

Beyond Dogmatic Finality: Whitehead and the Laws of Nature

Draft Paper

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The debate surrounding the laws of nature continues to be one of the most important and interesting topics for metaphysics because, as Stephen Mumford¹ has recently argued, scientists are no more certain about what the laws of nature actually are than philosophers. It is the job of scientists to discover natural laws, but the answer to the question which guides Whitehead's enquiry - 'What exactly do we mean by the notion of the Laws of Nature?'² - remains unclear. In this paper I will focus on the discussion of the laws of nature presented by Whitehead in *Adventures of Ideas*. An earlier theory of nature's laws can be collected from the scattered comments found in both *Science and the Modern World* and *Process and Reality*. This earlier theory owes much to the Cambridge Personal Idealist James Ward. However, I will argue that that the discussion of nature's laws in *Adventures of Ideas* functions as an interesting development of this theory. The discussion expands well beyond the laws discovered by science towards an important discussion of philosophical methodology, a defence of metaphysics and, perhaps most importantly, a defence of systematic thinking - on the condition that such thinking never lapses into dogmatic finality. Whitehead therefore does not offer us a finished theory of nature's laws; rather, he introduces four dominant doctrines all with distinctly different answers to the question: 'what is a law of nature?' First, the doctrine of law as imposed; Second, the doctrine of law as observed succession; Third, the doctrine of law as immanent; and forth and finally, the doctrine of law as conventional interpretation. His critical discussion of the dominant doctrines of the laws of nature is aimed towards showing how the first three doctrines should not be seen as working in strict opposition. Each doctrine is what Whitehead calls a 'working

¹ Mumford, S. (2004) *Laws in Nature*. London: Routledge

² Whitehead, A.N. (1933:142) *Adventures of Ideas*. Cambridge: Cambridge University Press. *Hereafter AI*

hypothesis' each with its own successes and its own failures. Whitehead then, I will argue, attempts to reunite these theories so that they can 'grow together' producing a new 'working hypothesis' with a 'wider sweep'. This veritable concrescence of theories in turn must not be seen as a final theory but one which must be critiqued and developed on its own terms.

I will argue that it is not that Whitehead offers us a radically new theory of laws in *Adventures of Ideas* but rather that he uses the laws of nature as an example of how metaphysics must be done. Metaphysics must not be seen as the battleground for mock combats between absolutely opposed armies but rather the breeding ground in which discordances between theories can produce new and improved theories. Metaphysics must always be a process of development. Finally, I will conclude this paper, with an examination of Whitehead's final recorded comments on nature's laws, recorded by Lucien Price in his *Dialogues*, in which he suggests that the analogy with laws should perhaps be rejected altogether. These late dialogues show that this as a question which Whitehead continued to think through and develop his thoughts on well after the publication of *Adventures of Ideas*.

James Ward and Whitehead's Theory of Laws Before Adventures of Ideas

Whitehead's theory of nature's laws in both *Science and the Modern World* and *Process and Reality* is a theory of evolving patterns. As Pierfrancesco Basile³ has pointed out, this theory seems to clearly echo the theory of nature's laws presented by the Cambridge personal Idealist James Ward. For Ward⁴, the laws of nature are the global patterns which emerge from the egoistic activities of a community of mutually creative monads, aiming towards a kind of unreachable Platonic/Hegelian 'Idea of the Good'. The unreachability of this goal means that Ward's monads are constantly evolving entities which, through their mutual activities and creative syntheses form novel emergences. The background independence of the monadological framework means that

³ Basile, P. (2007) 'Rethinking Leibniz: Whitehead, Ward and the Idealistic Legacy', *Process Studies* (2007) Vol. 35. No 2.

