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IMMANENCE AND DIVINE PERSUASION: WHITEHEAD'S PROVOCATIVE VIEW ON THE LAWS OF NATURE

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1. Introduction

The purpose of this article is to examine the status of the Laws of Nature within the perspective of Whitehead's Process Philosophy. This perspective is particularly interesting because it combines two positions which are rarely linked to one another. These two positions are, respectively, the view that the laws of nature are immanent, and the view that, in spite of such immanence, the laws of nature involve a reference to God. Or, to put it the other way around: the view that the laws of nature involve a reference to God, and the view that, in spite of such reference, the laws of nature are immanent.

This combination is particularly intriguing for, certainly at first sight, these two views seem incompatible. They certainly are hardly ever linked to each other in modern philosophy of nature, or in modern cosmology or theology. Usually, nature is considered independently from God, while a reference to God is linked to the view that the existing laws were created by God who therefore must have wanted them and imposed them. It is the latter point which Whitehead explicitly rejects. He prefers to see the Laws of Nature as immanent, that is, as not imposed by God (see AI 41, 103–118, 130).¹ But this does not keep him from saying that the immanent point of view by itself is inadequate, and needs “some notion of imposed law” (AI 115), nor does it keep him from conceiving God as the ground of all order (PR 108), as that actuality in the world, in virtue of which there is physical “law” (PR 283).

Whitehead's view merits a thorough examination, not merely because the combination he proposes is exceptional, but for the more substantial reason that it is particularly challenging, because it criticizes on the one hand the actual atheistic conception of nature and science, and on the other, a theology which only marginally reflects on the relation between God and nature (*viz.* only in terms of creation). Although he accounts to a large extent for the immanence view of nature, which dominates contemporary discourse, and according to which the lawfulness of nature is considered to be the product of the components of nature itself, he also argues—against the exclusively immanence view—that, precisely if this view is taken seriously, some persuasion is required. And against the current theological view he points out that it must learn to also speak of God beyond the sphere of man and religious feeling (PR 207), and therefore that it must speak of God and nature more than marginally, and that it must do so in different ways. Moreover, he argues that the relationships of God to nature should not be thought of in terms of an imposition

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of divine will, as is commonly done in deistic and theological discourse, but that they should lie beyond the accidents of will (AI 168).

In this article, the persuasion which is required as "some notion of imposed law" will be examined. The question will be asked why it is required, and whether the notion is conceptualized so as to safeguard the characteristics of immanence. More specifically, after a short introductory exposition of Whitehead's philosophy, I intend to address the following question: How does Whitehead reconcile the two notions—the notion of Immanent Law and the notion of Law as somehow imposed by God? What does this mean for our concept of Natural Law, and for our concept of the relationship between the so called Laws and God?

2. A short and global exposition of Whitehead's philosophy

A. The paradigm of organism

Basically, Whitehead is looking for a new system of general ideas in terms of which we can interpret our experiences (see PR 3); this search is the essence of what he calls metaphysics. He is looking for such new ideas because he wants to replace the mechanistic world view which not only was dominant in the 16th and 17th centuries, but which is still governing the common sense view of the world. According to mechanicism with its emphasis on deterministic causality, nature is conceived in terms of permanent "things," which are only externally or accidentally related to each other. Whitehead's main objection to mechanicism is that it is simply incompatible with modern scientific insights. For instance, matter no longer is considered as continuous, one and passive, nor is field theory compatible with the concept of simple location. Moreover, he objects to mechanicism for not allowing the conceptualization of freedom or purposiveness. A world view based on the model of billiard balls can hardly yield concepts such as "freedom" or "feeling." Therefore Whitehead prefers to turn things around. He starts from the human organism with its coming into being and its death, and with properties such as memory, feeling, affection, eros, purposiveness. Using this starting point as a hermeneutic key, he then tries to conceptualize all of reality including non-human and non-living nature. Thus, contrary to the mechanistic paradigm according to which the building blocks of reality are "things" which are primarily static and only externally related to one another, Whitehead proposes to use an organismic paradigm according to which reality consists of interrelated organisms as self-organizing events.

B. Self-organizing events and their aims

According to Whitehead, an elementary event—he speaks of "actual occasion," "actual entity" or sometimes more loosely of "occurrence"—creates *itself* from the world given to it, not unlike a living organism which creates itself from the nourishment it takes. Thus, the expression "given" involves the assimilation or the appropriation of what is foreign. This is what Whitehead means by the term "prehension." The growing-together or synthesizing process (*con-crescence*) of these appropriations or prehensions into a complex unity is the self-creating event. Thus, contrary to the mechanistic view, an event is essentially or internally related to the

antecedent events which are given to it (somewhat in the same way as the act of perception is internally related to the things perceived).

Because events essentially occur, an event cannot possibly be static. It is a process rather than a state; it is becoming rather than being.

This view implies two important points regarding the nature of reality. The first is that reality is ultimately characterized by *ongoingness*, which Whitehead calls *creativity*. The second is that events are possible only if they have a *direction*, or, in Whiteheadian terms, an *aim*. Without direction there can be no process or event at all.

