinely difficult to know whether she is expressing a mystical insight or a philosophical proposition; or, perhaps, attempting to combine both. This difficulty appears to have been particularly troubling to Rhees. When

2. Rhees (2000: 88). The mathematical and religious insights which underlie the feast to which Rhees refers are discussed below as part of the exposition of Weil's Pythagorean view. See Footnote 23 for details.

3. This is not, of course, to suggest that, for Weil, the mathematical "bridge" is the *only* path by means of which human beings may be helped towards encountering the divine.

4. Gorgias 507d, quoted in Weil (1976: 155).

faced with texts which appear to him to contain serious and rather obvious philosophical blunders, Rhees sometimes draws back from outright criticism and reserves judgement out of concern that Weil may be expressing a truth apprehensible only at a higher, mystical level of understanding.

That said, it is also important not to exaggerate these difficulties. For Weil's main ideas concerning Greek mathematics are set out in traditional essay form and, on the face of it, are available to the reader as material suitable for rational appraisal. Indeed, it is precisely because Weil is *arguing* for the rational superiority of her views that they deserve to be evaluated on their merits. A necessary part of this evaluation is to take Rhees' critical remarks seriously, for, as Vance Morgan observes, if Rhees' identification of philosophical blunders is correct, then Weil's position is undermined, perhaps fatally.[5] Also deserving of consideration is Morgan's own claim that Rhees' failure to grasp Weil's meaning is due not to ambiguity or obscurity on her part, but rather to the influence on Rhees' thought of metaphysical presuppositions which hamper his own understanding.[6]

In order to elucidate and consider the merits of Weil's view, it will be useful, therefore, to frame the discussion in relation to the sharply contrasting positions of Rhees and Morgan. First, however, it is necessary to sketch in some detail the characteristics of Greek mathematics which, according to Weil, reveal it to be a "bridge" between the sensible world and the supposedly divine source of that order which constitutes the world as "Cosmos". Particular attention will be given also to Weil's readings of those Platonic texts to which she attaches special importance in developing her ideas on the conversion of the soul and its journey towards encounter with the divine. Of interest here is Weil's *appropriation* of Plato, and attention won't be paid to the validity or otherwise of her interpretation of the underlying texts in scholarly terms. With this background in place, it will then be possible to consider whether or not Weil's claims concerning mathematics are indeed beset by conceptual confusion, or whether, to the contrary, this aspect of her thought is not only coherent but perhaps also deserves considerably more attention than has hitherto been the case.

II. Mathematics as a "Bridge" between Creature and Creator

An outline of Weil's account of ancient Greek mathematics

In a letter to her brother, the distinguished mathematician André Weil, Simone Weil describes how the ancient Greeks saw

5. Morgan (2005: 81).
6. Morgan (2005: 87).

mathematics as a means of portraying the divinely constituted order of the Cosmos. As such, their aim was not the acquisition of knowledge for its own sake, nor was it to discover technological means to serve everyday human needs. Rather, it was "to conceive more and more clearly an identity of structure between the human mind and the universe. Purity of soul was their one concern; to 'imitate God' was the secret of it; the imitation of God was assisted by the study of mathematics in so far as one conceived the universe to be subject to mathematical laws, which made the geometer an imitator of the supreme law-giver."[7]

So conceived, mathematics is a providential means of portraying the order which underlies the diverse phenomena encountered in everyday experience. It is, therefore, a means of revealing aspects of the unity in diversity which characterises the world as 'Cosmos'. Viewed in this way, mathematics may be thought of as a "bridge" which assists in leading the human soul towards the divine source of order. This aspect of the soul's journey is both intellectual and ethical, because the divine order revealed is not only the object of contemplation, it is also the object of imitation. Moreover, in Weil's view, it is only in these terms that "the supernatural destination of science" may be understood.[8] Indeed, Weil regards the "Pythagorean" perspective as a crucial resource for addressing what she sees as a profound shortcoming in modern conceptions of science. By retrieving the wisdom inherent in the ancient view, Weil seeks to reconnect the scientific search for knowledge with the human yearning for an absolute good.

Mathematics is suited for its role as a "bridge" in virtue of both its formal qualities and its content. Mathematical truths, observes Weil, are discovered, not invented. Moreover, these truths exhibit a "mysterious" and non-accidental "appropriateness"[9] as means for portraying the order of the Cosmos. This appropriateness transcends human powers and, says Weil, is a "divine favour accorded to man which allows him to make use of number in a certain way as intermediary" between the One and the Many, between "unity, as man is able to conceive it, and everything that opposes his attempt to conceive it."[10] Mathematics must therefore, as far as possible, exhibit the precision and rigour which the Greeks believed to be essential when reasoning about divine matters. In particular, it must disdain the error and approximation which characterise

7. Weil (1965: 117-8).
8. Weil observes in discussing Plato's *Timaeus* that "This idea of the order of the world as object of contemplation and of imitation can alone make the supernatural destination of science understood". Weil (1976: 103).
9. Weil (1956: 514) quoted by Morgan (2005: 92).
10. Weil (1968: 18) quoted by Morgan (2005: 92).

unreflective everyday opinion concerning the world as we experience it through the senses.[11] Formal qualities alone, however, are insufficient to enable mathematics to serve as a "bridge" between the human and the divine. It is the use of number[12] as an "intermediary" which provides the means by which a depiction of divine order may be realised in mathematical terms. The intermediary in question is the mean proportional or geometric mean. For the mean proportional between two different numbers relates them to one another by establishing an equality of ratios. In this way, the order uniting two distinct, and to that extent contrary, quantities is revealed.

