

Metaphysical Optimism

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Abstract

This paper seeks to identify and defend an approach to inquiry dubbed ‘metaphysical optimism’, particularly as it is evidenced at crisis points in the fields of physics, mathematics and logic. That the practice of metaphysical optimism at such moments, wherein it has appeared that there is no clear way to proceed or understand where we have arrived, is both reasonable and useful suggests it is to be taken seriously as capable of progressing fields and increasing knowledge. Given this, the paper then looks in more depth at what such an approach involves and why it might be useful both as a methodological approach in general and to help clarify positions along the realism/anti-realism spectrum in philosophy. From here, the paper arrives at a possible argument in defence of the realist attitude to transcendence.

1. Introduction

I have been studying metaphysics since I began to study philosophy – and even well before that, though without perhaps naming it. And I began thinking about optimism in a philosophical sense when I first came across Gödel’s particular realist version (more on this shortly). The idea that planted itself in my mind then was simply that optimism, when paired with metaphysics, might present a concept which could be useful in philosophy. That is the main idea I want to explore here.

I will in particular consider how the concept of ‘metaphysical optimism’ may cast light on the realism/anti-realism divide. I do not agree with the apparently increasing number of philosophers who feel that these terms have been rendered practically useless through over-use or that they should be cast out as old fashioned. But I do think that any new lens through which we might better appreciate what the divide itself means and better understand elements within the various positions on each side, is to be welcomed, and that ‘metaphysical optimism’ offers just such a lens.

First some quick definitions. To come up with a definition of metaphysics is a paper in itself, so the following is just a very brief overview of what I personally take metaphysics to be.

We talk about and think about a lot of things. Some things appear to have reasonably clear descriptions and known properties. We can say, with varying degrees of certainty, that material stuff is made

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up of smaller bits; that its form changes, and so on. We tend to think we know (and can know) quite a lot about these sorts of things. But then there are other things that we talk and think about whose nature is far less clear – often these are ‘abstract’, or things we cannot (apparently) access via our senses. Abstract things can be particularly interesting – but this is not to say they are fundamentally less knowable or the sole domain of metaphysics. To presume so at the outset would be to beg the question.

So, rather than being about a set of specific (or type of) things themselves, metaphysics is better considered as the *focus* on (any)-things themselves – i.e. the focus on what our talk or thoughts or theories might be about, rather than, say, the talk or thought itself. Metaphysics then, is simply taking *things* seriously. So the practice of metaphysics is the investigation of anything, whether physical, abstract, imaginary, or human, for its own sake. As such, it might be asking whether things exist, and it might also be asking after other properties of things, including their potential relationships to other things, whether they change, where they come from, what comes from them, even whether we can eat them. Metaphysics can encompass all sorts of questions about all sorts of things.

So, an initial, sketchy definition for ‘metaphysics’ might be: the taking of the investigation of the subject/s of our thoughts, theories or talk as important and relevant for its own sake; asking what it is all *about*.

How then might we define optimism? Given the definition above, metaphysics itself might be called ‘optimistic’, especially insofar as it allows the continued investigation of what may turn out to be unanswerable questions, seeing the point in the wondering itself. That’s surely optimistic. But trying to define optimism as a philosophical activity, attitude or concept before we look at how it may be in play in various examples, is difficult. So instead, I’m going to begin with a mental image. There are many examples of cartoon characters who find themselves having run off a cliff or otherwise have had the ground disappear from under them – such as Wile E Coyote. The image I want to use, then, is simply this: in particular, those occasions, where, on having found themselves in such a predicament, the characters’ feet keep peddling!

An internet search reveals one philosophical conception of optimism as ‘the doctrine, especially as set forth by Leibniz, that this world is the best of all possible worlds’.¹ This is how we might

¹ <https://www.google.com.au/search?q=optimism+definition&oq=optimism+definition&aqs=chrome..69i57j69i61.9665j0j7&sourceid=chrome&ie=UTF-8>

conceive of Coyote in his foot-peddling moments – that, even in the face of overwhelming evidence to the contrary, he (or his feet at least) continues to have faith that this might be the best possible of all worlds (namely, one in which those feet eventually gain purchase). An initial philosophical definition of optimism then might be the affirmation of something like Mark Steiner's position: that the world, in some fundamental way, is 'user-friendly'² when it comes to human inquiry, and the consequent (though often apparently unreasonable) faith in the applicability to the real world of our own human methods of discovery.

Given this, an initial definition of metaphysical optimism might simply be 'optimism about *aboutness*' – i.e. optimism that we can know, or that it is at least worth wondering about, what our investigations and enquiries are *about*. In Steiner's words, it is to believe that our own human (often formalist and 'Pythagorean') methods of inquiry can (and likely will) turn out to be 'empirically adequate'.³

The rest of this paper falls roughly into two parts. The first revisits some well-known tales from physics, mathematics and logic. The second further examines the approach or attitude of 'metaphysical optimism' apparent in each tale, and explores why and how such an approach might be useful and so deserves to be taken seriously.

2. Tales from Physics, Mathematics and Logic

2.1. *Physics*

There is a certain mundane and for our purposes, relatively useless, sense of optimism, just as there is of realism. This is the everyday sense: the sense in which it is optimistic (and for that matter realistic) to continue walking in the expectation that there will be solid ground under your foot the next time you step. This 'default' optimistic attitude by itself does not tell us particularly much about how we do or might proceed in developing our understanding of the world, or what actually is going on when we theorise and experiment.

We can see a more interesting and potentially fruitful role for optimism by looking at how it comes into play in more extreme 'Coyote' cases – by looking at the role it can play when the ground disappears

² Mark Steiner, '*The Applicability of Mathematics as a Philosophical Problem*', (Harvard University Press, Massachusetts), 8.

³ Steiner, '*The Applicability of Mathematics as a Philosophical Problem*', 58.

from under us, or when we simply do not know what's going on. As Mark Wilson points out: 'many of the most interesting questions in philosophy of language and the methodology of science concern the issues of how we should proceed in the periods while we patiently await fuller enlightenment'.⁴

I will look at a few such 'hanging in mid-air' situations, and hope that by examining them, we can find common attitudes and actions that may be described, not just as 'optimism', but as optimism about 'aboutness' and so too as 'metaphysical', and see from there how those findings might prove interesting and useful.⁵

2.1.1. *Quantum Mechanics*

If we are looking for situations in which we find ourselves with nothing whatsoever to hang on to, quantum mechanics is an obvious place to start. There is a veritable smorgasbord in recent theoretical physics that would fit our 'Coyote' requirements. We need only ponder the idea of superposition to find ourselves hanging in thin air. Superposition is what happens to atoms (and other stuff) passing through various apparatus designed to measure some of their properties. It turns out that none of our notions regarding the possibilities for what might be going on apply here. One of the simplest examples of this sort of behaviour is the 2-slit experiment:⁶ shooting electrons through one hole, then another, then both. When only one hole is open, electrons land in the sort of pattern any particles would – a heap begins to form. When both holes are open, the landing pattern should be two heaps, but is instead, a series of smaller heaps, consistent with a wave passing through the holes, rather than particles.

As David Albert states, 'It's inconsistent with these experimental results to suppose that an electron passing through this apparatus passes through the upper hole when both holes are open; and it is inconsistent with these experimental results to suppose that an electron

⁴ Mark Wilson, *Wandering Significance: An Essay on Conceptual Behaviour* (Oxford University Press, USA, 2006), 32.

⁵ Just a note: in order to get at the attitude or strategy of metaphysical optimism, I do gloss over almost *all* of the technical details in each of the examples. The references give some places you might like to look for the technical details, and more discussion on each, for those interested in delving further.