⁴ See Ward, J. (1903 [1915]) *Naturalism and Agnosticism: 4th Edition*. London: A & C Black, Limited

there can be no laws prior to the monads themselves. The only law determining a monad's behaviour is its individual appetite. The original spontaneity of the monads is tamed and controlled by the mutual interaction with every other monad and therefore temporary habits are formed. The laws are the product of evolutionary processes and there is always the possibility of the creation of new patterns and the potential for the evolution of new laws. The laws of nature which the physicists search for, must merely be the statistical averages of habits formed by monadic interactions. Ward claimed that while the statist is aware of the deviations underneath his aggregates, the physicist is blind to this fact and treats his abstractions as if they were realities. Whitehead's theory of laws differs little from this explanation. Laws are statistical, dominant at a certain level but ultimately glossing over the lapses and deviancies underneath the particular observed level. The laws are not outside forces controlling the social environment but on the contrary they are the outcome of the social environment.

Adventures of Ideas: Four Doctrines

In *Adventures of Ideas*, the discussion of nature's laws takes up a much more important role. Whitehead opens up his discussion by emphasising the wide scope of the notion of law. Such a discussion is not only of interest to scientists but is also essentially important for technology, methodology, scholarship and speculation. The question that guides Whitehead's enquiry is: 'What exactly is meant by the notion of the Laws of Nature?' In order to attempt to navigate through all the various contours of this question he offers us four doctrines which he believed to be the most dominant of his day: 'the doctrine of Law as immanent, the doctrine of Law as imposed, and the doctrine of Law as observed order of succession, in other words, Law as mere description, and lastly the later doctrine of Law as conventional interpretation.'⁵In this section I will present an overview of these four doctrines exploring Whitehead's analyses of this doctrines as important 'working hypotheses'. First, I will start with the doctrine of Law as observed order of succession.

Whitehead describes this first doctrine as defining law as little more

⁵ AI 142

than the observation of the persistence of patterns. At first sight this appears to be very much in keeping with Whitehead's comments on laws in *Process and Reality*; that laws are merely 'statistical facts'. Whitehead's problem with this doctrine is that it is necessarily limited in its focus. The theory is associated with the positivist philosophers and the doctrine of law as observed order tells us only about the individual observed facts which make up the succession. Each observed fact is a contingently new moment. There is no search for an underlying principle of reason or a principle of causation and any attempt to undergo such a search is met with extreme scepticism. Faith in induction meets a similar fate. However, Whitehead argues that this doctrine is ultimately descriptive of the truth of scientific methodology: 'Observe and observe, until finally you detect a regularity of sequence'⁶.

In *Modes of Thought* Whitehead is uncompromising in his critique of this doctrine: 'Suppose that a hundred thousand years ago our ancestors had been wise positivists. They sought for no reasons. What they had observed was sheer matter of fact. It was the development of no necessity. They would have searched for no reasons underlying facts immediately observed. Civilization would never have developed'.⁷ The problem with the rejection of metaphysical speculation implicit in this doctrine is that its epistemological atomism inspired by Hume's denial of necessary connections, unconsciously turns into a dogmatic adherence to an unappealing metaphysical atomism. The seductive appeal of this doctrine is that it eliminates the need for the somewhat messy and difficult metaphysical doctrines of God and internal relations, but this neatness comes at a high cost and is only possible at a certain level of abstraction. One of the most important costs is that all faith in induction must be abandoned. If epistemological atomism will not allow us to see the next moment as conditioned by its prior moment then we can make no sense of probability whatsoever. If probability is absolutely unlimited then the notion of chance is almost meaningless. Statistics cannot help us unless we make some illegitimate metaphysical claim for the permanence of statistical form. All that is left is contingency in its most absolute form. Even expectation then cannot answer Hotspur's question, 'But will they come, when you do call

⁶ *AI* 149

⁷ Whitehead, A.N. (1938) *Modes of Thought*. New York: The Free Press. *Hereafter MT* p149

for them?⁸

The second dominant doctrine is the doctrine of imposed law. In *Process and Reality*, it is this doctrine which suffers the most vicious critique. This is because the doctrine of imposed law has more often than not been put in place for the purpose of adding some order to a universe composed of passive entities. When the notion of Aristotelian active substance was replaced by Cartesian passive substance some extra entity was needed to make the passive substances behave in an orderly fashion. It is therefore unsurprising then, as Ruby has recently noted, that the notion of ‘laws of nature’ really began to take hold at the same time as Cartesian substance. But it is clear that Whitehead considers this a poor solution. He writes: ‘those modern empiricists who substitute ‘law’ for ‘causation’ fail even worse than Hume. For ‘law’ no more satisfies Hume’s test than does ‘causation’. There is no ‘impression’ of law, or of lawfulness.’⁹The doctrine undergoes similarly severe critique in *Adventures of Ideas* however, the ‘working hypothesis’ gets a fairer treatment and its successes are assessed as well as its failures.