A simple example will illustrate the general principle. Consider the numbers 2 and 8. Their mean proportional is that number m, say, such that $2/m = m/8$. It follows that $2 \times 8 = m \times m$, and so $m = 4$. The same procedure can be followed for any pair of natural numbers and, more generally, for any pair of rational numbers.[13] But it soon becomes clear that by no means all such pairs have a rational number mean proportional. Consider the numbers 1 and 2. Their mean proportional, m, is that number such that $1/m = m/2$. That is, $1 \times 2 = m \times m$; hence, m is the square root of 2, denoted as $\sqrt{2}$. Clearly, $\sqrt{2}$ is not a natural number. More generally, it can be shown that it is not a rational number.[14] For this reason, $\sqrt{2}$ is called an irrational number; and yet it certainly exists. For, by Pythagoras' theorem, the length of the diagonal of a perfect square having sides of unit length is $\sqrt{2}$. Nor is this an isolated example, irrational numbers abound.[15]

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11. Weil (1987: 119).
12. In ancient Greek mathematics, numbers were represented geometrically by straight line segments, rather than algebraically as in modern mathematics. Thus, if the number 1 is represented as a line of a given length, then the number 2 may be represented as a line of twice that length, and so on. It follows also that all the numbers under consideration here are greater than zero. For ease of comprehension, the principles of the mean proportional, however, are explained here using familiar algebraic notation.
13. The phrase "natural numbers" refers to the positive integers or, in everyday speech, "whole numbers". "Rational numbers" are those which may be expressed as the ratio of two integers. Obviously, all natural numbers are rational, but not necessarily vice versa. Thus, 1 and 2 are natural numbers and therefore rational, being expressible as 1/1 and 2/1, respectively. The number 1/2, however, is a rational but not a natural number.
14. If, contra hypothesis, $\sqrt{2}$ is rational, then it can be expressed in its lowest terms as the ratio of two integers, r/s, say. It then follows that $r^2/s^2 = 2$ and hence that r^2 is an even number. But if r^2 is even, then r itself must be even, for the square of any odd number is odd. So $r = 2t$, say. Hence, $(2t)^2 = 2s^2$ and so s is also even. But this means that both r and s are even, which contradicts the assumption that r/s is a ratio in its lowest terms. Thus, the hypothesis is proved.
15. For example, all rational multiples of irrational numbers are themselves irrational; thus, $\sqrt{2}$, $2\sqrt{2}$, $3\sqrt{2}$, $4\sqrt{2}$, $5\sqrt{2}$, and so on, are all irrational numbers. Moreover, the square root of any prime number is irrational, and there are infinitely many prime numbers. Examples of irrational numbers are legion.

It was Eudoxus who framed a more general understanding of number which encompassed both the rationals and irrationals.[16] Weil maintains that, thereby, Eudoxus provides "a definition of proportion which constitutes the theory of generalised number".[17] The details are not important here. What is important is what Weil takes to be the philosophical significance of examples of the sort we have been considering.

In the first example, 2 and 8 are related by means of their mean proportional 4. The mean proportional mediates between the two numbers by acting as a common measure. However, in the second example, 1 and 2 are related by means of their mean proportional $\sqrt{2}$ which is irrational and, as such, does not belong to the class of rational numbers containing both 1 and 2. The number $\sqrt{2}$ is, therefore, not a common measure. Nevertheless, the irrational number $\sqrt{2}$ mediates between the two rational numbers. It is an example of what Weil calls "mediation from above", which, in this case, is mediation which transcends the realm of common measures. This illustrates an important point of principle, because it shows that the scope of mathematics to depict the regularity which underlies the variation in what we observe in the world is not limited to instances where the quantities concerned admit of common measure. This is important when the phenomena in question vary continuously over time. A case in point is Thales' investigation of the varying length of shadows cast by stationary objects exposed to the sun. The ratio of an object's height to the length of its shadow varies continuously over time, but at any given time the value of the ratio is the same for all objects. Weil maintains that with this discovery, "the idea of variable proportion, which is function, was born".[18]

Mediation "from above" by an irrational mean proportional also illustrates a second important principle. The logic of the procedure is dialectical. The thesis is that "1 and 2 may be related by means of mediation". The antithesis is that "no mediating rational number exists". The synthesis is that "the mediating number, $\sqrt{2}$, exists but is irrational". It is by ascending to a higher, more general perspective, embracing both rational and irrational numbers, that the contradiction between thesis and antithesis may be transcended.

This is an example of that dialectical movement of thought which Weil likens to a "ladder" of ascent.[19] Its significance is described in Weil's commentary on Plato's parable of the cave: "it is contradiction

16. Eudoxus' "insight was that if the definition of number is expanded to cover the relative magnitude of lines, then the number system can include both rational and irrational numbers in what we would call the *real* number system." Morgan (2005: 123).
17. Weil (1968: 20).
18. Weil (1968: 20).
19. Weil (1956: 412).

which evokes thought… [For] whenever the intelligence is brought up against a contradiction, it is obliged to conceive a relation which transforms the contradiction into a correlation [of contraries], and as a result the soul is drawn upwards."[20] Within Greek mathematics, the relation between contradictories is that of ratio. In the example we have just considered, it is the equality of ratios, established by the mediation of the mean proportional, which transforms the opposition of contradictory theses into a correlation of contraries. Indeed, so important is the role accorded to ratio that Weil describes Greek mathematics as the very "science of this kind of ratio".[21]

According to Weil, the establishing of an equality of ratios between the numbers 1 and 2 acquires still greater significance once it is recognised that, within Greek mathematics, it is a way of imaging the relation between the One and the Many, between Unity and Plurality. Indeed, in modern mathematics, echoing the Greeks, the number 1 is still sometimes referred to as "unity". It should also be remembered that, for the Greeks, number was represented by line segments; so that, for example, the sum of two numbers was represented by the line segment which joins end to end the segments representing the two numbers in question. The depiction of numerical relationships was, therefore, geometric and not, as is usual in modern mathematics, algebraic.

Given the significance of mediating mean proportionals within ancient Greek mathematics, it became imperative to find a general geometric method for determining the mean proportional for *any* given pair of numbers. Weil describes how the discovery of the geometry of similar triangles led, in turn, to the realisation that mean proportionals could be determined in general by constructing a particular kind of right-angled triangle.[22] The related discovery that the locus of the apices of all the right-angled triangles sharing the same hypotenuse is the enclosing semicircle having the hypotenuse as its diameter led, according to Weil, to

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20. Weil (1968: 113).
21. Ibid.
22. Given any two numbers m and n, say, the line segment representing m + n is first constructed. This compound line segment is then taken as the hypotenuse of a right-angled triangle from which the mean proportional of m and n will, in turn, be constructed. First, however, it is necessary to determine the apex of the triangle in question. The locus of the apices of all right-angled triangles having the compound segment as hypotenuse is the semicircle which has that segment as its diameter. So we know that the apex we are seeking lies somewhere on the semicircle. The next step, therefore, is to construct the semicircle and then construct a perpendicular line from the diameter/hypotenuse at precisely that point where the two initial segments m and n were joined together. The point of intersection between the perpendicular and the semicircle is then the apex of the particular right-angled triangle we are seeking. The mean proportional of m and n is that part of the perpendicular between the apex of the triangle and its point of intersection with the diameter/hypotenuse.

the realisation that the geometry of mean proportionals has its source in the divine. This is the realisation whose religious significance baffles Rhees.[23] But, for Weil, the significance is evident once it is understood that it is the geometry of right-angled triangles which provides a general method for the construction of mean proportionals and, furthermore, the line mapped out by the apices of *all* such triangles sharing the same hypotenuse is the enclosing semicircle; the divine significance follows immediately, precisely because the circle, in its perfect unity and symmetry, was held to symbolise the divine.