⁶ For a quick and comprehensible run-down of the experiment itself, see David Z. Albert, *Quantum Mechanics and Experience* (Harvard University Press, USA, 2011), 11–14.

passes through the lower hole when both holes are open ... [and] it also can't be maintained that such electrons pass through both holes, and ... it also can't be maintained that they pass through neither'.

Albert continues: 'these electrons are (then) in superpositions of passing through the upper hole and passing through the lower one; but ... we have no idea, or only a negative idea, of what that means'.⁷ So 'electrons seem to have modes of being, or modes of moving, available to them which are quite unlike what we know how to think about. ... The name of that new mode (which is just a name for something we don't understand) is superposition'.⁸

There are many different attitudes we could take towards these sorts of results. As is quite well known, two radically contrasting such attitudes were those of Einstein and Bohr. Einstein was convinced there was something wrong with, or 'incomplete' about quantum mechanical theory, whereas Bohr took a somewhat more fatalist approach. Put very simply, Bohr's interpretation (also known as 'the Copenhagen' interpretation) says we do not and therefore should not know what quantum mechanics is *about*, i.e. we just have to learn to live with the predicament it presents to our conceptual apparatus. For Bohr, it was a mistake to ask after any realisation (in nature or reality) of the formalism. For example, it would be a mistake to wonder whether a particle 'really' is a wave. Thus, Bohr's idea that waves and particles are 'complementary' properties (there are others – most famously, position and momentum) was grounded in a fundamentally negative notion: that such properties are not simultaneously knowable.

Bohr himself entertained a number of sophisticated and complicated ideas about what complementarity meant for the fundamental nature of reality, and so was likely more of a metaphysician than the quick run-down I have afforded him suggests. Unfortunately, to give Bohr his due, we would have to digress quite significantly. Instead, I am deliberately honing in on the negative bit of his view, because it promises to help pinpoint what metaphysical optimism might look like, insofar as it offers a sharp contrast to the general attitude discussed above. What is interesting here is Bohr's insistence that we must not go *beyond* the formalisms or paradoxes. In fact, supporters of the Copenhagen interpretation often wind up sounding quite like Bishop Berkeley, e.g. 'There is no quantum world. There is only an abstract quantum description'⁹ and indeed, according to

⁷ Albert, *Quantum Mechanics and Experience*, 14.

⁸ *Ibid.*, 11.

⁹ Nick Herbert, *Quantum Reality*, (Anchor Books, USA, 1985), 17.

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Louisa Gilder, Bohr's books and papers were 'full of careful prohibitions about what cannot be contemplated'.¹⁰

Gilder gets to the heart of (the negative aspect of) Bohr's view when she notes that 'for Bohr, complementarity was almost a religious belief that the paradoxes of the quantum world must be accepted as fundamental, not to be "solved" or *trivialised by attempts* to find out "what's really going on down there" ... he emphasised that waves and particles are abstractions, their properties being definable and observable only through their interaction with other [classical] systems ... he did not envisage ways of moving beyond these "abstractions" to more accurate descriptions.'¹¹

Steiner sharpens the point: 'according to the orthodox [Copenhagen] interpretation, we dispense of pictures and models. ... All there is to quantum mechanics, then, is the formalism itself. And the formalism has no descriptive role: it keeps track of the probabilities that various "observables" will be measured (classically) to have different possible "values" ...'¹²

So, insofar as Bohr's view involves this sort of embargo on 'aboutness', we can characterise it as an example of the *absence* of metaphysical optimism (rather than the direct opposite – invoking 'pessimism' will only muddy the waters).

Einstein's position (which, recall, was essentially that something was wrong with quantum mechanics) came from quite a different impulse to that of Bohr. Einstein's position was born of a conviction that, no matter how apparently hopeless such questions seemed to be in the face of the formalisms, we *should* ask what they are actually about. For Einstein, what was wrong with quantum mechanics was that the formalisms are not telling us *enough* about what they are about. He remained convinced that we could and should find out more, saying: 'I still believe in the possibility of a model of reality – that is, of a theory which represents things themselves and not merely the probability of their occurrence'.¹³

And this is an attitude we can characterise as an example of metaphysical optimism. It was this approach that underpinned the discovery of entanglement (albeit rather unintentionally) – itself coming from the idea of missing or hidden variables explaining the weird

¹⁰ Louise Gilder, *The Age of Entanglement: When Quantum Physics was Reborn*, (Vintage Books, USA, 2009), 7.

¹¹ *Ibid.*, 5.

¹² Steiner, 'The Applicability of Mathematics as a Philosophical Problem', 145.

¹³ Herbert, *Quantum Reality*, 24.

actions of electrons. The rhetorical title of the famous ‘EPR paper’ in which the notion made one of its earliest appearances, underscores the point: ‘Can a quantum mechanical description of physical reality be considered complete?’¹⁴

The above discussion glosses over a great deal, but the interesting point for our subject is this: When we go where the formalisms or our theories lead us, and find they have led us into what seems alarmingly like thin air (in this case, that they apparently have no meaning in the real, physical world), then it seems we have at least two options¹⁵ as to what to do next. There is Bohr’s way (shared by others, such as Heisenberg and Pauli) – explaining things as best we can, but essentially just learning to live with nothing beneath our feet. Alternatively, there is Einstein’s way (also shared by others, e.g. Bohm, Bell, de Broglie, and Schrödinger) – to look around for something more comprehensible than thin air (or, in this case, than the formalisms themselves), some way of seeing what is really going on; to note that if we’re apparently hanging in thin air, something very strange must be happening, and we need to persist in trying to find a place to rest our feet. Indeed, as Steiner notes, Bell and Bohm objected that, insofar as it sees nothing beyond the formalism itself, the Copenhagen interpretation ‘robs [quantum mechanics] of its very right to be called a physical theory’.¹⁶

So, perhaps for quantum mechanics (or at least for this aspect of quantum mechanics), metaphysical optimism is the idea that we *can* still know, or that we can know *more* of what it is about, or that it is at least worth asking the question. On this view, what the formalisms themselves say is not all we have to wonder about or work with, there is *also* the question of what they are about.

2.2. Mathematics

Kurt Gödel took this idea a step or two further. For Gödel, mathematical optimism was more than a way of thinking, it was a methodology, one he held as best practice for both mathematics and

¹⁴ Albert Einstein, B. Podolsky, N. Rosen, ‘Can Quantum Mechanical Description of Physical Reality be Considered Complete?’, *Physical Review* 47 (1935).

¹⁵ There’s also a third way (which I’ll not dwell on here), and that’s to insist on simply waiting to see what happens next, and on not looking around or down until then (Dirac and Born could be argued to have taken this way, although from quite different perspectives).

¹⁶ Steiner, ‘The Applicability of Mathematics as a Philosophical Problem’, 145.

philosophy. According to Hao Wang, Gödel believed that ‘the meaning of the world is the separation (and its overcoming) of fact and wish’.¹⁷

It is interesting to compare this with Wilson’s comments on the adventures of applied mathematics, in which, he says, we see ‘an appreciation of the unavoidable divergences between fond hope and supportive reality’.¹⁸

2.2.1. *The Incompleteness Theorems*

Given that the story I will touch on below – i.e. the story of the incompleteness theorems and Hilbert’s programme – is one of the most told tales in mathematics, I will only briefly recap the elements needed to touch on the aspects of Hilbert’s and Gödel’s views most relevant to the pinning down of metaphysical optimism.