Contrary to what the terms "direction" or "aim" may at first suggest, they do not imply a reference to consciousness. In Whitehead's perspective an aim consists of an internal, usually unconscious focusing upon that possibility which is "the best" for the particular event in question; it is that possibility of synthesis which, if realized, is bound to yield the greatest intensity of experience (PR 27). More specifically, Whitehead sees every "actual occasion" as a process of unification of the many influences that are given and appropriated from the past. But because those many influences are not simply compatible, such unification can occur in several ways: trivially, by weeding out a number of prehensions, or in a more difficult and complex way which results in a synthesis with greater richness of contrast. Again, the "best" possibility is that possibility of synthesis which in realization yields the greatest intensity of experience.

C. The provision of initial aims

In Whitehead's view, a nascent event derives the urge to the best possibility from an atemporal valuation of all possibilities, a kind of optimization function, that distinguishes better from worse solutions. Not unlike a compass, such function gives direction: it provides direction to the nascent entity in question according to the particular situation of that entity. This optimization function which is a *conditio sine qua non* for any occurrence, is characterized by Whitehead as "divine." He conceptualizes this atemporal valuation as an abstract aspect of God, which he calls *the primordial nature of God*. Thus, in Whitehead's metaphysics, this primordial nature represents God seen merely as envisagement and valuation of possibilities, without knowledge of the actual world, without affection etc. This abstract nature of God has its counterpart in God's fully actual nature, which is God in his concrete plenitude, called *the consequent nature of God*. God, as concrete, prehends the actual world—which explains the expression "consequent"—and, as such, God may be said to have knowledge and affection (PR 345). Moreover, God as fully actual has a kind of temporality, not in the sense of coming to be and passing away, but as enduring growth.² God's ever novel prehensions of the temporal world remain everlastingly present in God and are woven upon God's primordial concepts (PR 345). In this article, however, only the abstract side of God, the divine primordial nature, will be discussed.

Thus, *in a certain sense*, the divine primordial nature, as conceived by Whitehead, gives direction to the plurality of worldly processes, and thereby is the source of both order and novelty. But it would be utterly wrong to infer from this that the causality involved in God's primordial nature would render worldly

causality superfluous. On the contrary, Whitehead insists that the aim which is provided by God is intimately related to the particular worldly situation which is the origin (and thus "the cause") of the nascent event in question. Whitehead typifies the aim which the primordial nature provides as "the best for that impasse" (PR 244). It makes the new event feel what should be its best shot at unifying the data of its particular past. This will be examined in more detail below.

In Whitehead's view, God gives direction to the worldly processes by giving them an aim which functions as an attractive possibility. God lures, says Whitehead echoing Plato, but it is up to the worldly processes themselves to realize that possibility—or not. In Whitehead's words: "Thus the initial stage of the aim is rooted in the nature of God, and its completion depends on the self-causation of the subject-superject [the temporal concrescing event]" (PR 244).

In sum, Whitehead's perspective allows for three causal influences with respect to an occurrence, *viz.* *the past*, which conditions what is possible, *the divine primordial nature* which, in relation to that actual past, limits what is desirable and provides the urge towards the realization of the most desirable possibility and thereby constitutes the new occurrence as occurrence, and, finally, *the new occurrence itself*, which freely realizes itself both in relation to what is possible and to what is desired.

Below, we shall examine this conceptualization in much more detail. But first, we must deal with Whitehead's view of the so called "natural laws," and especially with his preference, albeit tempered by some criticism, for the doctrine of the laws as immanent.

3. Whitehead's view of the nature of the Laws of Nature and their requirements

A discussion of God within the context of a reflection on the lawfulness of nature (as is here the case) seems to imply the choice of a specific view of the laws of nature, which is the view of "the law as imposed." For involving God in the story seems to entail that something is "imposed" from the outside, something which apparently cannot be explained from within nature. Though we will see that, according to Whitehead, there definitely is a relationship between God and the laws of nature, we will also establish that he forcefully opposes and rejects the view that the laws of nature are imposed. But first we will scrutinize Whitehead's view of the nature of the laws of nature, and of the criteria they should meet.

A. An examination of different doctrines concerning the Laws of Nature

In Chapter VII on "Laws of Nature" of his *Adventures of Ideas*, Whitehead analyzes the various meanings that are given to the concept of "law of nature" (AI 103–118). He distinguishes a number of doctrines which he calls, respectively, the doctrine of the law as immanent, the doctrine of the law as imposed, the doctrine of the law as mere description, and lastly the doctrine of the law as conventional interpretation. In the subsequent chapter entitled "Cosmologies," he describes the history of those various doctrines (AI 119–139). His discussion of the last two, modern conceptions is relatively brief. He points out that the attractive aspect of the positivist doctrine