The portrayal of the order of the cosmos in mathematical terms

With the main elements of Weil's account of ancient Greek mathematics in place, it is now possible to see how, for her, the "science of ratio" may be conceived as depicting the divine order which unifies the Cosmos. The central idea is that "the mean proportional was... [for the Greeks] the image of the divine mediation between God and his creatures."[24] So conceived, the mean proportional is a mathematical analogue of the metaphysical relation between God and Cosmos. This is the basis for the analogy of proportion which enables mathematics to be used to depict aspects of the divinely constituted order of the Cosmos and, thereby, act as a bridge between creature and Creator.

Weil maintains that analogies of proportion are quite distinct, logically, from analogies of resemblance. Moreover, she denies that there is any resemblance whatever between creature and Creator. The basis of the analogy of proportion is the deeply mysterious "divine favour" which allows the geometric necessity of mathematics to be used to depict the physical necessity of the Cosmos.

Weil is at pains to emphasise the limits and constraints inherent in any such depiction. For in constructing any mathematical model of physical phenomena, it is necessary to limit attention to a very small subset of the innumerable conditions which apply to any such phenomena.[25] Moreover, when thinking in mathematical terms, the geometer employs the properties and relations of objects of thought such as lines, angles, and so on, objects which transcend not only any attempt at representing them by means of diagrams, but also the very temporal domain in which physical phenomena, as such, exist. Thus, says Weil, "In order to think

23. This is the realisation which underlies the celebratory feast mentioned by Rhees in his remarks quoted in the introduction to this paper: see Footnote 2 above for more details.
24. Weil (1952: 278) quoted in Morgan (2005: 111).
25. Weil (1968: 33–34).

mathematically, we put aside the world; and at the end of this effort of renunciation the world is given us like a bonus. It is given, indeed, at the price of an infinite error, but nonetheless really given."[26] How this is so is "impenetrably obscure", she says. Yet it is so.

It was mentioned earlier that Weil maintains that, for the Greeks, it was important that mathematics should, as far as possible, reflect the certainty and rigour considered appropriate to divine matters. Thus, mathematics must eschew the error and approximation typical of commonplace opinion based on sense experience. Nevertheless, the certainty of mathematics, as epitomised by the geometry of Euclid's Elements, is not taken to be absolute. For the Euclidean framework embeds in its axioms and definitions "hypotheses" which are assumed and not proved.[27] Moreover, what mathematics gains in comparison with beliefs based on sense experience comes at a price. For correlated with the gain in certainty is a loss in conceivability. To illustrate this point, Weil draws attention to the mathematics of the real number system which, although it proceeds with complete rigour, deals with relationships which cannot be grasped by the imagination in the seemingly straightforward way that applies to the arithmetic of the natural numbers. Accordingly, Weil maintains that to mathematics belongs only that "intermediate degree of certitude… [and] inconceivability" appropriate to a mode of thought which is itself a "mediation" between the "uncertain and [yet] easily grasped thoughts about the sensible world… [and] thoughts of God which are absolutely certain and [yet] absolutely inapprehensible."[28]

These remarks are based on Plato's "Analogy of the Divided Line" in *Republic* 509d – 511e. Weil is, however, well aware that the depth and significance of Plato's insight may elude contemporary understanding: "Today we can no longer conceive this because we have lost the idea that absolute certainty belongs only to divine things. We want certainty for material things. For the things which concern God, we are satisfied with belief."[29] In contrast, the influence of Plato's insight is evident in Weil's observations concerning her own understanding of the divine: "I am quite sure that there is a God in the sense that my love is not illusory…. I am quite sure nothing real can be anything like what I am able

26. Weil (1968: 41).
27. I use the term "hypotheses" here, since this is often used in translations of *Republic* VI in which the "Analogy of the Divided Line" occurs. The paradigm surviving example of such "hypotheses" is the list of "Definitions" and "Postulates" found in Euclid's Elements Book 1. M. F. Burnyeat's discussion of these Euclidean "hypotheses" and their significance in relation to *Republic* VI is valuable background material concerning Socrates' dialogue with Glaucon. See Burnyeat (2000: 22–33).
28. Weil (1976: 164–165)
29. Weil (1976: 165).

to conceive when I pronounce this word. But that which I cannot conceive is not an illusion."[30]

Weil's appropriation of Plato's Analogy is of great importance in her thought. In doing so, she follows Plato, as she interprets him, in regarding knowledge attainable by the use of human reason alone – exemplified in the mathematical depiction of the order of the Cosmos – as being of value not primarily for itself, but rather as a means of disposing the soul towards the action of divine grace. For, on this view, the reception of divine grace is essential in order to progress from knowledge of the Cosmos to knowledge of the divine source of its order. Weil sharply distinguishes this view from that which she attributes to Aristotle: "The wisdom of Plato is not a philosophy, a search for God by means of human reason. Such a research was made as well as it can be made by Aristotle. Plato's wisdom is nothing but an orientation of the soul toward grace."[31]

The journey of the soul to god

It is implicit in Weil's view that the study of mathematics, "the science of proportion", involves becoming acquainted with the way in which mathematics serves as a mediation, or intermediary, between thought about the sensible world and thought concerning the divine. Indeed, we have already seen how mathematics mediates between the radically different degrees of certainty and inconceivability which apply in these two realms of thought. Mediation takes place also in another sense. For Weil maintains that mathematical models of sensible phenomena not only provide "a precis of the necessity which governs sensible things" but serve also as "images of divine truths".[32] So conceived, both the study of mathematics and its employment in modelling sensible phenomena are saturated with religious significance.[33] Moreover, there can be no sharp distinction between the mathematical and scientific domains on the one hand, and the religious on the other, in the way which is taken for granted in the modern world. Indeed, the sharp distinction lies between Weil's view and the modern.

30. Weil (1987: 103).
31. Weil (1976: 85).
32. Weil (1976: 165).
33. Thus, Weil (1968: 21): "The blind necessity which constrains us, and which is revealed in geometry, appears to us as a thing to overcome; for the Greeks it was a thing to love, because it is God himself who is the perpetual geometer... [the Greeks] searched everywhere – in the regular recurrence of the stars, in sound, in equilibrium in floating bodies – for proportions in order to love God."

