Gottfried Wilhelm Leibniz
(1646-1716)

THE MONADIC HARMONY
TIME IN THE PHILOSOPHY OF LEIBNIZ

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In this paper, I want to emphasize the important stance of the concept of time as the central key to a deeper insight in the philosophy of Leibniz. I further want to stress the fundamental rôle of the idea of a pre-established harmony, as well as the perennial relevance of his entire philosophy as a source of inspiration in various areas.

But why Leibniz? Because he is one of the least known and most frequently misunderstood, but at the same time one of the most inspiring and fascinating figures in the history of philosophy. In order not to transgress the natural limits of the size of a paper, I intend to confine my discussion to the ideas of time and harmony in Leibniz. My interpretation will underscore analytical precision rather than historical accuracy, and my presentation will in certain respects more resemble a conceptual reconstruction. However, I hope to remain faithful to the spirit of this multigenius and his philosophy.

The fact that Leibniz himself was fond of characterizing his own philosophy as the *System of the Pre-Established Harmony* stresses the importance he ascribed to this idea. Furthermore, Leibniz's preferential illustration in explaining this harmony contains an explicit reference to time, since it compares the harmony to the acausal synchronicity of a set of similar clocks perpetually ticking in unison simply because they are perfectly constructed from the outset. Understanding this illustration very literally, my intention is to elaborate on the range and significance of this idea of synchronicity, and harmony, in so far as it applies to such widely divergent areas as α) *logic*, β) *physics*, and γ) *ethics*. I am convinced that this time-honoured *Stoic triad* provides the ideal point of departure for a penetrating comprehension of the structure of the metaphysics of Leibniz.

First, I want to give a short review of his life. In contrast to other child wonders, the so-called child prodigy Gottfried Wilhelm Leibniz (1646-1716) in fact lived up to the expectations; few are more deserving than he to be called a "universal genius".

He made important contributions to such diverse disciplines as history, theology, jurisprudence, philosophy, mathematics, physics, and logic. Shortly after Newton he, independently, invented the differential and integral calculi and computed the number π. Under the name of *analysis situs*, he established the topology of modern mathematics. In contrast to Newton, who advocated the abstract ideas of an absolute, mathematical, time and space, Leibniz insisted on the relational character of time and space.

He was the first to define a concept of physical energy and the first to suggest something like a principle of the conservation of energy. With respect to modal logic, he was the most important intermediary between the mediaeval notions and those of our own era, and he proposed a new semantics based on the idea of possible worlds. He administered mines, established scientific academies, corresponded with scholars all over Europe (15.ooo letters!), and gave advice to Louis XIV and Peter the Great.

In what follows, I will offer a brief sketch of the Leibnizian system of philosophy. Initially, this has to be expressed in theologically coloured terms, a circumstance that may be ignored if one prefers to discuss the philosophical problems separately.

It is natural to begin with the *Idea of God*. According to the Christian tradition, to which Leibniz adhered, God is perfect oneness: all-mighty, all-knowing and all-loving. Inasmuch as it is impossible to think the divine essence to be separate from existence, "he" exists with necessity and, as time is not in God, this necessity is atemporal or eternal. But does God "exist"? His use of 'existence' as a predicate was criticized by Kant.

Now, the *omnipotence* of God is demonstrated in his power to create a world resembling himself, but not perfect in the same elevated way. Further, God's *omniscience* manifests itself as the ability to survey and comprehend an infinity of possible worlds, and even to estimate their relative perfection according to their eternally existing notions. Finally, the infinite *benevolence* of God expresses itself as the will to create and realize the best of all possible worlds, which is the world subject to the best of all possible laws, viz., those laws that in the simplest way can put a confused manifold into supreme order and at the same time further a free progress towards ever increasing perfection.

From the beginning, Leibniz found himself in opposition to the most prominent of his predecessors, namely: Hobbes, Descartes, and Spinoza. With respect to Spinoza, Leibniz admitted that a substance exists by itself and is explainable only in terms of itself. However, he found it necessary to reinterpret the Spinozean definition in such a way that it is absolutely applicable exclusively to the unique and supreme substance, God, while it is relatively applicable to all other substances. According to Leibniz, an infinity of substances, called monads, are possible; but of these only one is fully perfect: God. He agreed with Spinoza that if more than one uniquely perfect monad did in fact exist, they would mutually limit each other's perfection and thus be imperfect.