In brief, Hilbert’s particular brand of optimism was that for any mathematical question we ask (in a consistent system), there will be a ‘yes or no’ answer we can find. Hilbert’s programme aimed to formalise all of mathematics via finitary methods and demonstrate that the system itself is consistent. But then Gödel’s incompleteness theorems came along.

In short, ‘The first incompleteness theorem states that in any consistent formal system F within which a certain amount of arithmetic can be carried out, there are statements of the language of F which can neither be proved nor disproved in F . According to the second incompleteness theorem, such a formal system cannot prove that the system itself is consistent (assuming it is indeed consistent)’.¹⁹ So, as Richard Zach says (in something of an understatement), ‘Gödel’s incompleteness theorems showed that Hilbert’s optimism was undue’.²⁰

Gaifman gives a nice summary of one version of the proof of the first theorem thus: ‘the very notion of *formal proof* implies that we

¹⁷ Hao Wang, *Beyond Analytic Philosophy*, (MIT Press, USA, 1986), 193.

¹⁸ M. Wilson, *Wandering Significance: An Essay on Conceptual Behaviour*, 29.

¹⁹ Panu Raatikainen, ‘Gödel’s Incompleteness Theorems’, *The Stanford Encyclopedia of Philosophy* (Spring 2015 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/spr2015/entries/goedel-incompleteness/>>.

²⁰ Richard Zach, ‘Hilbert’s Program’, *The Stanford Encyclopedia of Philosophy* (Spring 2016 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/spr2016/entries/hilbert-program/>>.

have an effective way to verify that an alleged proof is indeed a proof – a way of checking each step. This means that the set of theorems of a given theory is *countably enumerable* (c.e.) – also known as *recursively enumerable* (r.e.). Let T be any theory, such that a sufficient fragment of PA (Peano Arithmetic) is derivable in it. Then, using the fixed point technique, we can construct a sentence, such that, if T is consistent, then neither the sentence nor its negation are provable in it. In accordance with Gödel's terminology, call such sentences *undecidable* in T . These sentences are also known as “*independent of T* ”.²¹

Despite his own theorems, Gödel did not rule out the discovery of answers to all our mathematical questions, but his *attitude* was quite different to Hilbert's. Gödel believed in mathematical intuition, about which he said and wrote a great deal. In one pertinent example, he noted that, for him ‘intuition is not proof; it is the opposite of proof’, observing that ‘we do not analyse intuition to see a proof but by intuition we see something without a proof’.²² To be more Scottish, and, in this case, perhaps more clear than Gödel here, I think we could fruitfully replace ‘without’ with ‘outwith’ to capture the sense in which Gödel meant the word to indicate ‘beyond’ or ‘outside’. That is, for Gödel, a proof is one thing, and what that proof is *about* is another.

So Gödel was an optimist – but a quite specific one – his faith was in our ability to access a mathematical reality independent of mathematical formalisms and proofs. Hilbert, also, could be considered a mathematical optimist of sorts, but his faith was in the formalism itself (in much the same way, Bohr could also be called an optimist, but, for reasons explored later in the paper, I believe both Hilbert's and Bohr's attitudes are better characterised as ‘humility’).

The point is that, in a number of ways, and not just for Hilbert, Gödel's incompleteness theorems precipitated a Coyote moment in maths. Of primary interest here is the effect the theorems had on mathematicians' understanding of mathematical formalisms and proofs themselves. With the undermining of Hilbert's faith in its ability to provide answers to any mathematical question, the whole system of mathematics appeared to some to be in trouble, while to others the results simply indicated a need to look further or deeper ‘outwith’ that formal system, to discover more about the nature of mathematical reality itself.

²¹ Haim Gaifman, ‘On Ontology and Realism in Mathematics’, *The Review of Symbolic Logic* 5(3), (2012), 480–512, 21–2

²² Hao Wang, *Gödel, A Logical Journey* (MIT Press, 1996), 46

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So, in at least this sense, the primary difference between Gödel's and Hilbert's optimism was that Gödel's was 'bigger' – i.e. despite his incompleteness results, he still thought answers could be had, and he was happy to look for them *outside of the formal systems* already in place. Like Einstein, he felt there was something missing (which we could and should seek to find) from the system itself, and its shortcomings suggested that we needed to find out more of what it was about (a sentiment expressed throughout Gödel's work in various ways, e.g. 'many symptoms show only too clearly, however, that the primitive concepts [in this case, of mathematical logic] need further elucidation'²³).

Thus both Einstein's and Gödel's positions encompass the idea that there is more 'outside' the system, or of our current best practice, or of the best understanding we have or can conceptualise being able to have. Both begin from the notion that all of what it appears we can know – in this case, the formal systems – do not itself exhaust what there *is* to know: that beyond the symbols there is also what those symbols are *about*.

2.2.2. Independence Results

Another Coyote moment in mathematics was the discovery of forcing and the subsequent proliferation of independence results. Using forcing, a theorem or hypothesis can be shown to be independent (of set theory) when there is a model in which it is true and a model in which it is false – which means that statement cannot be proved from the fundamental axioms of the most fundamental theory of mathematics (ZF and/or ZFC).²⁴

As Gödel's theorems state, so long as our set of theorems in a theory form a c.e. set, there will be undecidable statements in that theory. But when the theory in question is one in which all of mathematics can be modelled and those statements are interesting and important, then the general predicament of undecidable statements is amplified. Again, Gaifman puts it nicely: 'the stronger the theory T is, the more significant is the fact that a statement is undecidable in it ... ZFC is more than sufficient for the purpose of formalising proofs in the

²³ Ibid., 55

²⁴ ZF is the axioms without the Axiom of Choice – ZFC includes it. The Axiom of Choice itself was shown to be independent of ZF, and other results, most notably the Continuum Hypothesis, can be proved independent of both ZF and ZFC (unless ZF is inconsistent – see John Stillwell, *Roads to Infinity: The Mathematics of Truth and Proof* (CRC Press USA, 2010), 64)

non-logic areas of mathematics, as well as many parts of mathematical logic; using a rough safe guess, this should cover 99% of mathematical activity. ... [so] undecidability in ZFC is taken to mark the unsolvability of the problem in common mathematical practice.²⁵

The most famous independence result is that of the Continuum Hypothesis (CH). CH, as it was originally stated is the hypothesis that there is no infinite set with a cardinal number between that of the 'small' infinite set of integers, \aleph_0 , and the 'large' infinite set of real numbers c (the 'continuum'). Symbolically, $\aleph_1 = c$.

That this undeniably interesting hypothesis could be demonstrably unable to be either proved or disproved within the entire system of mathematics as it stands, is (and was) certainly a shocking result. But, it gets worse. As Stillwell points out:

'forcing completely changed the face of set theory by showing that *most of the interesting unproved sentences of ZF can be neither proved nor disproved without new axioms*. In particular, forcing can be used to obtain models of ZF with the following properties, which are therefore not disprovable in ZF:

- *There is an infinite set with no countable subset
- *There is a sequentially continuous function that is not continuous
- * \mathbf{R} is a countable union of countable sets

These properties all contradict AC, so they are not provable in ZF either.²⁶

Nowadays, (as Wainer points out) producing independence results for a whole range of foundational theories beyond Peano (or basic) Arithmetic is practically an industry of its own.²⁷ So, there is, in mathematics, a number of places in which it seems the formalisms don't seem to be telling us anything – or they seem to be telling us something very strange that we don't fully understand (just as in quantum physics).

As Gaifman says: 'the vast majority of mathematicians hate to entertain the possibility that the problem they work on has no solution because it is independent of the main axioms of set theory', since 'no one likes to be in a position of trying to do the impossible'. To drive

²⁵ Haim Gaifman, 'On Ontology and Realism in Mathematics', *The Review of Symbolic Logic* 5(3), (2012), 480–512, 25

²⁶ Stillwell, *Roads to Infinity: The Mathematics of Truth and Proof*, 64.