From a modern perspective, if any connection is posited between mathematics or science and the divine, then such a relationship must be external or contingent. That is to say, *a priori* there can be no connection which is inherent in the meaning of mathematical or scientific truths as such. But this is precisely what Weil denies. On her account, the connection in question is internal or conceptual. This follows because the world whose order is being investigated is conceived of and experienced as "Cosmos", that is, as a divinely ordered unity. And the purpose of this investigation is, as we have seen, primarily ethical and religious. It is directed towards the contemplation and imitation of the divine.[34] On this view, mathematics is inherently, even if only implicitly, religious in its significance.[35] For this reason, Weil is perfectly consistent in maintaining a tripartite view of mathematics according to which it is "a rational and abstract speculation... the very science of nature... [and] a mysticism, those three together and inseparably."[36]

As we have seen, Weil regards the possibility of using the atemporal and immaterial objects of geometry[37] to portray successfully the order which underlies the temporal and material Cosmos, as an inexplicable divine favour.[38] The "images of divine truths" which result are, therefore, fitting objects of ethical and religious contemplation. This contributes, in turn, to a purification of the soul as the divine order which is portrayed is gradually assimilated. In this way, the soul of the geometer becomes more and more attuned to the harmony of divine wisdom.[39]

34. c.f. Weil in a letter to her brother, the mathematician Andre Weil: "I think therefore that from a fairly remote antiquity the idea of proportion had been a theme of a meditation which was one of the chief methods... of purifying the soul. There can be no doubt that this idea was at the centre of Greek aesthetics and geometry and philosophy." Weil (1965: 117)

35. Obviously, the converse does not hold. Weil is not proposing that *all* religious thought is mathematical.

36. Weil (1976: 191).

37. Perfectly straight lines, for example.

38. Weil maintains that just as lines drawn on a chalkboard allow us to imagine, say, the perfectly straight line of geometry, so observations of the movements of the stars, for example, allow us to imagine the circular and uniform movements incorporated in mathematical models of the heavenly bodies. In neither case, she says, is there any resemblance between what we see and what we imagine. The relation in question remains "impenetrably obscure." Weil (1968: 34) The reference to what we "imagine" does not mean that Weil is arguing that the order in question exists only 'in the mind'. It may seem so, but, says Weil, if that were really the case, then from where do the "necessities and impossibilities which are attached" to these ideas come from? Weil (1968: 36) This is, according to Weil, an "irreducible mystery". (Ibid.)

39. Relatedly, Weil speaks of a deep seated human desire to "dwell in eternity" and attain a comprehensive view of what exists which transcends the spatio-temporal limitations inherent in our embodied existence. Weil (1968: 17) We seek, thereby, to apprehend and imitate that unity which underlies material plurality, and which is of divine origin.

This process of purification is both intellectual and ethical in nature.[40] Moreover, such a purification is possible only if, through the action of divine grace, the soul is disposed to the love of God. So disposed, the soul seeks that perfection of divine truth which is portrayed in geometry, and that perfection of divine goodness which is expressed in what Weil terms "supernatural morality", in contrast to merely "social morality"[41] which, in one form or another, is characteristic of all forms of human society. In her commentary on Plato's "Parable of the Cave", Weil portrays the radical ascesis which is necessary for this purification to become fully effective.[42] The journey from that "natural wisdom" which lies within the scope of human powers to that "supernatural wisdom" which is the gift of God accepted by the human will, is arduous in the extreme. It involves "a violent and painful… rending"[43] in order to attain that detachment from the world of "becoming" which is necessary for the soul to progress towards that relationship with God which is its true goal.

The climax of this journey occurs when the soul receives enlightenment concerning the nature of "the good in itself". Weil maintains that Plato is "very reticent" about how this enlightenment is attained,[44] and Weil's own account is similarly difficult to make sense of in any detail. This is, perhaps, unsurprising, since the encounter with the divine is not only intellectual but also, presumably, deeply mystical. Weil does, however, provide at least the beginning of an outline of what the intellectual dimension involves; via the intermediary of mathematics, dialectical reasoning is used to move beyond reliance upon the assumed "hypotheses" of Euclidean geometry, towards an apprehension of the metaphysical bases on which these hypotheses depend. It is grasping what "each thing is in itself" which leads, it seems, to an apprehension of "the nature of the good in itself".[45]

III. Rhees' Criticism of Weil

Weil's view of the world as a divinely ordered "Cosmos" establishes a context within which philosophy itself has a religious orientation. For in

40. It is also aesthetic in nature, since the re-orientation of the soul is toward that goodness, truth and beauty which is of divine origin. A discussion of the aesthetic dimension, however, is beyond the scope of this paper.
41. Weil (1968: 99) Weil ascribes merely social morality to the "herd".
42. Weil (1968, 108 et seq.).
43. Weil (1968: 110).
44. Weil (1968: 114) quoting from *Republic* 532 a-b.
45. Weil (1968: 114).

both mathematics itself and in reasoning philosophically about mathematics, Weil's method is dialectical. As such, Weil seeks to transform contradictory theses into a correlation of contraries by breaking through to a higher, more comprehensive, perspective. From such a perspective, differences which are irreconcilable at the lower level are transcended and thereby, she says, "the soul is drawn upwards".[46] The advance here is not only intellectual, it is also spiritual and ethical. For the soul is drawn upward to God. And this applies to both mathematics and philosophy as Weil conceives them.

At this point, it is perhaps useful to be a little clearer about what is and what is not entailed when describing Weil's view of philosophy and its context as "religious". First, while Weil draws upon her reading of Plato, her own, more developed, view of God belongs within the spectrum of views commonly termed "classical theism".[47] For Weil, the existence and order of the Cosmos originates in God. On this understanding, God is neither a Platonic demiurge, nor, more generally, is God an object within or alongside the Cosmos; nor, again, is God a member of any natural kind. Indeed, one could go further still and say of Weil's view that it is more than merely theistic in character, it is also theocentric.

Against this background, Weil's dialectical "ladder" of ascent not only yields intellectual insight but also has spiritual and ethical meaning. This connection, moreover, is not contingent, it is logical: in the context in question, it is part of the *meaning* of the dialectical argument and its conclusion that it has not only intellectual but also ethical and spiritual significance. That said, it is important also to emphasise that Weil's religious view of philosophy does not entail that her arguments are intelligible only to those who share her religious beliefs or are in receipt of some special divine grace. Nor, *a fortiori*, does it entail that her views are immune from criticism by those who do not share them. Indeed, as we have seen, Weil maintains that the point of view for which she is arguing is superior to those dominant in secular modernity. It is hard to see how this could make any sense whatever if she maintained also that her own position was immune from criticism from the perspective of its rivals.