God as creator, eternal and uncreated, is the originator of all the created monads. In contrast to the perfect being which exists *necessarily*, all the imperfect monads exist *contingently*, i.e., if they do exist. Though all internally *consistent* monads are possible, not all monads are *compossible*, meaning: mutually consistent within the same world. That something is contingent is, according to Leibniz, equivalent to saying that it is neither impossible nor necessary in the logical sense, namely, on pain of contradiction. But because, in Leibniz's view, *everything that happens occurs by virtue of reason* and purpose, what is contingent must not be confused with what is accidental or arbitrary. Most important: it holds for all contingently existing monads that just as they came into existence at some point in the past, they may eventually perish at some point in the future. In this way *time* is introduced as a concept, and now we must tread cautiously.

In God "himself" nothing happens: God *is*. Therefore, when Spinoza in the manner of Parmenides identifies nature, or the world, with God, he excludes time, thus denying the possibility of change. Spinozism's greatest defect is its view of time as an illusion. With Leibniz, *time is a fundamental attribute of all possible, or potentially real, worlds*. A world wholly devoid of time is a world wherein nothing happens, and such a world is not a possible world. As the unmoved mover, God is the primary cause of everything that occurs in a possible world. The infinite assembly of possible worlds that constitutes the contents of divine thought is therefore distinguished by their temporal world-courses. Just as the actual world differs from all the many possible worlds, so does the realized world-course differ from all the infinitely many world-courses that are not realized.

Had Leibniz been acquainted with McTaggart, who attempted to disprove the reality of time, he would certainly have recognized the decisive difference between what McTaggart classified as the temporal *A-series: past, present, and future*, and what he classified as the temporal *B-series: before, during, and after*. This distinction could have clarified the difference between possible and real world-time. However, as it turned out, Leibniz ultimately considered all the world-times as possible times, that is, as *B-series*. In my opinion, this discloses a crucial weakness in his comprehension of time.

Furthermore, a coherent *possible world-course* is *a series of reasons and results*, whereas the *actual world-course* manifests its coherence as *a series of causes and effects*. Probably, this is what Leibniz meant to say; it may be asked whether or not he succeeded. The question arises from the fact that *reason-and-result* expresses the order of events statically as a frozen B-series, a possible world-course, while *cause-and-effect* expresses the course of events dynamically, as an evolving A-series, *i.e.*, as an actual world-course. It seems that Leibniz misjudged time by conceiving it as a sort of static relation.

My point is that the distinguishing feature of ***causality***, as compared to ***rationality***, refers to the difference between the ***production*** of something and the ***explanation*** hereof: *prima facie*, a cause produces its own effect whereas a reason explains its outcome. But if one views real world-time as an *A-series*, in contradistinction to all the possible world-times that are mere *B-series*, his entire philosophy is placed in a new light.

This move reduces the monadology from pretentious ontology to sober semantics. Such a reduction, of course, serves to enhance its acceptability to modern minds.

It is now incumbent to examine the relationship between possible worlds, world-times, or world-courses, and their contents, the events occurring in the course of time. Events do not hover freely around in the void, but are always associated with monads; conversely, a monad should be interpreted as a temporal sequence of events, or states. Any monad is a mirror of its own cosmos: *macrocosmos* is reflected in *microcosmos.* So, instead of persistently quoting his famous saying that "a monad has no windows", we should perhaps much rather say that "a monad is nothing but window"!

According to Leibniz, universal space is not a substance, as Descartes suggested, but a well-founded appearance. In this way the 'original / copy' dependency is reversed. Whereas each single *monad* represents its own universe as viewed in an individual perspective, the entire *cosmos* is simply the sum-total of such individual perspectives. Thus only the monads really exist, whereas their cosmos, defined as the logical sum of all co-existing monads, is nothing but a mirror-image reflecting their harmony!

This harmony, involving the notion of compossibility, explains the future as being inherent in the present in the very same way as the past is being preserved in the present. Just as every event participates in an unique all-embracing universal instant, so does each state of a monad mirror the simultaneous states of all its compossible monads.

But, inasmuch as a cosmic instant, conceived as the universal actualization of all simultaneously compossible monadic states, is both the causal outcome of everything that occurred in the past and the sufficient reason for everything that is going to happen in the future, *any single event entails the tempo-spatial unfolding of its entire universe*.