²⁷ Stanley S. Wainer, *Goodstein Sequences and Arithmetical Independence Results* (Slides from presentation, Goodstein Centenary Meeting, Leicester, 2012), https://mathsites.unibe.ch/proofcomp/downloads/Slides_Wainer_1.pdf

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the point home, he tells that he once heard Paul Erdős say in a lecture on number theory, ‘hopefully this kind of problem does not fall prey to the monster of independence’.²⁸

But this is not the only attitude one can take to the independence results. There are options here comparable to those we saw for quantum mechanics.

One is to take on a policy of avoidance – the basic idea being that we should try *not* to step over the edge in the first place. This has similarities to Bohr’s approach – insofar as it involves a ‘pulling back’ to what we *do* know, or to what we suspect it is reasonable to suppose we *could* know, and not going beyond that. This idea manifests in a number of programs and positions across mathematics and its philosophy, notably including finitism (the methodology behind Hilbert’s program); also including exhortations to work only in certain restricted, constructible set theoretic ‘universes’, and the related notion that (at least in certain areas not directly related to set theory) we need to be careful to ask only ‘natural questions’, or to ‘choose the right problems’²⁹ – e.g. questions ‘naturally generated’ within a particular mathematical research area – to avoid an independence result for an answer.

Such positions (in one sense or another) *rule out* undecidable statements, in the sense they are deemed unsolvable (in one sense or another) and so no longer to be worked on or wondered about. In some cases, even the idea that they have meaning *per se* is denied.³⁰ Generally, these sorts of positions and this type of attitude take the independence results as a dead end, beyond which we cannot and should not try to go. These positions, like Bohr’s, also involve an embargo on further wonderings about ‘aboutness’: they ‘pull back’ to our conceptual apparatus, flawed as it may be, rather than asking more of it. So this sort of option is another example of the absence of metaphysical optimism.

The other option, taken by Gödel and others (for example Woodin, and a group known as ‘the California School’) is to adopt an attitude of persistent interest even in demonstrably ‘unsolvable’ questions. Those taking this position might look for *new* axioms,³¹ or look for other ways to understand ‘undecidability’ itself. This attitude can be characterised as metaphysical optimism. In general, positions

²⁸ Gaifman, ‘On Ontology and Realism in Mathematics’, 24–5.

²⁹ *Ibid.*, 26.

³⁰ E.g. this was Brouwer’s position regarding statements such as CH.

³¹ The California school is looking quite specifically for new axioms to decide CH one way or the other.

adopting such an attitude remain open to some unforeseen, even unforeseeable, developments in mathematics which might help settle undecidable questions, or they at least allow that such questions remain interesting. In short, this attitude sees value in continuing to wonder what they might be *about*.

As Woodin describes it: '[forcing] is really the end of set theory, or else really the beginning – and we do not know which', and as Stillwell adds: 'it may be that we can never understand the continuum; [but] it may also be that we *can* understand the continuum, but only by new axioms'.³² The former view entails the notion that we have reached the limits of where our conceptual apparatus can take us – and it often incorporates the notion that that apparatus itself is all we have, or all that we can imagine is 'there' in any relevant way (alternatively, it might incorporate the idea that even if there *is* something beyond, we know no way of reaching it, so it is not worth worrying or wondering about). Stillwell calls the latter the 'optimistic view'. I agree. This was the crux of Gödel's attitude and incorporates the notion that, regardless of the (current) status of our knowledge, and of our formal systems, there is still *hope* – for improvement and further elucidation; that it is worth continuing to wonder what it's all about.

2.3. Logic(s)

2.3.1. Classical Implication

There have been quite a few Coyote moments in logic. I would argue that one of these begins with the relatively recent focus on paradoxes of material implication, an example of which is the following argument:

'The moon is made of green cheese. Therefore, either it is raining in Ecuador now or it is not.'³³

This is valid in classical logic, yet clearly it is not a valid argument.

What to do? There are, again, at least two options here: one is to try to 'explain away' the paradoxes and to 'pull back' to classical logic. The other, which gave birth to a whole host of new or 'alternative' logics, is to continue to look and wonder at what is going on.

³² Stillwell, *Roads to Infinity: The Mathematics of Truth and Proof*, 65.

³³ Edwin Mares, 'Relevance Logic', *The Stanford Encyclopedia of Philosophy* (Spring 2014 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/spr2014/entries/logic-relevance/>>.

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Stephen Read captures the latter option thus: ‘The puzzles and paradoxes of the classical view are removed not by barring exceptions, or by restricting its application, but by a proof-analysis which discerns the *true nature of consequence* – of the notion of validity.’³⁴

2.3.2. Paraconsistent Logic

The advent of one class of the above mentioned alternative logics, namely paraconsistent logic, also produced a Coyote moment in this field.

That is, the formal systems embracing paraconsistent axioms have seemed (at least to some) to be another place where the formalisms or our theories seem to lead to thin air, where they do not seem to make any sense, or where they seem to be telling us something very strange that we just can’t understand (again, just as in quantum mechanics).

The motivating idea of paraconsistent logics is that contradictory premises can be meaningful, in the sense that some things follow from them, and some do not. This is as opposed to the classical idea that contradictions are essentially meaningless, i.e. that if you allow them, you allow anything (put more formally, that from a contradiction, anything whatsoever follows).

When paraconsistent logic first started to gain traction, there were plenty who could not accept it (there still are, but perhaps less so). A prime example was David Lewis, who in his pointedly named ‘Logic for equivocators’, claimed that, ‘this proposal amounts to a generalization to other realms of the plea that “God is not bound by human logic”’. Lewis went on to say that ‘the reason we should reject this proposal is simple. No truth does have, and no truth could have, a true negation. *Nothing is, and nothing could be*, literally both true and false.’³⁵

He famously declined to defend this claim, arguing that it was indefensible against the paraconsistent challenge. From his perspective, ‘[paraconsistent logicians] have called so much into question that I have no foothold on undisputed ground.’³⁶

And, once again, this bears comparison with the situation we found ourselves in when quantum mechanics was first formalised. Generally, we humans just do not comprehend contradictions, but the suggestion that we might somehow try nonetheless to work

³⁴ Stephen Read, *Relevant Logic: A Philosophical Examination of Inference*, (Basil Blackwell, UK, 1998), 5 (italics my own).

³⁵ David Lewis, ‘Logic for Equivocators’, *Nous*, Vol 16, No. 3, (1982), 5 (italics my own).

³⁶ Lewis, ‘Logic for Equivocators’, 5.

with, or otherwise embrace, them can be responded to in (at least) the same two ways outlined in the discussion on quantum mechanics.

So again, we will quickly note that one of the options we have here is to follow where the formalisms lead, yet also continue to hope for a deeper understanding of what they might actually be about, to find a firmer footing at some stage down the track (or, over the cliff, as the case may be). Many paraconsistent logicians do indeed feel that true contradictions in some way actually (or ‘really’) ‘happen’, and are, in an important sense (in this case, specifically in the sense that some things follow deductively from them and some do not) *about* something, at least in as much as is any meaningful proposition in the system. Ideas of just what they might be about vary according to different ‘optimistic’ accounts: from the true nature of consequence, to real ‘dialethia’ – but the point is that paraconsistent logicians generally share the conviction that contradictions are not just empty (or simply incomprehensible *per se*) formalisms with which we can do nothing (except watch our whole deductive system explode).