As the doctrine suggests constituents which are ultimately passive, these constituents must be connected solely by external relations; this relationship between constituents is imposed by the laws of nature. The unsavoury problem which this doctrine introduces is the problem of ‘laws-particulars’ dualism. The particulars can tell us nothing about the laws which are imposed on them and the laws can tell us nothing about the particulars which they govern. This doctrine, which is almost the ‘common sense’ view of laws, is unsatisfactory for the same reason that Cartesian dualism is so unsatisfactory. Just as there is no satisfactory account of how a cogito entirely separate from its body can govern it, there seems to be no satisfactory account of how laws entirely separate from particulars can govern. Just as a mind-matter dualism seems unappealing, so does a laws-particulars dualism. This Cartesian dualistic theory of laws is suggestive of a transcendent imposing Deity who must be obeyed. As Whitehead writes: ‘When he said, Let there be light there was *light* and not a mere imitation or a statistical average’¹⁰.

⁸ *AI* 160

⁹ *PR* 167

¹⁰ *AI* 145

The success of the doctrine of imposed law is that it is very difficult to understand how any kind of consistent pattern could exist without it. Regardless of whether entities are the epistemological atoms of the law as mere description or immanent powers, the question which remains is: ‘how does contingency develop into something resembling necessity?’ In addition, the whole impetus for scientific research has been based around the discovery of something resembling imposed order, even before Descartes. And as Whitehead stated in the quote above from *Modes of Thought*, without this impetus for the discovery of order or for the discovery of reason there would be no science and no civilisation.

The third doctrine ‘The doctrine of conventional interpretation’ receives the least attention. It considers the laws of nature as arbitrary systems of speculation formed without any reference to direct observation of nature itself. The success of this doctrine is that it describes the process by which speculation develops into an interpretation of Nature. Mathematics is a particularly good example of such a discipline which has developed along these lines. Subsequently, mathematics has provided the tools for an interpretation of nature. ‘The conclusion seems to be’, Whitehead remarks, ‘that Nature is patient of interpretation in terms of Laws which happen to interest us’¹¹.

Mathematics has attempted to show that there is an element of arbitrary truth regarding our interpretations of the world. When interpreting the geometrical character of nature, any region which exemplifies metrical Euclidean geometry can also be interpreted in terms of metrical Elliptic geometry and metrical Hyperbolic geometry. However, Whitehead argues that this type of mathematical truth has no bearing whatsoever on the laws of nature. For each geometry exemplifies a different form of distance. He jokes that if this method of ‘conventional interpretation’ could be used for nature’s laws, we would have to ask our friend who had just motored for a hundred miles to see us, which form of geometry he had used. Therefore, Whitehead argues that, as it is fairly obvious that we all adopt the same system: ‘the appeal to geometry can be dismissed when we are discussing the question of

¹¹ *AI* 174

the conventionality of the laws of nature'.¹²The doctrine of 'conventional interpretation' does express an important truth of scientific laws - that the laws we are currently aware of are the laws as interpreted in terms of the currently available mathematics and physics. There is no doubt in Whitehead's mind that there are a huge number of abstract sciences still to be developed, all of which will guide our search for laws. The truth of conventional interpretation is that laws can only be interpreted by those methods we have so far discovered. The error of conventional interpretation is to twist this doctrine and to assume that the facts of nature can be used to illustrate any kind of law we may wish to attempt to apply.