Rush Rhees' approach to philosophy is markedly different. While Rhees is deeply interested in religious uses of language and their related practices as objects of philosophical reflection, his view of philosophy is

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46. Weil (1968: 113).
47. This is true, notwithstanding the fact that Weil's view of divine creation is highly unusual. On her view, divine omnipotence is restricted or diminished as a necessary condition of bringing a less than perfect Cosmos into being. For a brief overview of Weil's views on creation, see von der Ruhr (2006: 120–122). For a much more detailed discussion, see McCullough (2014), Chapter 3, "God and the World".

in no sense religious. Indeed, for Rhees, philosophy as such is sharply distinguished from its objects of inquiry, whether they lie within the religious domain or any other. His method, moreover, is analytic. Following Wittgenstein, Rhees seeks to dispel those philosophical confusions which arise when importantly different uses of concepts are run together. Rhees' approach, therefore, is to pay scrupulous attention to *differences* of usage between one domain of language use and another. Where Weil seeks to transcend such differences by means of a dialectical "ladder of ascent", Rhees is, in general, content to hold fast to the differences and – apart from dispelling confusion – "leave everything as it is".

Given these two very different conceptions of philosophy, it is unsurprising that Rhees is frequently troubled by Weil's attempts to draw analogies between what seem to him very different domains of thought and language use. Thus, Weil draws an analogy between "the faithfulness of a right-angled triangle to the relationship which prohibits it from leaving the circle whose diameter is the hypotenuse, and that of a man who refrains from acquiring power or money at the cost of a fraud, for example. The former could be seen as the perfect model of the latter".[48] Rhees, however, is struck by the apparent dis-analogies. For instance, if a moral alternative is dismissed as "unthinkable", this is not, says Rhees, because we cannot understand what it means. Quite the contrary. By contrast, what is mathematically "unthinkable", literally makes no sense and, therefore, cannot be understood. Weil, observes Rhees, appeals to analogous senses of "fidélité", but provides us "with no clue as to what the precise meaning could be."[49]

Similar difficulties arise concerning Weil's conception of "beauty". Weil, says Rhees, speaks of "the 'beauty' of mathematical proofs, of the beauty of a natural science, of the beauty of a dramatic tragedy, of the beauty of a piece of music – as though anyone can see that one means the same in each case."[50] Rhees, however, doubts that mathematics is beautiful in any sense. Moreover, he maintains that when Weil discusses the beauty of the order of nature, it sometimes seems that she is referring to nature's uniformity. But uniformity in that sense, objects Rhees, "would give nothing like the unity of a beautiful object."[51]

48. Rhees (2000: 56). Rhees here comments on and translates Weil's remarks from the original French text – Weil (1951: 156). These remarks occur in a slightly different translation in Weil (1976), a volume which, it should be noted, is not simply a direct translation of the French original, since some material is reordered and additional material from Weil (1955) is also included.
49. Rhees (2000: 56).
50. Rhees (2000: 90).
51. Rhees (2000: 91).

While many similar examples could be considered, there is enough here to illustrate a striking characteristic of Rhees' approach when appraising the merits of Weil's philosophical reflection. Rhees' attention to differences of meaning is given such prominence that the question of whether, despite such differences, there may in fact be an underlying unity sufficient to support a dialectical "ladder of ascent", is never properly addressed. This is an important omission. For it is part of the logic of analogy – as distinct from identity – of meaning, that *some* dis-analogies exist. Whether an analogy is weak, therefore, depends on the significance of the dis-analogies in question, and an evaluation of significance requires a context relative to which such an evaluation can take place.

The context within which Weil's philosophical dialectic operates, is, as we have seen, religious; and it follows that any adequate critique of the merits of Weil's use of analogy must be sensitive to that fact. But, as Rhees ploughs on and on uncovering more and more differences of meaning, one is left with a growing suspicion that he is simply unaware of the crucial difference between his own conception of philosophy and that of Simone Weil. Or perhaps, more charitably, one might say that to the extent that Rhees is aware of this difference, it seems to play little substantive part in informing his discussion of Weil's philosophical writing.[52]

For example, when Weil draws an analogy between the "fidélité" of the right-angled triangle to mathematical necessity and that of the good man to the demands of justice, she is well aware of the apparent dis-analogies. Indeed, in the preceding paragraph, we read: "Justice for man presents itself first as a choice, choice of the good, rejection of evil. Necessity is the absence of choice, indifference."[53] The contrast is evident. Indeed, it is so sharp that the demands of necessity and those of the good seem plainly contradictory. But Weil's concern is to move beyond contradiction and, by means of dialectical reasoning, establish a transcending correlation of contraries, and the context of her reasoning is religious.

For Weil, mathematical necessity is an intermediary between matter and God. For it is by means of mathematics that we are mysteriously able to model the order underlying the material world of which we are, according to Weil, almost entirely a part. It follows that mathematical necessity is also an intermediary between the material part of the human

52. Of course, Weil may have been able to counter Rhees' objections case by case. The question at issue here, however, is not the validity, or otherwise, of specific objections, but the significance attached to them by Rhees in trying to understand Weil's point of view.
53. Weil (1976: 189).

being and that "infinitely small portion of himself which does not belong to this world".[54] It is this spiritual part of the soul which has the capacity to transcend the submission of matter to material necessity and move towards a moral perspective in which submission gives way to consent; consent to the "co-existence with ourselves of [all] beings and of things".[55]

According to Weil, this consent is an adherence to the creative will of God; it involves, therefore, a loving acceptance of that necessity which opposes our drive to subordinate other beings and things to the achievement of our own ends. Weil regards such consent as a state of moral perfection in which one becomes "identical with [one's] own vocation".[56] Such a vocation is, of course, a call from God, a call to become what one is created to be. The attainment of this state is assisted by contemplation of the "fidelity of things, either in the visible world, or in their mathematical relationships or analogies."[57] But Weil also insists that the consent which results is "the work of Grace alone".[58] Contemplation is, therefore, a way of cooperating with and accepting the work of divine grace.