2.4. Summary and Conclusion of Section 2

From the examples we have very quickly skimmed across in this section, it seems we can at least begin to glean some central elements shared by each of the positions that we have identified as embracing what we might call ‘metaphysical optimism’. In each example, those positions not only allow that we go as far as (it seems) our formal systems and conceptual apparatus take us, they also exhort that we then look further still. They all involve a conceptual split between what we know and (apparently) can know, and what might lie ‘beyond’ that – whether the latter be truth or reality (or both). There is a conviction shared by each position that there is something ‘more’ or ‘outside’ or ‘bigger’ than the apparent limits of our knowledge, namely whatever it is that our knowledge is *about*.

The absence of metaphysical optimism, on the other hand, involves an opposing exhortation: while some taking this position allow that we go as far as (it seems) we can, all rule out or warn against going further. A line is drawn at the current (or apparently possible) limit of our knowledge, and we’re ‘pulled back’ from anything beyond that limit.

There is a certain unassuming meekness in this approach, insofar as it suggests that we must not presume that we can reach beyond what we’ve established. That is why, rather than as the opposite or direct negation of metaphysical optimism, I have suggested that those

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positions in which metaphysical optimism seems absent might better be thought of as a kind of ‘humility’. In practice, when it seems we’ve found a sort of ‘boundary condition’ on possible knowledge, ‘humility’ steps no further, whereas ‘metaphysical optimism’ nonetheless goes beyond (or looks beyond, or, at the very least, *allows* a ‘beyond’ at all).

In each of the cases we’ve looked at, it has seemed to many as though we’ve gone as far as we possibly can or should. But in each case, *hoping* to go further is nonetheless taken (by many others) to be a reasonable strategy. So, in each of the cases in which it is evident, the latter approach has been adopted in the face of a clear opposing argument, i.e. against the apparently reasonable supposition that we cannot possibly go beyond the point we have reached – that we cannot possibly know more, or that it is pointless to continue to wonder what all this might really be about.

3. The Main Philosophy Bit

3.1. *In more depth*

Recall that I’d hoped that through the examination of ‘metaphysically optimistic’ attitudes and methodologies, we would find something that may be useful to further inquiry. In this section I hope to go beyond the summary points gleaned above, to see if we can get a closer look at what exactly it is that we have identified as metaphysical optimism, recurring across all the examples above, and how it might be useful.

Mark Wilson goes some way toward more fully characterising the attitude of metaphysical optimism, and identifying what it is about that attitude that may be useful, across a number of pages in his *Wandering Significance*. The picture he paints is of our stumbling, but genuine, approach to reality or ‘nature’, of nature’s recalcitrance in the face of our determination to understand, and our adjusting, but continuing our efforts, in the face of this recalcitrance. In Wilson’s picture, the physical universe is a rambunctious child and the philosopher is a photographer who needs to find ‘odd and round-about strategies if [he] hopes to capture even a glimpse of our flighty universe upon [his] linguistic film’.³⁷

So perhaps we can begin to characterise what might be useful about such optimism (or, alternatively put, we can begin to characterise a

³⁷ Wilson, *Wandering Significance*, 11.

'useful optimism') as persisting with these 'odd and roundabout' strategies themselves, and persisting with envisioning new ones, in the hope they may (or can) somehow, someway, someday, help us 'see' or to know something larger or more than we can apparently, or to date, reach on our own, or with any of the conceptual resources we believe we have.

Wilson agrees with Hume's observation that we tend somewhat to *over-enthusiastic* optimism, but, interestingly, Wilson does not conclude, with Hume, that an optimistic *strategy* is always unwarranted or misleading. Indeed Wilson defends the strategy, pointing out that our grasp of a concept can itself be, quote, 'delivered [via] the midwifery of misunderstanding and false optimism'³⁸ – that even when wildly wrong or quite over-blown, our 'genetic inclination to seek unmerited certainty' has an important methodological role in the history of scientific process and the mastery of concepts in general. But he does also argue that, while we can *hope* for conceptual mastery or complete understanding, to be maximally useful, those hopes should be checked by 'patient temperance'.³⁹

Thus, his own strategy is quite moderate (in terms of optimism): he aims 'to bring our conceptual expectations into alignment with what is humanly feasible, without utterly shutting the door on our capacities to improve our usage in rigor and clarity'.⁴⁰

To more precisely pin down the sense in which he does not shut this door, we can note that Wilson's take on the well-worn metaphor of Neurath's ship is quite different from the usual. Typically, philosophers appeal to Neurath's ship as a metaphor for the limitations of our epistemic capacities. The image is of humanity at sea on a ship which, should we wish to do so, we can *only* re-build at sea, not in dry dock, and only by a piece at a time and with no clear or over-arching view of what the finished product is supposed to look like. This is meant as a sort of metaphor for holism, the theory that all our ideas are interconnected, and of our consequent inability to 'start from scratch' or finish 'to plan' in any way. Wilson, though, sees this ship quite differently: not as by necessity endlessly re-modelled, but as being able, one day, to be completed. In his own words, he does not shut the door on the idea that one day we will 'recognise how all its finished parts fit together'.⁴¹

³⁸ Ibid., 32.

³⁹ Ibid., 33.

⁴⁰ Ibid., 34.

⁴¹ Ibid., 27.

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The notion that we should not shut the door on the expansion of our current conception of what is ‘humanly feasible’ certainly does appear to be a useful one in our examples above. However, I think this notion should also include not shutting the door on entirely unexplained or unexpected ways the universe/reality can make itself known to us – e.g. unprovoked revelation, or inspiration, or intuition. As in the photography metaphor Wilson provides, our glimpse of the universe may owe as much to what shows itself as it does to our instruments of perception and reception. This indicates that a useful optimism is one which gives credence and attention to the idea of a ‘beyond’ what we believe to be the limits of our epistemic capacities – beyond what it currently seems we can know, or what it seems our theories can tell us. One of the first and most important things to note about this useful optimism (keeping in mind Wilson’s image of the photographer) is the way in which reality can then surprise us. In many ways, we could suppose that the attitude itself nurtures the conditions that need to be in place for such surprise to even have a hope of occurring. After all, we would not point and shoot (or try other ‘roundabout strategies’) unless we hoped something would turn up on our film.

A key element of Wilson’s own picture is the need for a balance between optimism and something we could align with what we have called ‘humility’. He suggests that without such a balance, it may be that optimism becomes somewhat less useful: perhaps more prone to running unchecked to all sorts of strange certainties and up all sorts of garden paths. But, the flip side, not as often noticed, is that equally, an excess of ‘humility’ might also lead us astray.

To help us see how the latter might occur, we can turn to Nancy Holland’s exploration of humility, to look in more depth at ways in which that notion might manifest.

Holland characterises what she calls ‘ontological humility’ as ‘a philosophical stance that acknowledges the limitations of human intellect and will, and the randomness of both our blessings and our burdens.’⁴²

This, Holland says, is an approach to what she calls the ‘transcendent condition of our being’, one which acknowledges the centrality of that transcendent condition, but limits our role in understanding it to one similar to my ‘unprovoked revelation.’ Further, for Holland, our own role is one of random receptivity at best, in that our experience of

⁴² Nancy Holland, ‘Humility and Feminist Philosophy’, *The American Philosophical Association’s ‘Newsletter on Feminism and Philosophy’* 13/2 (2014), 18–22.

this condition comes about *only* via what is ‘given’. This limits our own role to one of ‘being given to’, and the resulting relationship we then have with ‘what gives’ may not, in the end, look much like what we would ordinarily think of as knowledge.