concerning law, namely the doctrine of Law as Mere Description, which since the middle of the nineteenth century has dominated our perspective, is its avoidance of the metaphysical problems which arise from both the doctrine of Imposition and the doctrine of Immanence. The doctrine simply holds the view that "[t]he laws of nature are nothing else than the observed identities of pattern persisting throughout the series of comparative observations" (AI 115). A law of nature, thus considered, simply concerns the things observed and nothing else. As Newton proudly proclaimed, he neither engaged in speculation, nor did he offer an explanation. But Whitehead points out that, regardless of the methodological fruitfulness of this doctrine, this approach fails in two different respects. Though it seems to stay clear of metaphysics, this is not the case at all. For all sorts of metaphysical assumptions are implicitly at work, such as for instance the assumption regarding the permanence of the nature and matter of the instruments used, or the assumption that the statistical relationships which are discovered always remain the same. The fact that predictions are unhesitatingly derived from the observation of the past, is based on metaphysical assumptions regarding the permanence of the statistical form. Here, mathematics does nothing more than telling us the consequences of the belief in such permanence (AI 126). His second objection is that, in practice, scientists are not satisfied with mere description. It is inherent to science that it seeks to explain, and therefore that it engages in speculation.

The latest approach to laws of nature, the doctrine of Law as Conventional Interpretation, is likely to better meet this requirement. In the 20th century, for instance, mathematics has made great advances due to a speculative interest in types of order, which at first was not in any way related to factual states of affairs. But surprisingly, the mathematical laws that had been discovered in this manner are gradually finding their application. To the conventionalist, this shows "that Nature is patient of interpretation in terms of Laws which happen to interest us" (AI 136). But Whitehead considers this to be a misconception. Of course, as long as we are ignorant of a certain type of regularity, we will fail to observe such regularities. And indeed, the (mathematical) discovery of such regularities yields the possibility of also discovering them in nature. However, this does not imply that the relationship thus discovered is in itself dependent upon that discovery or preference:

There is thus a certain amount of convention as to the emergence into human consciousness of sorts of Laws of Nature. The order of emergence depends upon the abstract sciences which civilized mankind have in fact chosen to develop. But such "convention" should not be twisted to mean that any facts of nature can be interpreted as illustrating any laws that we like to assign. (AI 138)

Evidently, Whitehead considers the doctrine of Imposed Law and the doctrine of Immanent Law to be by far the two most interesting candidates. Though he does not explicitly make a choice in the above mentioned chapter of *Adventures of Ideas*, his choice may be derived from other passages (for instance, AI 41, 130), as well as from the conclusions which he draws from the immanence conception (AI 112–113—see below), all of which correspond to this metaphysical perspective. The choice which he argues for, is that he rejects the imposition view in favor of the

immanence interpretation which, however, he considers viable only in combination with some element of the imposition view (AI 115). This seems like an impossible option, for the immanence view seems, at least *prima facie* to exclude the imposition view.

The doctrine of the Law as Immanent entails the view that the order of nature is the expression of the characters of the components of nature (AI 111–112). The main characteristic of natural law seen as immanent is that the “relata” (the things related) and the relation between the relata are *conditioned by each other*: the relata are conditioned by the relationship, and the relationship is conditioned by the relata. As Whitehead puts it: “When we understand the essences of these things, we thereby know their mutual relations to each other” (AI 112; see PR 94). And in turn this implies that “The laws are the outcome of the character of the behaving things: they are the ‘communal customs’” (AI 41). Some of the more detailed characteristics of this option will presently be discussed. One of the important consequences of the immanence view, according to Whitehead, is that it presupposes the essential interdependence of things; in other words, that it implies a doctrine of internal relations (AI 112, 113).

The picture changes completely if the doctrine of the Law as Imposed should be accepted. For in that case the things themselves say nothing of their relations, nor do the lawful relations say anything about the things thus related. Thus, the imposition view implies that “...you cannot discover the natures of the relata by any study of the Laws of their relations. Nor, conversely, can you discover the laws by inspection of the natures” (AI 113). For according to the doctrine of Imposition the relations are imposed, and therefore external. This view which Whitehead rejects would need a certain form of deism, while in turn deism would entail such view of the laws of nature. “[T]he whole doctrine of Imposition is without interest apart from the correlative doctrine of a transcendent imposing Deity” (AI 113; see also 122).

None of the four doctrines meet with Whitehead’s complete approval, but the doctrine of Immanent Law is the one to which he objects the least. This may become evident in what follows.

B. The manifestation of the doctrine of Immanence in Whitehead’s philosophy

How is the immanence view of the law of nature expressed in Whitehead’s philosophy? It is apparently expressed most directly in his discussion of “societies,” which are the special nexus of actual entities. A nexus in general is a set of actual entities in the unity of the relatedness constituted by their prehensions of each other. A society is special in the sense that the actual entities of which it consists share a common element of form by reason of genetic derivation from other members of that same society, and this element is prehended in a manner such as to promote its reproduction in a subsequent prehension. It is in virtue of the latter characteristic that a society is self-sustaining (PR 34, 89). Whitehead further elaborates this in the chapter on “The Order of Nature” in *Process and Reality* (PR 83–109), a chapter of particular importance for the topic which concerns us here. A society requires an environment which “at least be permissive of the self-sustenance of the society” (PR 90). This means that the environment, together with the society in question,

must form in its turn again a society featuring a characteristic more general than the one previously mentioned. As Whitehead puts it:

In reference to any given society the world of actual entities is to be conceived as forming a background in layers of social order, the defining characteristics becoming wider and more general as we widen the background. (PR 90)

To put it less abstractly, the societies (and the societies of societies) best known to us are, in increasing order of magnitude: electromagnetic waves, electrons, protons, molecules, inorganic bodies, living cells, vegetable and animal bodies (PR 98). They all belong to “the society of our present cosmic epoch,” which Whitehead calls the “electromagnetic society.” But he distinguishes two higher levels which are, respectively, the “geometrical society” and the “society of extensive connection” (PR 96–98), without suggesting that the latter level should be the highest or metaphysical level. We are not here concerned with the difficult technical details of all this, but with the fact that each society within each level sustains itself through its members, thus insuring that its order is sustained and thereby has the character of “lawfulness”:

The causal laws which dominate a social environment are the product of the defining characteristic of that society. But a society is efficient only through its individual members. Thus in a society, the members can only exist by reason of the laws which dominate the society, and the laws only come into being by reason of the analogous character of the members of the society. (PR 91)

Thus lawfulness is what is produced by the society itself, because it is in and through the society that its own order is sustained. Why should this be so? Because “order” is directly related to “intensity” (and, should this no longer be the case, should order become superficial, society disintegrates). Whitehead points out that, in reference to the relation between order and intensity, the greater the order, the greater will be the variety of different components that can be positively prehended in a satisfaction of an actual entity (which thereby forms a more complex synthesis), and the more intense the experience of that satisfaction. Because less order entails that the various elements (that are given from the past) are more easily rejected as being non-compatible, it is detrimental to intensity (PR 83, 88, 101). Thus, to the question why order is reproduced and sustains itself, the (first) answer is: “because it yields the greatest intensity” (PR 128).

Clearly, lawfulness is considered here to be immanent to nature. This immanence interpretation makes it possible for scientists to *seek explanations* rather than mere descriptions of their observations, and it justifies a *limited faith in induction* (AI 112–113). Moreover, the doctrine of natural laws as immanent allows for a *statistical* conception of law; that is to say, it allows for particular deviations from the “law,” a circumstance which corresponds to modern scientific conceptions (PR 92). Such variability of laws would be hardly thinkable if laws were imposed. Furthermore, the doctrine of laws as immanent leaves room for some *change in the laws themselves*. Laws are not necessarily eternally the same. For, in virtue of genetic relations of prehension, they are a social product, that is to say, they are only

habits: "This doctrine, that order is a social product, appears in modern science as the statistical theory of the laws of nature, and in the emphasis on genetic relation" (PR 92). Thus, since the laws of nature in this way depend upon the individual character of the things constituting nature, it follows that, if these things change, the laws will change correspondingly (AI 41, 112–113; MT 95). Some passages taken from Whitehead express this explicitly: "People make the mistake of talking about 'natural laws'. There *are* no natural laws. There are only temporary habits of nature";³ and: "The notion of the unqualified stability of particular laws of nature and of particular moral codes is a primary illusion which has vitiated much philosophy" (MT 13).

The reason why such shifts can take place is related to the fact that even on the anorganic level, there is some sort of freedom of actual entities. Though on that level, the freedom of decision may be negligible in terms of our usual and scientific observation, the "decisions" of an actual entity are never entirely reducible to external influences (PR 47–48). Thus, Whitehead can say:

[T]here is disorder in the sense that the laws are not perfectly obeyed, and that the reproduction is mingled with instances of failure. There is accordingly a gradual transition to new types of order, supervening upon a gradual rise into dominance on the part of the present natural laws. (PR 91)

and again:

Thus a system of "laws" determining reproduction in some portion of the universe gradually rises into dominance; it has its stage of endurance, and passes out of existence with the decay of the society from which it emanates. (PR 91)

All this implies that the actually existing laws of nature are the result of a complex and contingent play of forces, that they are therefore *arbitrary*, and that this applies not only to the laws of electromagnetism but also to the four-dimensionality of the spatio-temporal continuum, and even—regardless of the exact number of dimensions—to the dimensionality as such of the continuum as well as to its character of measurability (PR 91). Thus, nothing of any of this has the status of a "metaphysical truth" (PR 96–98, MT 155), for everything is a contingent product of the "marginally free" decisions of each of the innumerable actual entities.

In short, Whitehead provides a discussion of the way in which the lawfulness of nature, which is related to the self-sustenance of the order of a society, may be understood as immanent: the society sustains itself, albeit with some degree of variation and some gradual change, because, to the extent that its order benefits the intensity of experience, it also favors its reproduction. And Whitehead shows how such immanence conforms to the statistical nature of fundamental laws, and how this implies that laws are not inherently immutable.