The fourth and final doctrine 'the doctrine of law as immanent' is certainly the doctrine that Whitehead discusses with the clearest approval. He suggests a starting point for this doctrine which could be read as the absolute antithesis of the epistemological atomism used to start the doctrine of law as mere description. For this starting point he turns to Plato's *Sophist* in which the Eleatic Stranger offers to Theaetetus a definition of reality as simply power: 'My suggestion would be, that anything which possesses any sort of power to affect another, or to be affected by another even for a moment, however trifling the cause and however slight and momentary the effect, has real existence; and I hold that the definition of being is simply power'.¹³This definition makes the ability to cause an effect, to produce a difference or to be effected the very definition of reality. The very test which anything must go through in order to prove its existence is that it must be able to cause an effect. The very essence of being is power. If Whitehead's philosophy is the inversion of the neo-Humeanism of the positivists, as he claims in *Modes of Thought*, it is because Plato's reality test is his starting point for metaphysics not epistemological atomism which must only be regarded as a secondary conjecture. Starting from this reality test requires a return to the doctrine of internal relations expelled by Hume and his followers.

The individual patterns characteristic of a constituent's internal denominations combine to create higher order patterns through their mutual relations with other natural things. The combinatory emergent patterns are

¹² *AI* 175

¹³ *Sophist* 247E, Jowett's translation *In. AI* 153

the laws of nature. Absolute being and absolute laws are abandoned in favour of interdependence. As these individual constituents change so will the laws of nature. Therefore, one important consequence of this doctrine is that we cannot expect exact conformation to any law, but that does not mean that we must abandon all faith in induction as we must with the doctrine of observation. Of all the doctrines discussed by Whitehead, this is the only one which considers nature as intrinsically powerful and alive; therefore the creative urge of nature gives us some reason to have some limited faith in induction. We are not brought towards necessity but rather Platonic persuasion. In *Modes of Thought* Whitehead defines the essence of power as the drive towards aesthetic worth. It is responsible for both efficient and final causation. 'It is efficient cause, maintaining its power of survival. It is final cause, maintaining in the creature its appetite for creation'¹⁴.

Perhaps controversially Whitehead states that the doctrine of the law as immanent is the one now defended by physicists for the majority of nature's laws. Presumably Whitehead believed that this was the implicit assumption of his contemporary physicians rather than a view they overtly announced. This would make sense in the context of his claim from 'Nature Lifeless' in which he argues that: 'The presuppositions of yesterday's physics remains in the mind of physicists, although their expert doctrines taken in detail deny them'¹⁵

A Concrescence of Theories

Whitehead not only finds in Plato the first doctrine of the law as immanent, but also the first attempt to unite this doctrine with the doctrine of law as imposed. This is the first important concrescence of theories. It is through Plato that we find the reconciliation of the nature of individual temporal constituents with Eternal Being. Imposed law is not found in a transcendent creator but rather Whitehead finds in his modification of Plato's receptacle a way to combine the two doctrines without falling into impossible heterogeneous dualism. The Receptacle of becoming is introduced into Plato's cosmology in order to explain how a realm of pure becoming can have any sort

¹⁴ *MT* 119

¹⁵ *MT* 131

of *thisness*. To think of things as material substances is a mistake, the pure becomings of powers form combinations which are only a unity through the permanent being of the Receptacle. Plato claims that the Receptacle is ‘a nature invisible and characterless, all-receiving, partaking in some very puzzling way of the intelligible and very hard to apprehend’.¹⁶ Whitehead’s own use of the Receptacle is an adjustment of Plato’s original model. While for Plato things move in and out the Receptacle, Whitehead’s Receptacle is the receiver of all actual occasions, the matrix of their interconnections and objective immortality. While the Receptacle is permanent, its form is always in flux due to the processual nature of Whitehead’s metaphysics. It is the form of the unity of the multiplicity to which all future occasions must conform. Whitehead argues that the Receptacle should be the model for our conception of space-time, not an exterior background but rather the general interconnectedness of all actual entities, a single community of connected yet individual actual entities advancing towards novelty. ‘The real point is that the essential connectedness of things can never be safely omitted. This is the doctrine of a thoroughgoing relativity which infects the universe and which makes the totality of things as it were a Receptacle uniting all that happens.’¹⁷ While the receptacle imposes a common relationship, it has no power to impose the particular form of that relationship. The law of imposition is not imposed by the receptacle but rather it is the very interconnectedness and the objective immortality of all passing occasions which imposes the future law to which all following actual occasions must obey.