Holland differentiates ontological humility, or ‘humility in the face of God’, from ‘epistemological humility’, which she characterises as ‘humility about the nature, extent, and reliability of human knowledge’.⁴³ It is hard not to agree that both sorts of humility are useful and wise; that the profound conviction or even hope for absolute certainty (the belief in ‘a knowledge that cannot be doubted’) is undesirable, and can in fact hobble discovery. But, in the spirit of learning what might be of use in metaphysical optimism, perhaps we need also to allow that acknowledging the necessity and importance of doubt, or ‘humility regarding human knowledge’, need not and should not *rule anything out*. In particular, I am not convinced that epistemological humility need entail ontological humility. The latter might also hobble discovery, especially insofar as it is a withdrawing from any hope of knowledge beyond set limits. At this point, pre-conceived, pre-conceded boundary lines, and limits on modes of possible reception, come back into play.

That is, given what we’ve started to uncover about the attitude and approach of metaphysical optimism, I am not convinced that, if we admit that knowledge can be doubted, we must or should then also imagine a boundary beyond which our hope for knowledge (in whatever form that may take: our purpose, attention or our love) cannot or ought not go. Metaphysical optimism looks, or more to the point, hopes to look, beyond such putative boundaries. It is the idea that we can approach what appears out of reach. But this is not simply random receptivity or openness, it is a positive rather than passive action; one motivated by the belief that such an approach will be fruitful, or may even yield knowledge (or at least something like it). Our quick examples in the first half of this paper show that there is no guarantee that a general methodological retreat or resignation is better, or more useful, than the practice of hope.⁴⁴ It appears that

⁴³ Nancy Holland, ‘Humility and Feminist Philosophy’, 19.

⁴⁴ Even at the extreme, or potentially ‘unhinged’ ends of those two approaches. Extrapolating from our examples, on what grounds could we argue that a comprehensive humility (say, an all-embracing check on our hope), is always (or ever) any better as a strategy than a comprehensive optimism (say, a wild, unchecked hope) as a way of proceeding in the face of the apparently ineffable?

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each attitude has useful elements. Although perhaps too, as Wilson suggests, each needs somehow to balance the other.

3.2. *Balancing Humility and Optimism*

We should note that Holland elsewhere defines ontological humility more explicitly as ‘a moral and philosophical attitude toward transcendence [which she defines as] – the *unknown* and *unknowable* background of existence – and a recognition and awareness of the contingency and chance that influence the course of our lives ... [and she later adds] humility is an attitude toward whatever one may take to transcend human knowledge.’⁴⁵

But, given what we know of metaphysical optimism, we can surmise that adopting *only* this sort of humility could pull us too far in one direction. As Holland acknowledges elsewhere: ‘to think we have absolute knowledge, even absolute knowledge that no knowledge is possible, is to deny human limitations.’⁴⁶ Thus, too heavily underscoring the unknowability of what transcends those human limitations, or narrowing the range of modes by which we could possibly understand or relate to it is, somewhat paradoxically, an over-reach: it is granting those human limitations undue power. The metaphysically optimistic approach, on the other hand, allows that we do not know what we cannot know. It recognizes that there are limitations to our knowledge but sees that these limitations include knowing precisely what the limitations themselves are, what they mean, how far they reach, and when and in which contexts they operate. Metaphysical optimism proceeds on the idea that one of the things we might not know is exactly where the boundary is between the knowable and the unknowable.

The suggestion here is not that humility should be avoided, but that optimism should, as it were, always be ‘on the table’, and its strategies seen as a viable and legitimate.⁴⁷

Our examples of encountering the ‘ineffable’ in other contexts (physics, mathematics and logic) indicate that ontological humility *by itself* is not the only way to go. We saw in those examples that ontological humility (i.e. deciding what is knowable and what is not, or resigning to either a fundamental impasse or the patient awaiting of

⁴⁵ Nancy Holland, *Ontological Humility: Lord Voldemort and The Philosophers*, (Suny Press, USA, 2013), 6, italics mine.

⁴⁶ Holland, *Ontological Humility*, 23.

⁴⁷ Thanks to Suzy Kilemister for this way of putting it.

gifted revelation) was only one of at least two options. And, as much as the former may be useful, there was also something useful in the latter (metaphysically optimistic) option.

We could note too that, in each of our examples, metaphysical optimism can be understood as approaching what's beyond comprehension with the hope that it will not (or not forever) remain that way. So, from our initial sketch, it seems that the approaching (rather than pulling back, or staying within) marks as important a difference between humility and optimism, as the putative boundary lines themselves. To genuinely approach, we need to step, or imagine, beyond any such lines or restrictions, rather than stay behind (or within) them: we look to know, or try to see, even where it seems knowing or seeing is impossible. This is just to say again (only now more precisely) that optimism pulls beyond, and humility pulls back.

But again, though the two are in this way in tension, this is not to say that optimism cannot work with humility. Such cooperation might be what Heidegger imagined when he wrote: 'only if we become truly humble is the scent awakened for what is great, and only if this occurs do we become capable of wonder'.⁴⁸

To further explore how the two might work together, remember that metaphysical optimism grants that our knowledge, and what it is knowledge *of* can come apart. Thus it can allow that the 'knowing' we might anticipate (and almost hand in hand with this attitude) the knowing we have established so far, is not necessarily tied down to one particular approach, perspective, or formalism. In this sense, knowledge is indeed doubttable, i.e. in the particular sense that it is not presumed to be an inherent part of any one epistemological route (after all, this is really just another way of saying that *what* we see is different/differentiable to *how* we see it). This is one key way in which metaphysical optimism can work with epistemological humility. But note again that metaphysical optimism can also nonetheless encompass the hope that what is transcendent will 'show itself', and in this way, metaphysical optimism can work with ontological humility: our approach itself may be an openness to reception; a respectful, careful, attention, rather than a striding ahead or rude grasping.

The main point is that, while the Coyote cases are extreme, the same strategy that we allow or can recognise as reasonable in those cases can be applied in other philosophical contexts – not just including the notion of transcendence, but also in more everyday contexts, including considerations of our more mundane or everyday hopes for

⁴⁸ Holland, *Ontological Humility*, 58.

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understanding. In particular, it can equally well be a strategy, or effective approach, regarding the potential revision and inherent fallibility of our *established* knowledge. *Hoping* that you do now know (or that you someday can) and being *certain* that you do indeed now know (and that you someday can), are two very different things.

3.3. Transcendence

Metaphysical optimism takes a key aspect of Iris Murdoch's attention epistemology as its starting point, namely 'that the direction of attention should properly be outward, away from self'.⁴⁹ Murdoch also talks about how the idea just outlined – i.e. of our knowledge as 'separable' or 'detachable' from what it is knowledge of – is related to the idea of transcendence (although Murdoch focuses on the realism with which 'detachable knowledge' is often associated) noting, 'one can see their relation particularly in the case of our apprehension of beauty. The link here is the concept of indestructibility or incorruptibility. What is truly beautiful is 'inaccessible' and cannot be possessed or destroyed ... great art teaches us how real things can be looked at and loved without being seized and used, without being appropriated into the greedy organism of the self. The experience of detachment is difficult and valuable whether the thing contemplated is a human being or the root of a tree or the vibration of a colour or a sound.'⁵⁰

This underscores the point made earlier, that our optimistically hoped for 'access' can, and perhaps often should, itself be a stepping back: a detached 'letting things be'.⁵¹ As Holland points out, Heidegger was both optimistic and humble regarding this idea: he (optimistically) allowed that we could concern ourselves with what he also (humbly) recognised as 'concealed' or 'unthought'. Similarly, we can argue that Heidegger's recommendation that we 'submit to what thinking has to think about',⁵² itself describes a sort of 'optimistic humility'.⁵³ But my point is that *that* hope: the hope

⁴⁹ Iris Murdoch, *Existentialists and Mystics* (Chatto and Windus, UK, 1997), 348.