In the same chapter on "The Order of Nature" Whitehead attacks with uncharacteristic vehemence the view that the laws of nature are imposed, and more specifically, the view that they are imposed by some omnipotent God, a view which is illustrated in an exemplary way in Newton's *Scholium*. In one of his comments he

writes: "The concept in Newton's mind is that of a fully articulated system requiring a definite supernatural origin with that articulation," and he goes on to say:

This is the form of the cosmological argument, now generally abandoned as invalid; because our notion of causation concerns the relations of states of things within the actual world, and can only be illegitimately extended to a transcendent derivation. (PR 93)

Here Whitehead voices in his own words the world view which has come to dominate the prevailing secularized context and which is characterized by a belief in "autonomy" or "immanent lawfulness" and which leaves no place for a reference to a transcendent God. Moreover, Whitehead gives reasons for this contemporary rejection of a transcendent reduction of lawfulness. This rejection, in his view, is not merely some adaptation to a fashionable idea, but is based on the observation that

[i]t is not possible to extract from the *Scholium*...either a theism, or an atheism, or an epistemology, which can survive a comparison with the facts. This is the inescapable conclusion to be inferred from Hume's *Dialogues Concerning Natural Religion*. Similarly, biology is reduced to a mystery; and finally physics itself has now reached a stage of experimental knowledge inexplicable in terms of the categories of the *Scholium*. (PR 94)

Thus, according to Whitehead, whether it be considered as a conception of God, or as an epistemology, or from the perspective of biology and physics, the imposition view fails to withstand the test of criticism, though he observes, not without a touch of irony, that it has been fruitful in as much as it has strongly furthered the unfailing search for lawfulness (AI 114–115). Both the conception of the Universe as subject to fixed, eternal laws, regulating all behavior, and the conception of the Laws of Nature as the expression of a divine will, are simply abandoned by Whitehead.

Does all this mean that he unreservedly embraces the doctrine of Immanent Law? No, for as much as Whitehead favors this view over its three alternatives, he thinks that it does not satisfy the demands of a complete theory. If it is to be complete, it requires "some notion of imposed law" (AI 115). In the next section we shall examine why Whitehead thinks so, and how he elaborates his view.

C. The incompleteness of the doctrine of Immanent Law

There are several reasons why Whitehead considers the conception of purely immanent laws to be unintelligible, and why he thinks something else or more is required. Let me briefly mention four of his principal considerations.⁴

There is no more reason for a single nascent event to synthesize its past in a particular way than there should be a reason for a bag of little mosaic stones to by itself determine which is the most beautiful mosaic picture that should be made from it. In other words, occurrences or events require a principle of concretion, that is, of limitation (SMW 177–178; PR 164, 244).

Secondly, even if there should be hardly any choice at all, and if therefore the existing state of affairs were to perpetuate itself, every new event would still need to

occur. And this can only happen by virtue of an urge to realize itself. Therefore, persuasion is required for the sake of endurance (AI 115).

Moreover, we see "recurrences" in the physical world: abstract things repeating themselves. For example: patterns of interaction repeat themselves and we call these recurrences "laws of nature." Thus, there must be "something" which not only concretizes and lures, but which in fact is also stable or immutable, something in virtue of which there can be physical "law" (PR 283; AI 115).

Lastly, though disorder may be intelligible by virtue of the formidable quantity of events, there nevertheless is also a partial order which is intelligible only if those different purposive strivings somehow display a unity (PR 32, 88).

All but the first of these four reasons pointing to the incompleteness of the notion of purely immanent laws, and their corresponding functions which Whitehead imputes to God—concretion, origin of desire, stability, and order—are expressed in the following passage taken from the chapter "Laws of Nature" in Whitehead's *Adventures of Ideas*:

Lastly apart from some notion of imposed Law, the doctrine of immanence provides absolutely no reason why the universe should not be steadily relapsing into lawless chaos. In fact, the Universe, as understood in accordance with the doctrine of Immanence, should exhibit itself as including a stable actuality whose mutual implication with the remainder of things secures an inevitable trend towards order. The Platonic "persuasion" is required. (AI 115)

And clearly, the expression "a stable actuality" should be taken as referring to what in *Process and Reality* is called "God's primordial nature."

Our question now is this: how is Whitehead's preference for the doctrine of the Law as Immanent (that is, as dependent on the nature of the relata itself, and therefore statistical, changeable, and not imposed by divine will) compatible with his view that, as we have seen above, the occurrences, endurances, recurrences and order need the primordial nature of God?

In order to be able to discuss the question of compatibility, we first must examine Whitehead's concept of God's Primordial Nature in some further detail, and see how he conceptualizes the above mentioned "required persuasion."

D. The concept of the Primordial Nature of God, and how this Nature can influence the worldly processes

In Whitehead's metaphysics the primordial nature of God is the complete valuation of all pure potentialities (PR 31). This divine valuation is dependent upon God's own subjective aim which is the evocation of intensities in the creative advance of the world (PR 105). However, this valuation of potentialities is never absolute in the sense that, for instance, red is absolutely good, or green would be absolutely bad; but it is a valuation of potentialities in relation to every possible initial state of a new event containing many data to be synthesized.

One must remember that the actual entity is seen by Whitehead as the process of unification of the many data given to it. It is, let us say, the self-creation of a mosaic picture out of many mosaic stones (or to use an illustration with less

substantivistic associations: the composition of a piece of music out of a certain set of tones). Therefore the following may illustrate the above described role of the primordial nature. Suppose one has a particular supply of many mosaic stones. In that particular case, one might consider the best possibility for synthesis to be, for instance: use the green stones to make a foreground figure, and all the others for the background. But for a different supply, the best possibility may be, for instance: use the red and purple stones for the foreground, and the green ones for the background. Similarly, a valuation is thinkable of all potentialities (the "mosaic stones") related to every possible supply of potentialities.