It is now possible to see why Weil proposes the "fidélité" of the right-angled triangle to mathematical necessity as an analogy of moral perfection. The analogy concerns perfect adherence to the creative will of God. It is possible also to see that, from the supernatural perspective of moral perfection, the contradiction between goodness and necessity which is evident in the natural order is transcended. The contradiction becomes a correlation of contraries. But the use of the term "supernatural" is apt to mislead. While it is the case that Weil maintains that the state of moral perfection is the fruit of divine grace, it is not the case, as Rhees maintains,[59] that what Weil is talking about is properly intelligible only to those in receipt of such grace.

Despite paying close attention to the details of Weil's discussion of necessity and "fidélité", Rhees appears blind to both the dialectical thrust of Weil's argument and the religious conception of philosophy which that argument, in turn, reflects. This is very clear when, in an attempt to

54. Weil (1976: 182).
55. Weil (1976: 189).
56. Weil (1976: 190).
57. Weil (1976: 190).
58. Weil (1976: 187).
59. "Much of what Weil writes about necessity, about the use of mathematics in the study of science, the study of what things are, how they are related to one another, much of this is an expression of something which could not be understood except by someone who had known the grace of God as she did. It needs not only religious faith, but a kind of religious insight, in order to understand the phrases or the figures or the grammar of what she writes." Rhees (2000: 64)

come to terms with his own perplexity, Rhees remarks that "however much I study her later writings on *science*, I do not think that I have learned anything at all. I am inclined to say that what she wrote then is not philosophy but religious meditation.... I feel like complaining that she *mixes up* philosophy and religious meditation".[60]

It is one thing, however, to identify such "blindness", it is quite another to account for it, especially when the "blindness" in question concerns a philosopher of Rhees' undoubted calibre. We have noted already the sharp difference between Weil's view of philosophy and that of Rhees, but, as will become clearer in the next section, there is a good deal more at play here than radically different conceptions of philosophy. With this in mind, it is time to consider Vance Morgan's critique of Rhees.

IV. Morgan's Critique of Rhees

Morgan's discussion of Rhees' response to Weil's philosophical writing occupies a short section within his *Weaving the World: Simone Weil on Science, Mathematics and Love*,[61] which is a lucid and richly informative exposition of Weil's views in this area. Morgan takes note of Rhees because he judges, rightly, that if Rhees' critique is sound, then it threatens to undermine the very coherence of Weil's views.

Morgan acknowledges that, for Rhees, the most troubling aspect of Weil's approach is her apparent equivocation in the use of philosophically significant concepts. As a representative example, Morgan considers Rhees' remarks, quoted above, concerning Weil's apparently indiscriminate use of the concept of "beauty". However, in taking issue with Rhees' underlying assumption that religion and science/mathematics are sharply distinct domains of thought and language use, Morgan fails to acknowledge that there *are* in fact considerable, and philosophically significant, differences in the use of concepts between these areas. So far as that goes, Rhees is correct, and one does not have to subscribe to Rhees' underlying assumptions to concede as much. Indeed, Weil herself, as we saw in the previous section, is well aware of such differences. The differences are not ignored by Weil's approach, they are transcended. But this is not at all clear from Morgan's discussion of Rhees. As a result, Morgan's subsequent defence of Weil's view, over and against that which he attributes to Rhees, remains vulnerable to the charge that by ignoring the merits of Rhees' remarks he fails to address adequately the critique which they express.

60. Rhees (2000: 86).
61. Morgan (2005).

Difficulty arises also concerning Morgan's characterisation of Rhees. In seeking to reveal the metaphysical assumptions which he claims underlie Rhees' approach to philosophy, Morgan moves from correctly identifying Rhees' sharp distinction between science (and mathematics), religion and philosophy to the more problematic claim that Rhees believes that these *cannot* be complementary activities.[62] Morgan supports this claim by drawing an analogy between Rhees' position and that adopted by Blaise Pascal: "Rhees would undoubtedly", says Morgan, "have entirely understood and agreed with Pascal's decision to leave mathematics behind in order to pursue contact with God, not because the one pursuit is necessarily better than the other but because the two are essentially incompatible pursuits."[63]

The difficulty with this claim is that if Rhees really believes religion and science/mathematics to be essentially incompatible, then consistency demands not only that he fails to understand the Pythagorean view, but also that he holds such a view to be unintelligible. How, after all, could the view that mathematics is a bridge to the divine be intelligible if mathematics and religion are essentially incompatible? But Rhees does not claim that such a view is unintelligible. Speaking of Weil, he maintains that "She sees in geometry what most of us do not and cannot see there… although it may be that Pythagoras did."[64] Rhees' position is that such views are, to most of us, at least, inapprehensible. He does not declare them to be unintelligible, as such.[65]

In that case, how is Rhees' inability to make sense of central aspects of Weil's Pythagorean view of mathematics to be explained? The sharp distinctions already noted are undoubtedly part of the answer, but alone they are insufficient as an explanation. For such distinctions in themselves do not preclude, though they make more difficult, entering sympathetically into the thought world of Plato's Athens. Indeed, Rhees' own reading of Plato reveals *some* individual insights of just such a sympathetic imagination.[66] Moreover, the sharp distinctions held by Rhees

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62. "If Rhees' belief that religion, philosophy, science and aesthetics cannot be complementary activities is correct..." Morgan (2005: 86)

63. Morgan (2005: 86). I leave aside the question whether or not Pascal held such a view.

64. Rhees (2000: 67).

65. It is of little help, it seems to me, to defend Morgan's portrayal of Rhees by "biting the bullet" and claiming that Rhees is simply inconsistent in his thought. For the attribution to Rhees of views concerning the *essential* incompatibility of two domains of thought is implausible in itself. Rhees has no truck with "essentialism" under any guise.

66. See, for example, the remarks concerning Plato's philosophy and Weil's view of "necessity" in Rhees (2000: 45–50). Whether Rhees does justice overall to the religious thrust of Plato's philosophy is doubtful. Nevertheless, he is by no means completely incapable of sympathetic imagination.

are hardly unique to him; they are a commonplace in modernity. Nevertheless, genuinely sympathetic and insightful classical scholarship is far from impossible to find.[67] More is needed, therefore, than Rhees' sharp distinctions; and that more, I suggest, is to be found in Rhees' philosophy of mathematics itself.

V. Rhees' Philosophy of Mathematics

Rhees' most substantial piece of writing in the philosophy of mathematics is entitled *On Continuity: Wittgenstein's Ideas, 1938*,[68] which comprises one rather long chapter in Rhees' *Discussions of Wittgenstein*.[69] However, in this chapter, in marked contrast with the others in this volume, Wittgenstein is scarcely mentioned save in the chapter title. Indeed, in terms of style, the argument is presented exactly as though it is Rhees' own view. It seems reasonable to conclude, therefore, that on this subject Rhees' view accords with that which he attributes to Wittgenstein. Of interest here is the first half of Rhees' argument, which sets out a critique of what he calls the "received view" in the philosophy of mathematics – a view which is clearly Platonism, though that term is not used – together with what amounts to an outline of a Wittgensteinian account.