⁵⁰ Murdoch, *Existentialists and Mystics*, 353.

⁵¹ Holland, *Ontological Humility*, 59.

⁵² *Ibid.*, 60.

⁵³ As a bit of an aside, Heidegger asks: 'is [this sort of] unthinking ("Alethia") less than truth, or more'? This of course invites the question of whether what we can hope for via this sort of 'letting be' approach, can be anything that looks like, or be best described as, knowledge or even 'truth'. And, perhaps after all, or in some cases, it cannot, quite. But even

that we can thus ‘concern’ ourselves, or that we can indeed let things be; can both remain one of humble wonder and still itself operate from the idea of access, or of positive, active approach, just by allowing that in some cases, the ‘access’ we hope for may be more of what Heidegger calls an ‘unconcealment’, and ‘unthinking’ than a construction, an understanding, or even a ‘thinking’. And, just so long as we allow this (i.e. that surrendering or ‘letting things be’ is an approach as well) then ontological humility and metaphysical optimism are, at least in this particular respect, one and the same (simply viewed from different angles or with different emphasis).

There is something both right and useful in Murdoch’s valuing of the notion of ‘inaccessibility’, as there is in Holland’s conception of ontological humility. The notion of the independence of our subject of inquiry from that inquiry itself, can and should, incorporate the idea of an ‘inner core’ (for want of a better way of putting it) or an element, of inaccessibility or ‘unknowability’, insofar as it should grant that our theories and knowledge can never encapsulate every single aspect of what they are about (if they could, the difference between the two would collapse). But it seems to me that in granting this, we often forget to note that such an approach also nurtures the potential for surprise, and motivates revisiting our existing notions of how our enquiries should and could turn out. That is, we often forget that there is a positive side to inaccessibility – such an attitude opens and enables and invites. The problem is that the idea of inaccessibility by *itself* can (and often does in the literature) collapse into skepticism or resignation: it can prevent our hopeful, optimistic approach or turn our gaze away.

So, I would argue that both stances – ontological humility and metaphysical optimism – when left unchecked by the other, run the same risk of becoming something more like arrogance: of ‘reducing [reality/what our theories are about] to nothing more than what we can know about it’.⁵⁴ Holland, though, along with a number of other authors in the philosophical tradition, associates this risk only

granting this (i.e. even granting that what we gain/receive via such approach might not fit so easily into our epistemological categories) need not run counter to optimism – a metaphysically optimistic approach here would simply hope Alethia, if not ‘truth’, is indeed ‘more’ than truth, rather than ‘less’ – allowing that, when something does not quite fit our epistemological categories, it may be because what is gained is more than those categories can contain – (rather than less, or in some way still essentially out of our reach).

⁵⁴ Holland, *Ontological Humility*, 56.

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with one extreme, i.e. with a lack of ontological humility, or an excess of optimism.

But, if ontological humility becomes a declaration at the outset (and I think we are always at the outset – or perhaps, it's more accurate to say we don't know that we're not), or if it slips into fixing on the idea that whatever might transcend what we can epistemologically access (or go beyond what our theories and formalisms suggest) is fundamentally, always, or in some particular circumscribable way, *not knowable*, then it would, I suggest, be as arrogant as any position declaring that the transcendent is entirely knowable.

In both cases, the useful role for humility is, I think, to avoid convincing ourselves that 'by golly we *do* know!' which is just, again, to equate knowledge with its subject. But both ontological humility and metaphysical optimism can fall into this trap. A metaphysical optimism that stipulates that what we hope we know (either regarding what transcends the limits of our theories or their established core) is in fact fixed, or determinate, or undoubtable, or absolutely known, lacks this sort of useful humility. But so too does an ontological humility that stipulates that we *know* what we can and cannot know.

It is interesting to note that each extreme (where humility or optimism turns into arrogance) totalises or universalises in some way. Unchecked Optimism says: we *definitely* know, or what we know is *certainly* truth. Unchecked humility says: we know how to know, and *all* that lies beyond or falls outside this is fundamentally not accessible, or accessible only in certain proscribed ways.

So again it appears that both sorts of arrogance (although they may work in some exceptional cases),⁵⁵ are to be avoided if we want, on the

⁵⁵ For all that, I do not think we should rule out the more arrogant, extreme ends of either attitude as (sometimes) workable strategies in some contexts. What I'm calling 'unchecked' humility can play a crucial role in developing constructive solutions. But, equally, unchecked optimism can provide solutions – perhaps more surprising solutions. We can offer up examples of rigorously (or 'constructively') won scientific progress, *as well as* examples of insight and progress that seem to have come from no-where like where they're meant to, and so too from the allowing of the possibility that they might. Ramanujan might be one such: his insight didn't come from a rigorous understanding of mathematical formalisms. Einstein's 'gedanken' and Gödel's 'intuition' might be others. These insights can't always be reduced to sudden leaps within a system of thought. At times they seem genuinely to look at that system from an entirely other angle. And at those times the image of an explorer may be far more apt than that of a constructive or even a necessarily 'rational' thinker.

one hand, to have the best chance to ‘discover’, or, on the other hand, to remain open to possibility, and changing our mind.

Holland claims that ‘ontological humility allows us to see beyond claims of certain knowledge’.⁵⁶ The interesting thing is that the same can be claimed for metaphysical optimism, especially if we replace ‘certain’ with ‘possible’. So it seems, again, that for either position to operate most effectively, it must be pulled both ways (and land somewhere ‘in the middle’): ontological humility must be ‘checked’ by optimism, and optimism must be checked by humility. That is, just as optimism may be at its best (or perhaps better to say, most generally useful) when it is pulled back by humility (e.g. when it approaches with respect, love and detachment); equally, humility may be at its best (or most useful) when pulled toward optimism, becoming less an attitude of ‘we *cannot* go beyond’, and more one of ‘maybe we *might*!’

3.2. Applications in Philosophy

Finally, I want to take a quick look at how the concept of metaphysical optimism might apply to the realism/anti-realism divide.

The key elements of the ‘middle’ position outlined above – i.e. not to hang on too tightly to either our theories *or* what we hope those theories are about; to be willing to reconsider, or to continue to consider, what it is we think we know *about*, as well as what and how it is we think we know at all – can be found across both anti-realist and realist views. For example, an anti-realist can adopt an optimistic *strategy* either by proceeding *as if* there is something beyond or other than our theories and thought about which there is more to ‘discover’ (perhaps adopting/embracing the idea as a sort of Kantian regulative ideal), or by limiting the hope to the potential expansion of our *capacity* (rather than our discovery). Wilson’s completed Neurath’s ship metaphor can work both realistically and anti-realistically in this way.

But this is insofar as we consider metaphysical optimism as a practice or strategy only. Once we consider it as belief or idea: the idea that what our theories and thought are about is *really more than* or independent of the theories and thought itself, then it lines up less with anti-realism and corresponds more to (at least a particular element of) realism.

⁵⁶ Holland, *Ontological Humility*, 61.

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But, it is important to note that this correspondence is not with only with one *sort* of realism, say, with realism traditionally conceived. At first it may seem that optimism as a belief or idea is correlated only with a particular type of ‘strong’ realism, i.e. with the idea that our formalisms can (and should) tell us something about an independently real world, traditionally conceived (e.g. fixed, determinate, etc.). But, metaphysical optimism by itself does not proscribe how the world should turn out, what it might be like or what it might *be*, beyond separable from our theories/thoughts. At least, it does not need to in order to be the sort of idea that seems useful in the examples we’ve looked at.