In this manner the unity of the universe is ensured by means of a micro-macro dialectics that may be said to have anticipated *the idea of holography* by over 250 years. It is as if the world were nothing but a beautiful rainbow produced by the reflection of the divine light in the infinitesimal drops of an infinite and all-embracing heavenly dew! The distance to the hard-boiled materialism of Hobbes, e.g., is indeed dazzling!

Next, it is incumbent on us to carefully analyse the idea of spatial extension. From this analysis it will emerge that, just as the monadic harmony ensures the coherence of time, it similarly provides the key to a reconstruction of space by means of time: Dr. Johnson's attempt to refute the immaterialism of Berkeley relied on his senses; as we know, he simply kicked a stone! Hume, who was wiser, knew from experience that the good bishop was not that easily refuted, and therefore he spared his toe! But it is interesting to consider what Berkeley wrote in his *Commonplace Book* because his rejection of the substantiality of matter and extension is reminiscent of Leibniz:

"Of solidity see Locke .. if anyone asks what solidity is, let him put a flint between his hands and he will know: extension of body is continuity of solid, extension of space is continuity of unsolid, etc. .. Why may not I say that visible extension is a continuity of visible points, tangible extension is a continuity of tangible points?"

This is a precise analysis of the problem of space as it presented itself to Leibniz!

But how did Leibniz himself evaluate the positions of his immediate predecessors? Whereas Descartes saw cogitation and extension as two separate substances interacting in man *via glandula pinealis*, Spinoza reduced their status to two opposite attributes of God, or nature, or the only substance, by his hypothesis of psycho-physical parallellism. Newton who, in contrast to Descartes and Spinoza, accepted that space might be empty, saw both time and space as mathematical entities and described space as a divine "tool", viz., as the omnipresent *sensorium* of the omniscient God.

Confronted with these vast speculations Leibniz, like Plato, stressed that extension, viewed as a concept, is delusive. Space itself is not a substance with separate existence and reality, and it is least of all a divine attribute, or sensorium! However, since extension is a property of those extended things whose appearance is corporeal, it cannot be reduced to a mere illusion. Solidity, which appears to be the basic property of all material objects, cannot be grasped and understood by reason, it can solely be sensed. Leibniz had not forgotten why Descartes were not immediately willing to accept the testimony of his own senses with respect to the presumed reality of space and extended bodies.

Descartes' point was that our senses may possibly deceive us and, for this reason, our accept of their testimony is an expression of faith, or belief. Although such a belief can be due either to indolent habit or to rational decision, it nevertheless remains belief. Having invented the science of analytic geometry, he found it necessary to demonstrate that his favourite discipline was not a mental figment, but was firmly rooted in reality.

Hence he saw himself compelled to follow a very tortuous path - viz., to prove that God exists, is perfect, and does not deceive us - in order to make sure that his creation, the external world, is real and not a fiction. In this connection it is important to notice, that the very possibility of deceit, whether divine or demonic, is rooted in the difference between essence and existence, or between nature and reality.

To Leibniz, this difference was crucial, and thus, unlike Descartes, he argued not theologically but philosophically, by giving an analysis of the very concept of extension. As we noted above, his conclusion was that extension is neither substance nor attribute, but simply a law-like appearance, in his own words: a well founded *phenomenon*.

This ascertainment gives rise to a question of legitimacy: How can the appearance of spatial extension be justified? The answer is: by means of the concept of simultaneity! A monad, like its surrounding cosmos, is first and foremost a temporal series of events. Therefore the identity of an individual monad must manifest itself as temporal continuity. In line with this, modern physics describes particles as *world-lines* of *proper time*.

Seen *theologically* the entire history, or program, of a monad is given *ab aeterno* by virtue of its latent notion, or idea, which is grasped intuitively by the wisdom of God. Conceived *cosmologically*, this history, or program, is unfolded as a series of events arranged in space in accordance with the before-and-after relation of the *B-series*. Considered *anthropologically*, i.e., through introspection, the life of a human monad is experienced as a changing sequence of sensations and reflections, passions and actions, realized in time according to the past-present-future order of the *A-series.*

Let us contemplate the logical level as the foundation of all rational explanation. Here we must first consider the formulation of the fundamental principle of identity, or the principle of non-contradiction. The schematic expression: $A = A$ or $\neg A \neq A$, to which Leibniz frequently refers, is not wholly adequate to his actual intention.