Taking geometry as an example, Rhees maintains that according to the received view geometry is "almost a kind of physics of ideal or geometrical objects".[70] Almost, but not quite. For although geometry is concerned to discover the laws which order and the properties which characterise its field of enquiry, it employs exclusively *a priori* methods and eschews both experiment and sense perception. But, says Rhees, in geometry and in mathematics more generally, key concepts are employed whose primary use is in our everyday dealings with physical objects. Concepts such as "equal to". On the received view, this employment is thought to rest, says Rhees, securely upon analogies between the primary use and the use in mathematics. But the analogies, observes Rhees, are never worked out, they are always "vague". This is not incidental; it is inevitable because there are no such analogies, and belief to the contrary represents a deep-seated conceptual confusion.

Rhees supports his argument with an elucidatory example concerning Euclid's treatment of equilateral triangles. According to Rhees, "unless

67. Of particular relevance to the issues under discussion here is the brilliant and, in some respects, controversial paper by M. F. Burnyeat (2000).
68. Rhees (1996: 104–157).
69. Rhees (1996).
70. Rhees (1996: 105).

we know what is to be understood by finding out that one thing is equal to another, just to say that they are equal tells us nothing about them."[71] Absent a method of measurement, therefore, talk of "being equal to" in geometry is idle, whether of angles, the radii of circles, or of any other supposed property of ideal geometrical objects. Furthermore, maintains Rhees, what holds for geometry holds for mathematics more generally. In short, mathematics possesses no methods of specification – measurement, for example – which would allow the defining properties of any of its supposed ideal objects to be given a clear meaning.

From this critique, Rhees does not conclude that ideal geometrical objects do not exist. He concludes, rather, that even if they do exist, mathematics can tell us nothing whatever about them.[72] This is so for a very good reason; because mathematics, properly understood, is not talking about or discussing anything at all. Mathematics is neither representational nor descriptive.[73]

Here we have, I suggest, the elements of a somewhat fuller account of Rhees' failure to make sense of Weil's mystical view of mathematics. For if mathematics cannot coherently be said to refer to that which transcends the realm of physical objects, then, *a fortiori*, it is a confusion to say that mathematics refers to the divine. Indeed, if mathematics is neither representational nor descriptive, then it is hard to see how it could even be taken as a metaphor for the divine. In order to make sense of Weil's view, therefore, Rhees has not only to enter imaginatively into a thought world in which his own sharp distinctions between mathematics/science, philosophy and religion are transgressed, he has also to apprehend a view which embodies what he takes to be deep-seated confusions about the true meaning of mathematics.[74] Considered in these terms, Rhees' bafflement is perhaps rather less surprising.

71. Rhees (1996: 106).
72. Rhees (1996: 105).
73. Thus, Rhees maintains that while we may imagine a use for sentences in geometry which involves describing the properties of and relations between ideal geometrical objects, this use plays no part when we are doing geometry. For then, "what we attend to is the connexions between the sentences themselves; we don't employ any method for studying the properties of the supposed figures." Rhees (1996: 106). Similarly, "[w]hen we are doing geometry we are not *using* geometrical propositions for the study of or to convey information about circles and triangles; neither about real circles nor about 'geometrical' ones." Rhees (1996: 107).
74. I am assuming here that Weil holds at least an implicitly Platonist view of mathematics. Although this seems to me to be, on balance, the best way of reading Weil, this is perhaps open to question given that, in addition to Plato, Weil is also influenced by Kant and Descartes. Considerations of space, however, prevent a fuller discussion of the significance of these influences. What seems undeniable, however, is that Weil's view of mathematics is representational, and this will suffice to bear the burden of my account of Rhees' bafflement.

There remains, however, one important question yet to be addressed. For although Rhees misunderstands Weil's mystical view of mathematics, is it nevertheless the case that Rhees' critique of the "received view" threatens to undermine the coherence of Weil's position?

VI. Rhees' Critique of the "Received View"

Rhees' key argument is that geometry – as understood in accordance with the "received view" – lacks any system of measurement in terms of which its central concepts may be given determinate meaning. Let us examine, therefore, the example which Rhees offers in support of this argument, that of one thing "being equal to" another in geometry.

Consider the following dictionary definition of the transitive verb "measure": "ascertain the extent or quantity of (a thing) by comparison with a fixed unit or with an object of known size."[75] From this (surely uncontroversial) definition, it is clear that understanding the concept of "measurement" involves understanding what is meant by "comparison with" a standard unit of some sort. But such an understanding presupposes a grasp of what is meant by saying of one object that it is "smaller than" or "larger than" another object with which comparison is being made. Moreover, such an understanding is logically prior to the concept of a "standard unit of measure" because comparison at this more primitive level could make sense even where systems of measurement are quite unknown. Similarly, it follows that a sense may be given at this more primitive level to saying of one object that it is "neither smaller nor larger than" the object of comparison. In other words, an understanding of the meaning of the concept of "comparison" necessary to give sense to the concept of "measurement" requires a prior grasp of what is meant by saying of an object that it is "equal to" another in extent or quantity. For if that much were not already understood, then the very purpose of a standard unit would be rendered meaningless. In short, therefore, it is the logic of a system of measurement which presupposes the logic of equality and not, as Rhees maintains, vice versa.

It is, of course, when a standard unit of extent or quantity is specified as such that a context is created in terms of which the concept of equality is given a specific application as part of a system of measurement. That much is true enough. But this does not entail that, for example, the idea of one angle being "equal to" another is meaningless in the absence of such a context. Rather, it has a meaning which is

75. Allen (ed.) (1990: 736).

presupposed in the specification of any such context or any specific system of measurement.

For a Platonist, therefore, the fact that Euclid makes no reference to any system of measurement in his initial definitions and hypotheses is not, as Rhees implies, a fatal omission. Indeed, to the contrary. For, as M. F. Burnyeat observes, "it is the hypotheses that make it possible to use 'visible forms' (diagrams) to think about abstract non-sensible objects."[76] It is because Euclid's definitions and hypotheses have the form in which they are presented that they allow what is present to sense experience to be employed to refer to that which transcends it.