The discussion between the Eleatic stranger and Theaetetus in *The Sophist* unearths a third type of reality, *eidola*, an intermediary between absolute reality and the totally unreal. This region must exist otherwise it would not be possible to talk about the false. The stranger argues that we must part with Parmenides and agree that ‘what is not, in some respect has being, and conversely that what is, in a way is not.’¹⁸ Whitehead heralds this as one of Plato’s greatest discoveries. However, Plato’s use of the doctrine of not-being extends only as far as the Ideas and Whitehead argues that Plato should have

¹⁶ *Timaeus* 51A. While Whitehead uses the A.E. Taylor translation and commentary, all quotes in this essay are from Cornford, F.M. (1935) *Plato’s Cosmology: The Timaeus of Plato*. Cambridge: Hackett

¹⁷ *AI* 197

¹⁸ *Sophist* 241D

extended this doctrine further. He should have also applied it to perishing occasions. ‘When they perish’, he claims ‘occasions pass from the immediacy of being into the not-being of immediacy. But that does not mean that they are nothing. They remain “stubborn fact”’.¹⁹The doctrine of the being of not-being allows Whitehead to produce a conception of both the immortality of the past and the lure of potential Ideas as *de re* rather than *ante re*, that is, part of the unity of nature rather than external to nature. It is this doctrine of the being of not-being which allows the receptacle imposing and uniting power. The process and creation of the future must always obey the objective immortality of the past. Not only is the universe a Receptacle but also our own personal unity can be seen as Receptacle, ‘invisible, formless, and all receptive. It is a locus which persists, and provides an emplacement for all the occasions of experience’.²⁰This is not Plato’s doctrine of the soul, Whitehead tells us, but it provides a much more satisfactory account of personal unity.

If in Plato we find a concrescence of imposed law and immanent law, in Epicurus we find the first concrescence of imposed law and law as mere description. And it could be argued that in Whitehead we find a concrescence of Plato and Epicurus. Lucretius’ *Nature of the Universe* is the epic of the atomic theory in which ‘the world is an interminable shower of atomic particles, streaming through space, swerving, intermingling, disentangling their paths, recombining them’.²¹The problem with the atomistic theory is that it fails to go far enough and to reach the intrinsic nature of the atoms. However, it does seem to supply Plato’s ‘missing text’. Whitehead argues that Plato should have written a companion book for the *Symposium* in order to highlight that Eros can never be thought adequately without also paying attention to the ‘Furies’ - the horrors of imperfect realisation. And who better to supply this book than the Epicureans. Whitehead further expands on this confrontation between Eros and the Furies in his discussion of Beauty and Evil when he claims that this intermingling is the result of the finitude of actualisation and the necessary exclusion of alternative possibility which results from this finitude. In Epicurean terms we can say that: ‘Even the

¹⁹ AI 305

²⁰ AI 241

²¹ AI 155

sunbeam, falling on shady places, is an image of this eternal war'.²²

Such a concrescence of theory can also be seen as necessary from the discussion of Leibniz and Lucretius. If both thinkers obtained such different answers from their enquiry into atoms, it is because they asked such different questions. Lucretius, Whitehead claims, can tell us what an atom might look like to others, but Leibniz's phenomenology of the atom is an answer to another question: 'how an atom is feeling about itself' – Leibniz extends the experiential intuitions of philosophy all the way down to the ultimate constituents and therefore discovers experience all the way down. Lucretius examines the objective while Leibniz investigates the subjective but neither side can be ignored. Leibniz takes us towards the doctrine of immanence, but Leibniz is still too trapped by determinism, too trapped by Plato's Eros and therefore fails to recognise the necessity of the companion text the Furies. As a result Leibniz ends up endorsing one of the most extreme doctrines of imposed law in the history of philosophy.