As chairman Mao once noticed, there is nothing contradictory involved in claiming both the same and its opposite concerning the same thing, unless they are made to apply in the same *way*, and at the same *time*. According to Mao, this point justifies the claim that the principle of contradiction is the prime mover of all development in time!

Leibniz, of course, did not go that far, although he naturally was well aware of the significance of the reservation concerning *simultaneity*. However, he defined substance as a notion to be unfolded by the successive assignment and cancellation of predicates.

We are now able to grasp his ingenious idea to solve the old problem of extension: space is simply the sum of relations between a set of substances existing at the same time. Therefore, just as ***time*** is the same as ***succession***, so ***space*** is the same as ***co-existence***. For this reason the concept of *simultaneity* is *crucial* to both physics and logic.

For Leibniz, the notion of *substance* is the concept of something that can only be posited as a subject and which therefore cannot be predicated of anything except itself. The notion of the simultaneous co-existence of more than a single substance is therefore necessarily equivalent to the concept of the spatial extension of their relative distances. But only the substances exist separately, and space as the sum of their mutual relations at right angles to the course of time is just a manifestation of the absence of contradiction that characterizes the sum of predicates describing their simultaneous states.

For the same reason the universe, when being comprehended spatially, is nothing but an expression of that mutual consistency and compossibility which distinguishes the description of simultaneous states in all co-existing substances. And this point is decisive, as the monads "mirror" each other by virtue of the predicates contained in their ideas.

The cosmos as the epitome of all possible propositions regarding co-existence is therefore founded on that synchronicity which is implicit in the monadic harmony. In this way, the pre-established harmony of the universe displays its logical character: simultaneous existence. ***Thus simultaneity, not causality, is the cement of the universe. So it is certain that only one world is real, viz., the world to which we ourselves belong. Several simultaneous and concurrently real worlds are impossible.***

Owing to this doctrine of the relational structure of space - a structure manifesting itself in the simultaneous totality of particular perspectives that are at the same time both individual and universal, and that are all founded in the harmony of the monads, Leibniz anticipated those currents of modern relativistic cosmology that aspire to model the structure of the universe as a mathematical edifice based on the exchange of light signals between equivalent, socalled fundamental, observers.

We are now ready to discuss some fundamental principles of Leibniz's philosophy. First and foremost: it is crucial to Leibniz that God never acts without a sufficient reason. This is his famous principle of sufficient reason, *principium rationis sufficientis*.

The sufficient reason for something is always anchored in the notion of that thing. The concept of a possible substance, therefore, contains in itself as a subject all those predicates which can ever be truthfully asserted concerning this substance.

The *principle of inherence*, asserting that a predicate always inheres in its subject, refers to semantics, but is tightly related to the metaphysical principle of sufficient reason. It is an immediate consequence of the principle of inherence that all truth is *analytical*. That a given statement is analytical means that its truth value can be discerned by an analysis that proves that the predicates used in a statement are contained in the concept of the subject in question, so that denying the statement leads to contradiction.

Then we encounter a third fundamental principle of Leibniz, namely, the principle of contradiction or, rather, that of non-contradiction, which he apparently identified with the principle of identity, *principium identitatis*. A variation of this is the principle of the identity of indiscernibles, *principium identitatis indiscernibilii*, which is expressing the individuality of the monads: no two monads are perfectly identical.

So we ultimately have three closely related basic principles: *a) the metaphysical principle of rationality*, which refers all truth to God; *b) the semantical principle of inherence*, claiming all truth to be analytical; and *c) the logical principle of identity* or non-contradiction which, by means of discernibility, relates epistemology to ontology.

Further, as a fourth principle, we may add: *unum quudque quando est oportet esse.* The import of this *principle of factuality* is that the denial of facts involves contradiction. There are still other, such as the *principle of contingency*, stating that, whereas for God *essentia involvit existentiam*, for contingent beings *essentia non involvit existentiam*.

Furthermore, Leibniz distinguished between *verités de raison* and *verités du fait*: *a*) truths of reason are statements that are *necessarily true*, therefore they are true of every possible or conceivable universe, and their truth value is consequently *á priori*. *b*) truths of experience are statements that are *contingently true*, meaning that they are true only with regard to the real world, and their truth value is accordingly *á posteriori*.