This illustration may be presented somewhat more formally in terms of the mathematical concept of a function F which attaches a specific y to every possible x . In this x - y -image F signifies—obviously *mutatis mutandis*—God's primordial nature, which is the unchanging valuative ordering of all potentialities in respect of each other: if x_1 then y_1 , if x_2 then y_2 etc. The x signifies the variable, possible worldly initial situation being composed of many data to be synthesized, and the y stands for the "best possibility for synthesis of these data" (the initial aim). So, mathematically expressed, the F is to be seen as an optimization function. It is important to emphasize that both x and y stand for possibilities: respectively, the possible initial situation containing many data, and the best possibility for synthesis of these data. Thus, F ("God's primordial nature"), in a valuative optimizing way, relates potentialities to each other. That is why Whitehead speaks of an ordering of potentialities according to their "relative relevance" (PR 344). It should be noted that the F itself is atemporal and unchanging (Whitehead calls this " F " "valuation"), but the y , the initial aim, is temporal and changing in relation to, and dependency on the x (this temporal y is called "evaluation"). Whitehead expresses this as follows: "But Evaluation [the y] always presupposes abstraction from the sheer immediacy of fact [the x]: It involves reference to Valuation [the F]" (Imm IV).

This mathematical model is helpful in elucidating how God, as the complete relative valuation of all potentialities, can have influence on the worldly processes: given a certain initial state (a certain x), God's ordering (the function F) delivers the best combinatory possibility for that case (a particular y). And the nascent event feels this aim in prehending God's primordial nature. Or, as Whitehead also says: the event has this purposive awareness by sharing in the nature of the immanent God (see AI 130). Please note that this y is not the outcome of the new event, but only its starting point, its initial aim "from which its self-causation starts" (PR 244).

4. The compatibility question: Natural "Laws" as highly immanent, yet depending on the divine Primordial Nature?

A. The compatibility question with regard to processes and their aims

At this point, a number of things can or must be emphasized. In doing this, we address the question of the compatibility—between God's influence and the notion of immanence—on the level of the elementary event and its aim.

First, it is very important to notice the difference in the degree of influence between God's influence and the influence of the remainder of the actual world (PR 19). In this respect I continue using the mathematical model to illustrate the

relevance of the distinction. If the reciprocal ordering of y -values in respect of x -values is fixed in, for instance the functional prescription $y = x^2 + 2x$, then x -value 1 yields y -value 3, while, for instance, x -value 4 yields y -value 24. To the question why in a given case the value of y is 24 (rather than, for instance, 3), two answers may be given. One answer is: "Because in this particular case the value of x was 4." The other possible answer is: "Because the form of the function (the abstract rule of connection between x -values and y -values) is the way it is." These two reasons are of a different level. If the form of the function is taken for granted, then the particular starting-point (the particular value of x) will be the reason for the result. But the form of the function itself is a reason of a higher level. In this way, *mutatis mutandis*, Whitehead's remark can be understood as saying that "the reasons for things are...to be found...in the nature of God for reasons of the highest absolute-ness, and in the nature of definite temporal entities for reasons which refer to a particular environment" (PR 19).

From Whitehead's point of view, the question why an event pursues a certain end, can equally well be answered in terms of its past, as in terms of God's atemporal valuation. But for the sake of completeness, one must refer to both.

From this, the following other point should be emphasized. It would be nonsense to say that it is the will of F that "24" be realized, or that "3" be realized. Only if the initial state is "4," then the equation yields "24" for y , as the best possibility to realize. This means: though God's primordial nature (as F) constitutes what is felt to be the best possibility, there is no such thing as an absolute "best possibility" that is willed by God (F), for the aim (y) is always related to the specific situation (x). God's will, if there is any meaning to the expression within this context, is relative: God's primordial nature lures towards whatever it is that yields the greatest intensity of experience for a specific worldly entity in its given situation. The aim provided by God is therefore related to the relevant situation.

Does this imply that, in order to be able to function in this way, God must know each particular event in advance? No, not at all. A comparison of the primordial nature with a computer game (for example, a chess game) may elucidate this. The game program is a complex but unchangeable algorithm (like the above mentioned F) which makes possible an infinite variety of concrete changeable courses of the game. It is only because of the player's choices that a specific situation emerges of which the computer game as such had no inkling, but to which it adequately reacts to, as "the best possible option." The game is a possibility structure: for each possible situation, the game provides the best option. Consequently, in spite of the constancy of the program, the course of the game is not at all fixed beforehand, nor does it need to be foreknown by the program. So too, *mutatis mutandis*, God's abstract side, yields the most favorable solution for each contingent situation, without in any way being subject to change, and without needing any concrete foreknowledge.