If the doctrine of law as immanent is the most important doctrine for Whitehead, it is because the doctrine of law as imposed and the doctrine of mere description make no sense without it. They lead us into absurdities and false dilemmas. These problems can only be overcome if our working hypotheses can be developed together. This requires a sensitive openness to our philosophical intuitions and careful examination of the various methods of philosophical enquiry which must not be seen in strict opposition but rather evaluated in terms of what their discordances can offer. The doctrine of law as imposed and the doctrine of observed succession present theories which are clear and distinct, but this clarity must not be seen as originary but rather arising from the vagueness of the background of power.

Methodology

Whitehead's discussion of the laws of nature is not only a development of a theory only sketched in its briefest outline in *Process and Reality* but it also serves as a discussion of the importance of the constant development of

²² Marx, K. (1839 [1927]) *Marx's Notebooks on Epicurean Philosophy: Fourth Notebook*. [online] available at: <http://www.marxists.org/archive/marx/works/1839/notebook/index.htm> Accessed on: 23.08.2008

metaphysics. It serves as an argument for working hypotheses under scrutiny rather than dogmatic finalities. It is not only the theory of laws which is important but also the very method of speculation itself through which we theorise. Both sides of this debate are as important as each other. This is made clear when Whitehead remarks that: ‘it is interesting to notice that, according to Plato, the distinguishing mark of the philosopher in contrast to the Sophist is his resolute attempt to reconcile conflicting doctrines, each with its own solid ground of support. In the history of ideas the doctrine *of* Speculation is at least as important as the doctrines *for* Speculation’²³. It is for this reason that the discussion of nature's laws extends past the various doctrines and all the way to philosophical methodology. It could be argued that Whitehead's discussion of the laws of nature essentially fulfils a similar role in his *Adventures of Ideas* as Kant's ‘Amphiboly of the Concepts of Reflection’ fulfils in the *Critique of Pure Reason*. For Kant, a philosopher commits an amphibolous fallacy when he conflates the understanding and sensibility – a fallacy of treating two very different faculties as if they were one. The two philosopher's guilty of committing the amphibolous fallacy were Locke and Leibniz. Leibniz's error, Kant claimed was to ‘intellectualise’ appearances and thus underestimate the importance of sensibility. Locke committed the opposite error and underestimated the importance of the understanding whilst claiming that everything comes from the senses. The bulk of the amphiboly is taken up by Kant's critique of Leibniz and aimed to show that any attempt at using formal logic in order to discover truths about the appearances of sensibility is destined to fail. While Kant distinguishes between two faculties, Whitehead puts forward three types of knowledge. First, direct intuitions unspoiled by verbal expression. Second, literary modes of expression and the dialectic deductions which we perform through these modes and third, the purely deductive sciences. It is Whitehead's aim in his discussion of natural laws to argue that an adequate metaphysics of laws must be able to recognise the importance of this first kind of knowledge – the intuitions - and not let the abstractions formed by the second and third drown it out. If the slogan of Kant's amphiboly was: ‘we must not underestimate the importance of intuitions for our metaphysics of experience’. Then the slogan

²³ AI 153

of Whitehead's discussion regarding nature's laws can be: 'we must not underestimate the importance of intuition for our metaphysics of science'.

Whitehead's second form of knowledge – our literary training - has benefited us in that we can now consider the past and the future in terms of decades and centuries but it has blinded us to our immediate past and immediate future – the past of half a second ago or even a tenth of a second ago. It is only through a sensitive training of our philosophical intuitions to this immanent past and future that we can recognise the truth of the doctrine of immanent law and Plato's reality test. Without such intuitions we will always be trapped in the false dilemma between necessity and absolute contingency and induction will be useless. Whitehead's three kinds of knowledge are not three completely heterogeneous faculties, like Kant's sensibility and understanding, they are in constant interaction and our intuitions must affect our construction of categories. As we critique and develop our working hypotheses regarding the laws of nature, we must constantly pay attention to our methods of philosophical enquiry and attempt to ensure that we do not ignore one form of knowledge due to the development and successes of another.