How can we explain, on this background, that Leibniz found it possible to defend the idea of freedom ? Unlike Spinoza, he was clearly not inclined to determinism.

Spinoza, by claiming that possibility, actuality and necessity are indistinguishable, accepted only one nodality, viz., necessity: all that which is not necessarily not the case, but is nevertheless actualized at some instant, only apparently differs from necessity.

To counter this, Leibniz invoked the difference between *three kinds of necessity: logical, physical, and ethical*. But, by defining the possible as equivalent to that which is not necessarily not the case, he might as well have spoken of three kinds of possibility, defining necessity accordingly. Hence we recover the Stoic trisectioning of philosophy into *logic, physics & ethics*, as reflected in their modalities:

1) *Logical necessity* is absolute and unconditional; representing the painful threat of contradiction, it reflects the rules of language and is valid for all possible worlds. Absolute necessity is connected to reality through the necessary existence of God: the prerogative of divine existence is to be necessary simply because it is possible.

2) *Physical necessity* is relative, conditional, and based on divine convention; manifesting itself in the laws of nature, it represents the structure of the real world. Relative necessity reflects the temporal structure of any of the possible worlds such that, if the world were realized, its course of events would be processed perfectly predictable. But the actual development of the world in question would also be perfectly unrestrained in the sense that it would be a realization of the content latent in the notion of this world; this notion is known from eternity by God, who always acts with perfect freedom.

3) *Ethical, or moral, necessity* is imperative, or obligatory; its purpose being to proliferate human goodness in the actual world, it presupposes the freedom of the will as a capacity to perform good actions, and it derives its strength from duty, or conscience. Imperative necessity is ordained by the divine will which, freely and deliberately, has revealed its inherent goodness by creating the very best among all the possible worlds, viz., that world which is governed by the best of laws, thereby furthering the possibility of a perpetual increase of human goodness and happiness in the course of time.

The goodness of God is chosen freely: nothing compels him to act, or to act well: interpreted this way, divine freedom and divine providence are compatible, even though the divine providence is understood as being infallible, as it obviously should be; *human freedom can then be seen as an imperfect analogy to the freedom of God.*

Voltaire, however, found sufficient reason to reject these speculations as empty. With his reference to the fatal earthquake in Lisboa, he felt that he had refuted Leibniz as thoroughly as Dr. Johnson would later claim to have refuted Berkeley.

Theologically, his objection is insignificant, for faith is always in conflict with that which is readily perceived by the senses; the person who obstinately refuses to believe can always find sufficient support in common sense experience.

Philosophically, whether or not one adheres to scepticism seems to be a matter of personal taste and temperament; at least one should be aware, as noticed by Kierkegaard, that an act of the will cannot be effected, or changed, by rational arguments.

Historically, however, it is clear that the two Christian apologists, Leibniz and Berkeley, were confronted with the very same difficulty, so aptly described by Hume: "This (way of reasoning) admits of no answer, and produces no conviction".

For that reason, Russell, Lovejoy, and other critics, found determinism inevitable. The problem is that Leibniz weakened his case by adding two more assumptions.

First, the real world, chosen by God as the best of the infinite set of possible worlds, enjoys a privileged status which is accorded to it by virtue of its own nature.

Second, even if the best world were not selected with necessity, it is still a foregone conclusion that the world which is selected is the best of all possible worlds.

The opinion that these two supplementary assertions muddle his entire argument may appear justified. Worse still, it is difficult to see how he could have avoided them, since an omnipotent and omniscient creator who nevertheless fails to select the best of all the available possibilities can hardly be considered perfect.

But the question is whether it befits God to know contingent truths timelessly?

I will briefly consider the problem of freedom in some more detail, since it is so crucial to my topic: the Leibnizian concept of time. It was in the process of his constant battling with this problem that Leibniz invented his socalled "possible world" semantics. His proposal, so original that it has continued to inspire modern logicians such as, e.g., S. Kripke and A.N. Prior, merits a very careful consideration.

Let us first return to theology with the reassurance that the reader can decide for himself whether he should strip the philosophical problem of its mythological trappings. If it is assumed that the creator is not only perfect, but also necessarily perfect, does it not then of necessity follow that this perfection will manifest itself in the choice of the best? Leibniz would not have admitted that; but even if we do, his logic continues to offer other loopholes for a consistent defense of the freedom of God.