Moreover, the aim which is desired by virtue of God's lure is a *possibility* and it is only by virtue of the conrescent event itself that this possibility can more or less be realized. Therefore: the result is not predetermined, not even for God. In other words, what the future initial state of the next novel event will be is uncertain. But the aim this future event will obtain from God's primordial nature will in its turn suit the novel situation. The direction given by the primordial nature of God is

not an orientation toward a pre-established end, but it is always the offer of a "best" possibility which suits the situation. Thus, the direction, the aim is always linked to the concrete situation without in any way being fixed.

Thus, as a half-way conclusion it may be said that the final causation which Whitehead incorporates in his perspective, far from being a predetermined and externally established aim—the bugbear of all antiteleologists—concerns the influence issuing from the awareness of whatever can yield the greatest intensity of experience in the given situation, an awareness which originates by "sharing in the nature of the immanent God" (AI 130), as Whitehead says.

Of course, a mathematical framework (if x , then y) allows for the relationship between two variables to be external. In other words, according to the story so far, the link between "situation" and "best possibility" could still be based upon an accidental act of the will of God (see AI 168). But this is definitely contrary to Whitehead's conception according to which there is an internal connection between a possible initial situation and the corresponding aim. For the aim envisaged by God concerns the maximum intensive synthesis which can be made from the given components of the initial situation (PR 249, 277–278). The initial aim is therefore inherently linked to the specific nature of the given materials within the initial situation (PR 278) (which apart from environmental data also and prominently includes "the event itself a fraction of a second earlier"). And that is precisely the hallmark of the radical conception of immanence.

At this point we can say that, in spite of the involvement of the divine primordial nature, this Whiteheadian vision is not a deistic view of imposition, for if that were the case, the nature of the relation between things would definitely depend upon God's transcendent and imposed will. But neither is it a pure immanence view, since the aim, which is the synthesis pursued, cannot entirely be reduced to whatever the given components bring about. For according to Whitehead's view, God's envisagement adds something that is necessary. In the first place it adds that the aim envisaged by God's primordial nature may contain aspects of novelty in respect of the given (we have neglected that aspect so far). But there is a second element which God adds. The above made comparison between the working of God's primordial nature and the working of an optimization function makes the "extra" clear. For, though an optimization function does not point to a fixed or predetermined outcome, it imports a criterion in terms of which every situation is evaluated (for example, the criterion of maximum gain, or of minimum energy consumption). A criterion is not a set-point, but it gives direction in a "second order" way, by providing the means to distinguish in every possible situation the best possibility.⁵ Similarly, though God's primordial nature does not impose some specific course of nature, it does enable the very course of nature by importing a specific criterion (according to Whitehead's view, the aesthetic criterion of maximum intensity of experience, PR 27, 105). As Whitehead puts it: "The actual world is the outcome of the aesthetic order, and the aesthetic order is derived from the immanence of God" (RM 101). By thus conceptualizing the aim which a nascent event obtains from God's primordial nature as that possible way in which, *out of the given relata*, a synthesis of maximum intensity can come about, Whitehead remains very close to an immanence view. For his view safeguards a definite internal interdependence between the envisaged relationship and the *relata*, and *vice versa* (see AI 41).

B. The regularity of natural processes as anchored in the divine primordial nature

Though Whitehead insists that God as consequent and actual is *not* immutable but ever "growing," he does maintain that God's primordial nature is immutable. But this immutability of God's primordial nature is dynamical in its effects, as the fixed axle of a wheel is the condition of the wheel's ability to turn (see RM preface). The immutability of the primordial nature enables its dynamical effects to have a pattern. In other words, by its stable ordering of possibilities, God's primordial nature provides the possibility of a certain natural "lawfulness."

However, lawfulness does not uniquely depend upon God's stability, for it is just as much "the outcome of the character of the behaving things" (AI 41). This may be understood as follows.

As we have already seen, whatever in a given situation is the best possibility of synthesis is to a large extent dependent upon the characters of the components of the given situation itself. According to this principle, which was illustrated by the analogy of the mosaic, there is an *internal connection* between the characters of the real things which jointly compose the initial situation and the aim, mediated by God, as the best possibility of synthesis of those components. Now, precisely this internal connection makes intelligible that similar situations are often linked to similar best possibilities of synthesis (see AI 112). Here we have the *immanent* reason for the 'law'fulness or regularity in nature. Natural 'law'fulness is therefore, even with due regard to the indispensable role of the divine primordial valuation, "the outcome of the character of the behaving things" (AI 41). And this is precisely the pre-eminent characteristic of immanence.

It should also be noted that this 'law'fulness is always a *statistical 'law'fulness*, because there is no such thing as two identical initial situations, and, more importantly, because each event has its own, albeit often marginal, freedom.

C. The compatibility question with regard to natural "laws"

We already discussed the compatibility between God's influence and the notion of immanence in the case of particular events and their aims or directions. Now we shall address the question of compatibility on the level of natural laws.

As may be expected in view of what we have seen with regard to particular events and their aims, the statistical 'law'fulness which is made possible by virtue of the immutable functionality of God's primordial nature, is not in any direct sense the expression of God's will, nor does it have a predetermined or fixed end.