Final Remarks

I want to finish this paper with a discussion of one of the conversations recorded by Lucien Price from September 11th 1945²⁴. This conversation – or dialogue – is particularly interesting because it can be read as a reprise of the discussion of nature's laws found in *Adventures of Ideas* and it shows that Whitehead continued to mull over and develop these ideas over ten years later. The themes outlined in my paper are all found interweaved in this dialogue. Starting from Plato's philosophy Whitehead makes the familiar claim that we should never attempt to systematise or create a final Plato. The very beauty of his dialogues is that they resist such attempts. The conversation is clearly motivated by the immense change which had been apparent in the previous fifty years. Whitehead discusses his education in the 1880s in which he had been taught that Physics was nearing completion. However, by the

²⁴ Price, L (1954) *Dialogues of Alfred North Whitehead*. London: Max Reinhardt Hereafter D

1900s such closure had been demolished. Newtonian physics, he claimed, was done for. Here we are treated to an important insight regarding the impetus behind his thought. This historical example is raised to show that we must consider the era of finality of thought as over. 'I've been fooled once,' Whitehead writes, 'and I'll be damned if I'll be fooled again'. Plato is so important for Whitehead because he symbolises the unlimited possibilities of thought and the unending potentiality of change. If the ancient Greeks were to return today, he speculates, Plato would have been the one man who would not have been absolutely shocked, because he was the one philosopher who was always taking account of the unpredictable. This is why Whitehead refers to himself as a thorough going evolutionist. The conversation is ended by a remarkable comment in which Whitehead asks 'Why talk about "the laws of nature" when what we mean is the characteristic behaviour of phenomena within certain limits at a given stage of development in a given epoch?'²⁵ This is clearly a serious suggestion and Price records an even more forceful repetition of the same point from the 11th November 1947 where Whitehead states that: 'People make the mistake of talking about "natural laws". There are no natural laws. There are only temporal habits of nature.'²⁶ One important claim that Whitehead follows this with is that the laws of nature follow from the discrimination of detail obtained from the particular proportion of our own human standpoint. But the absolute vastness of existence is beyond comprehension. Price records that Whitehead touched his mahogany stand and claimed that inside it 'may be civilisations as complex and diversified in scale as our own; and up there, the heavens with all their vastness, may be only a minute strand of tissue in the body of a being in the scale of which all our universes are as a trifle. Man has only just begun to understand, not this vastness, for we cannot grasp it, but that such vastness exists, and that it throws out all his previous calculations'.²⁷

It is from these final quotes, that we receive the last ingredient necessary to form Whitehead's new synthesis of a doctrine of laws. A doctrine in which the analogy with laws is rejected altogether. Such an analogy not only suggests transcendence, but also eternal obedience and an arbitrary human-

²⁵ D 342

²⁶ D 363

²⁷ *ibid*

centred scale. Like the doctrine of mere description Whitehead's metaphysics is really a theory of lawlessness, yet unlike the doctrine of mere description it is a theory capable of accounting for regularity through an adequate doctrine of internal relations. As a result, Whitehead's synthesis of doctrines would be better off without law in its title at all. Perhaps it would better suit the name: 'the doctrine of thorough going evolutionism'. Such a doctrine would allow that 'our notions of physical dimension are absolutely arbitrary'²⁸. It would allow for development to work in jumps and that our current cosmic epoch must not be considered as the be all and end all of existence, but is rather merely a bubble in infinity. It would be a doctrine that accepts that science is always engaged in metaphysics no matter how unconscious its metaphysical doctrines may be. Such metaphysical enquiry can then never be avoided and that without metaphysical speculation there can be no civilisation. The doctrine would accept that the juridical analogy may have some explanatory power at a certain level of abstraction, but would believe that it is ultimately misleading. Finally, this doctrine would only be a working hypothesis - a hypothesis that would undoubtedly have both successes and failures - it would merely be, and could only be, a bubble in the ongoing process of speculative thought.

²⁸ *ibid*