According to N. Rescher, one loophole is hidden in the fact that, in order to reach the conclusion that the real world was created with necessity, one has to make also the further assumption that the present world is not only the best, but is necessarily the best. God infallibly perceives a certain possible world to be better than all the others; however, his providential comprehension does not of itself involve necessity.

While it is true that God as a perfect mathematician, utilizing the calculus invented by Leibniz, might be able to compare maxima and minima with unfailing exactitude, such an analysis is infinite and can never be brought to a conclusion. The counterfactual conjecture that God might have selected another world is still possible.

However, B. Mates does not accept this idea. Although no finite intellect would be competent to test the divine calculation, God would certainly himself be capable of deciding whether or not he was in error. Neither would it be feasible to imagine that no world was the best one of the entire set of possible worlds, even if the set were infinite. because, if that were the case, God would have had absolutely no reason to create.

Following Mates, it is instead a better way to escape determinism to recognize that nothing in the nature of any possible world could compel God to create that world. Inasmuch as God was free to abstain from creating anything at all, we can safely claim that the actual world was created in freedom. I agree that this is the crucial point.

But there is still a point in claiming that the divine calculation would have no end. It seems absurd to claim that the relative perfection of worlds is ordered in a linear series, and if we expect the divine calculation to be non-linear it may well be infinitely complex. So: maybe God had to perform his "computation" as an "experiment" in real time?

In contrast to Spinoza, who explained away freedom as awareness of necessity, we see that, for Leibniz, freedom is the fundamental concept, so that all causal necessity in the real world is anchored in the perfect freedom of its Creator.

To conclude, I shall dispute the old dogma of the timelessness of contingent truths. As I see it, all contingent truths steadily emerge in a time, created and upheld by God. Such truths come into existence in precisely the same way as does reality itself.

Now truth endures, whereas all reality will eventually perish. Truth *is* eternal, then. But, as Kierkegaard emphasized: *True eternity is prospective!* -

G O D

A Perfect One

Oneness in Itself

Essence = **Existence**

Unity (origin)	**Reason** (thought)	**Will** (action)
Power (source)	**Wisdom** (concept)	**Goodness** (reality)
Father (being)	**Offspring** (image)	**Spirit** (nature)
⇓	⇓	⇓

M O N A D S

The Imperfect Many

Oneness in Otherness

Essence ≠ **Existence**

Truths of Reason : Valid of All Possible Worlds

. C R E A T I O N .

Truths of Fact : Valid of The Only Real World

Cosmos = Harmony

MONADOLOGY

⇓ ⇑	⇓ ⇑	⇓ ⇑
Theology	**Cosmology**	**Anthropology**
⇓ ⇑	⇓ ⇑	⇓ ⇑
Logic	**Physics**	**Ethics**

Mogens True Wegener

LEIBNIZIAN PRINCIPLES

THE PRINCIPLE OF REASON
Principium Rationis Sufficientis
'every truth is founded upon reason'
'there is a sufficient reason for all truth'

THE PRINCIPLE OF INHERENCE
Praedicatium In-est Subiecto
'all truth of a being inheres in the notion of that being'
'the notion of a being is the source of all truth about it'

THE PRINCIPLE OF IDENTITY
Principium Identitatis Indiscernibiliae
'all monads are known and distinguished by their idea'
'any monad is identical with itself and different to all others'
(antecedent necessity: eternal, absolute, unconditional)

THE PRINCIPLE OF FACTUALITY
Unumquodque, quando est, oportet esse
'what is the presently case is inevitably the case'
'no fact can be denied except on pain of contradiction'
(subsequent necessity: temporal, relative, conditional)

THE PRINCIPLE OF CONTINGENCY
'in a perfect being essence and existence are inseparable'
'in an imperfect being essense and existence are separable'

THE PRINCIPLE OF COMPOSSIBILITY
'the notion of a possible world contains no contradiction'
'the notion of a possible world is complete ab aeterno'

THE PRINCIPLE OF CONVENIENCE
'the laws of nature are determined by divine choice'
'the natural order bears the sign of divine wisdom'

THE PRINCIPLE OF FREEDOM
'God freely created the best of all possible worlds'
'all nature is rooted in the freedom of God'

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Nicholas Rescher [1967]: *The Philosophy of Leibniz*, Prentice-Hall.
Benson Mates [1986]: *The Philosophy of Leibniz*, Oxford UP.