The property of the incommensurability of the side of a square with its diagonal is a case in point. For it is a property which can neither be detected by the senses, nor demonstrated by any system of measurement. Indeed, if a square is drawn, no matter how precisely, using any medium we choose, then provided we have available a sufficiently sensitive measuring instrument it will be possible to 'prove' that the side and diagonal are not at all incommensurable.[77] But the 'proof' holds only for objects present to sense experience, whereas the property of incommensurability applies to abstract objects which transcend sense experience. Moreover, the relation between the side and diagonal of a square as parts of a whole is one which cannot be elucidated in terms of a common measure. Rhees' insistence, therefore, on the logical primacy of "systems of measurement" effectively rules out *a priori* the possibility of using what is given in sense experience to think about that which transcends it. Rhees, in effect, begs the question against the Platonist. Furthermore, in contrast to Rhees, the Platonist is able to make sense of how and why the discovery of the property of incommensurability led to Eudoxus' broadening of the concept of number to accommodate what, in modern terms, we call rational and irrational numbers.

VII. Conclusion

It is an unfortunate irony that Rhees plays such an important role as a highly intelligent and sympathetic interpreter of Weil's religious and (with some qualification) ethical thought, yet fails so comprehensively to grasp the meaning of Weil's attempt to draw out the ethical and religious significance of mathematics. For, as has already been noted, Weil's Pythagorean view of mathematics is no mere *addendum* to her later

76. Burnyeat (2000: 27).
77. The incommensurability is thus "always disconfirmed by careful measurement". Mueller (1980: 115), quoted by Burnyeat (2000: 28).

thought. Indeed, Rhees himself acknowledges that Weil regards the Pythagorean view as being of signal importance.

That said, it is important also to recognise that while addressing Rhees' critique of Weil is necessary, in itself it is insufficient as a basis for showing that Weil's Pythagorean view deserves to be taken more seriously. For scepticism concerning Platonism in the philosophy of mathematics is by no means confined to Wittgensteinians. Those inclined to scepticism may acknowledge the failings of Rhees' anti-Platonist arguments and yet applaud the soundness of Rhees' sceptical instinct. While a detailed response to such scepticism lies beyond the scope of this paper, it is important, nevertheless, to indicate briefly two grounds for suggesting that Platonism is not the museum piece which its critics may be tempted to suppose.

First, it is worth noting that although very much a minority view, Platonism in the philosophy of mathematics continues to attract able and well-informed defenders. A distinguished contemporary example is James Robert Brown.[78] Second, it is necessary to acknowledge Platonism's lack of any convincing account of how human beings are able to obtain *a priori* knowledge of abstract mathematical objects which transcend sense experience.[79] What *is* the nature of the interaction between such objects and the human mind which supposedly issues in mathematical intuitions or perceptions? To this, the Platonist has no convincing answer. But then, as Brown, for example, points out, there are no compelling answers to analogous questions concerning our knowledge and conscious awareness of physical objects, either.[80] Faced with a challenge on this front, the Platonist is perfectly entitled to call his opponent's bluff.

I suggest, therefore, that enough has now been said to justify the claim that Weil's Pythagorean view is coherent and that, as a consequence, it deserves to be taken rather more seriously than has hitherto been the case.[81] Coherence, of course, is no guarantee of truth. But it does suggest that the prima facie strangeness of Weil's view is, in itself, no good reason for it to be written off as an eccentric oddity having little to contribute to contemporary discussion in the philosophy of religion and ethics. Indeed, to the contrary. Because this strangeness is due

78. See, for example, Brown (1991) and Brown (1999) in the reference section below.
79. Rhees' critique of the "received view" in regard to geometry is an analogue in the philosophy of language to this epistemological scepticism.
80. Brown (1991: 64–65). Science may provide a causal account of our interaction with physical objects, but such an account is manifestly insufficient to explain either the intentional character of our sense experience or our knowledge of the external world.
81. This is not to deny or ignore the valuable work of Weil scholars such as Vance Morgan and Eric Springsted. On the contrary, I am suggesting that their work and, of course, Weil's own writing in this area, deserve to be much better known.

in large part to the radical nature of Weil's critique of widely held and deep-lying assumptions in modern thought, which arguably distort our experience of the world and weaken our capacity to respond to that which transcends it.

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References

Allen, R. E. (ed.) (1990). *Concise Oxford Dictionary of Current English*, 8th edn. Oxford: Clarendon Press.

Brown, J. R. (1991). *The Laboratory of the Mind*. London; New York: Routledge.

——— (1999). *Philosophy of Mathematics: An Introduction to the World of Proofs and Pictures*. London & New York: Routledge.

Burnyeat, M. F. (2000). "Plato on Why Mathematics is Good for the Soul." *Proceedings of the British Academy* 103: 1–81.

McCullough, L. (2014). *The Religious Philosophy of Simone Weil*. London & New York: I. B. Tauris.

Morgan, V. G. (2005). *Weaving the World: Simone Weil on Science, Mathematics and Love*. Notre Dame, Indiana: University of Notre Dame Press.

Mueller, I. (1980). "Ascending to Problems: Astronomy and Harmonics in *Republic* VII." In John P. Anton (ed.), *Science and the Sciences in Plato*. Delmar, NY: Caravan Books, pp. 103–21.

Rhees, R. (1996). *Discussions of Wittgenstein*. Bristol: Thoemmes Press. (Reprint of original which was first published in 1970.)

——— (2000). *Discussions of Simone Weil*. D. Z. Phillips (ed.) Mario von der Ruhr (ed. asst.). New York, NY: State University of New York Press.

von der Ruhr, M. (2006). *Simone Weil*. London and New York: Continuum.

Weil, S. (1951). *Intuitions pré-chrétiennes*. Paris: La Colombe.

——— (1952). *The Need for Roots*. Arthur Wills (trans.), London: Routledge and Kegan Paul.

——— (1955). *La Source Grecque*. Paris: Gallimard.

——— (1956). *The Notebooks of Simone Weil*, Vol. 2. Arthur Wills (trans.), London: Routledge and Kegan Paul.

——— (1965). *Seventy Letters.* Richard Rees (ed. & trans.), London: Oxford University Press.

——— (1968). *On Science Necessity and the Love of God*. Richard Rees (ed. & trans.), London: Oxford University Press.

——— (1976). *Intimations of Christianity among the Ancient Greeks*. Elisabeth Chase Geissbuhler (ed. & trans.), London and Henley: Routledge and Kegan Paul. (Reprint of original which was first published in 1957.)

——— (1987). *Gravity and Grace*. Emma Craufurd (trans.), London: Routledge and Kegan Paul.