To re-iterate, metaphysical optimism does not need to claim that the world, or whatever our theories are about, should *be* anything, and that includes determinate, eternal, unchanging and even physical. It need only believe that whatever our theories are about should be considered for its own sake – *as distinguished/distinguishable from the ways in which we talk and think about it*.

Individual positions incorporating an optimistic attitude *can* of course proscribe or overlay expectations on how this stuff should or could be, and can have elements of arrogance as well. For example, according to some accounts, Einstein was pretty adamant that the world should be made up of separable bits, but that is not the only metaphysically optimistic way to think about the world. John Bell would also count as a metaphysical optimist. Bell described the Copenhagen attitude as believing that the quantum mechanical formalisms were ‘just fine for all practical purposes’, and argued that this was not enough. He felt we needed to ask more of the formalisms, namely, that they give us a clear, thorough understanding of what exactly they were saying about reality. He was immensely interested in the question of what they were about, e.g. exploring the potential difference between what he called ‘observables’ and ‘beables’.⁵⁷ But, contra Einstein, Bell’s inequality means entangled quantum particles have either nonlocality or nonseparability. While it’s conceivable that one might be in some sense a realist about such particles, it’s a very different realism than the traditional version (with its emphasis on how the things that our theories are about should turn out to be; in this case, consisting of identifiable, self-contained individuals).

Wilson’s rather pragmatic realism is another case in point. Wilson brings ‘the real world’ into his theory of concepts and conceptual development simply as the common sense idea that there are subjective

⁵⁷ M. Bell, K. Gottfried, M. Veltman (eds), *John S. Bell: On The Foundations of Quantum Mechanics*, (World Scientific, UK, 2001).

‘structures of conceptualisation’,⁵⁸ and there are real world correlates of these, and that the two can be untangled (to varying degrees, depending on the context). Wilson does not commit to the real world conforming to a particular set of beliefs about exactly what it should be. He just brings that ‘real world’, and the idea of our concepts being *about* it, squarely back into the picture.

There are then two ways of thinking about metaphysical optimism: as a strategy, and as a belief. Utilising the first, we can envisage various degrees of humility through to various degrees of optimism as a spectrum of possible *strategies*. This gives us a new way to think about the *practical* elements in the positions of the older anti-realism/realism spectrum, insofar as it may pick up some of the essential elements of what various positions along that spectrum might boil down to *in practice*. In this case though, neither spectrum neatly correlates with the other. So then, one of the ways in which the humility/optimism spectrum is useful is the way in which it can motivate an ecumenical approach toward the *strategies* employable across the anti-realism/realism spectrum.

But once we conceive of these strategies as beliefs, then metaphysical optimism correlates more with realism and humility correlates more with elements of anti-realism.

3.3. Realism

To look more closely at the relationship between the idea/belief of metaphysical optimism and its relationship to realism, we turn again to Iris Murdoch.

Murdoch is at pains to remind philosophers that how we think and believe, see and describe the world are among our choices, just as much as how we act. In ‘On god and good’ she defends choosing the notion of a ‘perfect, transcendent, non-representable and necessarily real object of attention’, an idea which, she argues, if adopted as *belief*, has the power to modify the meanings of our words, and to inspire and illuminate.⁵⁹ But she adds that if the notion is adopted simply as ‘a psychological device’ or strategy, its potency is lost. That is, in order to be effective, or most effective, it needs to be a genuine belief and not the adopting of a strategy or an ‘acting

⁵⁸ Wilson, *Wandering Significance*, 79.

⁵⁹ Murdoch, *Existentialists and Mystics*, 350. The relevant quote: ‘the idea of perfection ... [produces] and increasing sense of direction ... and is a natural producer of order...’

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as if'. She also argues that the general inclination of analytic philosophy is to reduce beliefs and ideas to actions or strategies, and points out that because of this, philosophers often miss an important aspect of what it is to be human.

A similar argument might be offered regarding metaphysical optimism: to be most effective in ordering our ideas and enriching the potential for the discovery of new and surprising truths, it may need to be adopted as belief, not simply as strategy. It may be that the strategy is at its most effective and interesting when it takes the metaphysical idea seriously and so is not acting *as if*, but genuinely looking to what our thought and talk are about as itself a source of wonder, study, concern and discovery.

So, my final point makes a return to the notion of transcendence. As Murdoch ably illustrates in the same work (which includes the quote above about beauty), 'just as there is a relationship between metaphysical optimism (as belief) and realism, there is a relationship between both and the idea of transcendence'.⁶⁰

To return to the idea of transcendence then, I want to draw attention to a trick Wilson pulls, as an argument for his own particular 'common sense' realism. He quotes a passage criticising 'metaphysical realism', in which the author speaks in general terms about the sort of 'reality' and our relationship to it that the author takes such a position to involve:

'The idea behind metaphysical realism is that we can conceive of the entities and substances and species of the "external" world independently of any of the empirical beliefs and theories we hold or might hold in the future ... [metaphysical realism] imagine(s) we can completely distinguish between what we believe and think about the things to which we refer, on the one hand, and the pure truth about these things, on the other'.

Granting that 'described in these sweeping terms' metaphysical realism sounds rather foolish, Wilson 'lowers the level of abstraction' by substituting the word 'rabbit' for the more generally referred to independent 'stuff' throughout....

'The idea behind metaphysical realism is that we can conceive of rabbits and their liking for carrots independently of any of the empirical beliefs and theories we hold or might hold in the future ... [metaphysical realism] imagine(s) we can completely distinguish between what we believe and think about rabbits and their favourite foods, on the one hand, and the pure truth about these things, on the other.'⁶¹

⁶⁰ Murdoch, *Existentialists and Mystics*, 350 (italics mine).

⁶¹ Wilson, *Wandering Significance*, 79.

Wilson's point is that now metaphysical realism does not sound like such a foolish policy after all.

What we've covered in this paper supports a version of this argument, only turned upside down. We've noted (just a few) of the many places key places in physics, logic and mathematics wherein great minds have proceeded on the conviction that there is something worth wondering about, acknowledging and attempting to see, beyond what we know and even what it seems we can possibly know. We have noted that this conviction has played a crucial role in deepening our understanding and progressing those fields. But now we can note that, if we grant these cases are acceptable, and the conviction therein granted as rational or reasonable, we cannot so easily rule against the 'more sweeping' versions of the same idea in other contexts.

Wilson's point is that 'we should not allow scare-quoted phrases such as ... "an imagined external reality" to persuade us that everyday assertions such as "rabbits" refers to rabbits' represent some wild-eyed form of "metaphysics" comparable to belief in astral projection.'⁶² My point is that, equally, we should be careful not to *confine* our metaphysical beliefs to rabbits.

As touched on in the introduction, to presume at the outset that there is a special set or *type* of thing that our wondering and thinking has to be about in order to qualify as 'metaphysics' is to beg the question. Equally, when we come to contemplate the reasonableness or otherwise of such 'metaphysical' ideas in abstract or more contentious contexts such as the traditional realist belief in transcendent truth, which, after all, is simply the notion of truth beyond the 'edge' of our knowledge, we should not ignore what has happened and is still happening in other fields, or in more 'everyday' contexts. Particularly, we should not ignore strategies and beliefs that have been accepted as reasonable and rational and have proved fruitful when those fields have come – Coyote like – to their own edges: where apparent halts or boundaries to our knowledge seem to leave us dangling in thin air.

As Murdoch points out, just because (it seems) we cannot *establish* the transcendent by philosophical argument, does not mean we cannot or ought not to believe in it.

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⁶² Wilson, *Wandering Significance*, 80.