Furthermore, according to Whitehead's perspective, natural laws are not immutable. For natural lawfulness entails that the relations between the relata remain statistically identical. Or to put it in Whitehead's own words:

Thus, according as there are common elements in their various characters, there will necessarily be corresponding identities in their mutual relations. In other words: some partial identity of pattern in the various characters of natural things issues in some partial identity of pattern in the mutual relations of those things. (AI 112)

This, however, in no way implies that the relata themselves could not become other than they are. And as the nature of the relata changes so too will the "best" relationships change accordingly—again mediated by the divine primordial nature. Thus, God's being an optimization function and as such being the ground of natural lawfulness in no way affects the characteristics of immanence.

5. Conclusion

According to Whitehead, God is that actuality in the world in virtue of which there is purposiveness and natural lawfulness. Yet, this does not imply a straightforward evolution toward a predestinated aim, nor does it imply that the existing laws of nature as such are in any way willed or imposed by God. This view of Whitehead is pretty unique. Most theories which allow for a divine influence on nature, also state that the laws of nature are imposed by God. This can be seen in both old and new forms of deism, but surprisingly enough also in a thinker as Charles Hartshorne, who, notwithstanding his close relationship to Whitehead, writes, for instance: "[O]ne of the chief merits of a theistic philosophy [is], that it can explain the outlines of the world-order, the laws of nature, as *divine decrees*."⁶ Again: "God as orderer of the world, the type of order differing in diverse cosmic epochs, *determines the laws* which, however, are not classical deterministic laws but are statistical, or somehow allow for change and probability."⁷ After all that was said, the important difference between this view and Whitehead's conception should be clear.

All in all, Whitehead proposes a not altogether easy, but nevertheless very fascinating philosophical notion of natural law as immanent, spiced with "some notion of imposed law." I hope I have shown how this reference to "imposition" may be reconciled with the notion of immanence: in spite of God's mediation, natural "laws" are not in any sense a direct expression of God's will; and there is an internal connection between relation and relata (though there is no question of complete reducibility), and thus the characteristics of immanence such as variability and the statistical character of natural "laws" are not in any way affected. Indeed, by giving the possibility to distinguish better from worse solutions, God's primordial nature is the *conditio sine qua non* for the possibility of immanent 'law'fulness.

What have we gained? Whitehead rejects the view that natural laws are imposed, which is a view according to which everything has its ultimate reason in a purely accidental will of God. Therefore he expresses a preference for immanent lawfulness. But because he also sees that a view of utter immanence would fail to provide a sufficient reason for those laws, he concludes that "the Universe should exhibit itself...as including a stable actuality whose mutual implication with the remainder of things secures an inevitable trend towards order. The Platonic 'persuasion' is required" (AI 115).

The conclusion here may be that the manner in which such Platonic persuasion is set forth by Whitehead leaves all the characteristics of immanent lawfulness intact, *and* makes them intelligible. And that, I would suggest, is the gain.

Notes.

1. Abbreviations for Whitehead's works are as follows: AI, *Adventures of Ideas* (New York: Free Press, 1967); Imm, "Immortality" in *The Philosophy of Alfred North Whitehead*, ed. Paul A. Schilpp (New York: Tudor, 1951), pp. 682–700; MT, *Modes of Thought* (New York: Free Press, 1968); PR, *Process and Reality*, corrected edition, eds. David Ray Griffin and Donald W. Sherburne (New York: Free Press, 1978); RM, *Religion in the Making* (New York: Meridian, 1960); SMW, *Science and the Modern World* (New York: Free Press, 1967).

2. See A. H. Johnson, "Some Conversations with Whitehead Concerning God and Creativity," in *Explorations in Whitehead's Philosophy*, eds. L. S. Ford and G. L. Kline (New York: Fordham University Press, 1983), pp. 3–13, 7.

3. These are Whitehead's words as recorded by Lucien Price in *Dialogues of Alfred North Whitehead. As Recorded by Lucien Price* (Boston: Little, Brown and Co, 1954), p. 367.

4. For a more thorough discussion of these considerations, see Palmyre M. F. Oomen, *Doet God ertoe? Een interpretatie van Whitehead als bijdrage aan een theologie van Gods handelen (Does God Matter? An Interpretation of Whitehead's Philosophy as a Contribution to a Theology of God's Agency)* (Kampen: Kok, 1998), pp. 419–424. An English translation will be published as *Whitehead's Philosophy and a Theology of God's Agency* (Leuven: Peeters, 2002).

5. See Palmyre M. F. Oomen, "Divine 'Second Order' Design and Natural Self-Organization," in *Studies in Science and Theology*, vol. 8, ed. N. H. Gregersen et al. (Aarhus: University of Aarhus, 2001).

6. Charles Hartshorne, *Creative Synthesis and Philosophical Method* (La Salle, Ill.: Open Court, 1970), p. 125 (my italics).

7. Charles Hartshorne, "Ford on Whitehead's and My Philosophy," in *The Philosophy of Charles Hartshorne*, ed. Lewis E. Hahn (La Salle, Ill.: Open Court, 1991), pp. 640–656, 646 (my italics).