ABSTRACT

LEIBNIZ
CRITIQUE OF SYMBOLIC REASONING

The purpose of this brief essay is not to describe the aspects of Leibniz's natural science which I assume to be understood, but rather to explore certain meta-concepts which underlie this construction. The scaffolding that Leibniz uses to erect his edifice determines its very structure. In my earlier writings I have described this superstructure as *hermetic*, as although it does not contradict other sources, in its deepest sense it obeys the essential parameters of this tradition, which might be described approximately as follows:

-- being is activity, internal vitality, energy, which *is expressed* in the infinite manifestations of the material world;

-- unity is the single ontological ground of being, to which all ideal plurality must be reduced;

-- the universality of things is thus an organic analogical plurality of living beings;

-- there must therefore exist a περιχώρησις or connection between the different ontological levels of being, whatever their phenomenal structure;

-- hence this validates the argument of a *transversal analogy* in the breadth and limits "discovered" by experience and reason, which form part of the "universality of things";

-- there is thus no rupture, only transmission and evolution; that is to say, correspondence or *expression* between what is outside and what is inside, between the past and the present, between mythical-religious belief and scientific progress, between science and morals, between the universal and the singular;

-- as man is the memory and symbol of the connection between things, any scientific construction of the world must involve the display of *symbolic reason*.

At this crucial moment in western history, Leibniz's scientific project might have involved remaining faithful to this universal tradition, divesting it of its uncontrollable esoteric elements and steering it along the new avenues opened up by modern science, to whose development he made such an important contribution.

If this hypothesis were correct or plausible, a reading of Leibniz's texts would call for us to maintain *a different epistemic attitude* from what might be required when reading other scientists of his time, as his ideas were misunderstood or rejected by his contemporaries. Everywhere in his prolific *oeuvre* we come across disconcerting suggestions that we might be tempted to

dismiss as “metaphors”, “poetic allusions”, “rhetorical strategies”, when perhaps in his mind these may be nothing less than “symbols”, “échantillons de la nature”, a kaleidoscopic vision of the real: different *external* configurations with the same *internal* components, as seen in the costume of “Harlequin, Emperor of the Moon”. Nature would be radically symbolic: “like the streets and the squares in a city from which we can start and to which we can arrive coming from everywhere”, says the philosopher (Chapter 1).

In summary, my proposal is as follows. Confronted by the science of the *abstract* and the *evidence* advocated by Descartes and the new mechanicism, Leibniz wanted to maintain the science of the *concrete* and of *approximation*, the science of *subjects* without renouncing the abstract and the universal. The philosopher assumes as an axiom the traditional idea of the *vis insita rebus*, and outlines an *ontology of the singular*, but using the new channels of formal mathematics and empirical experimentation which he handles according to his own personal approach. He does this by *overdetermining* all the concepts received from Galileo and Huygens; that is, he inserts *semantically* into the equations of movement certain elements which these equations do not contain *analytically*. He thus arrives at a new notion of the *natural inertia* or *internal resistance* of all bodies, he casts off Cartesian *extension,* and leads us to –or he rediscovers– the intrinsic stable force of all bodies which is *a result* of the activity of simple substance and its *spontaneity*. He uses this idea to develop his doctrine of *aggregates of substances* or *bodies*, the distinction between *primitive forces* and *derivative forces* and their mutual *expression*. Chapter 2 is dedicated to justifying these statements by analysing the *a posteriori* and *a priori* arguments on dynamics.

Now then**,** the keys to understanding this construction are the four concepts which form the superstructure of the whole edifice: the *infinite, continuity, expression* and *transversal analogy.* These concepts cannot be irreversibly inferred from one other like the terms of a deductive mathematical system; each one shows the same reality in a *different* but *equipotent* manner: the organic unity of the world and its activity. But at the same time, they are all governed by certain axioms of a Pythagorean–neo-Platonic nature, which Leibniz never tires of repeating and which underpins the essential distinction between the *continuous ideal* and the *discrete actual*:

-- without *real unity, ideal* plurality cannot be understood;

-- without the *permanent* and *essential,* the *successive* and *accidental* cannot be understood;

-- neither unity nor permanence form part of plurality and succession, but instead found them together;

-- unity is indestructible.

The *reversibility* Leibniz confers on these four concepts means we can enter the edifice through any one of them. I have opted for *continuity*, as it to this aspect that the philosopher turns at the decisive moments of his reasoning. There is a text on the law of continuity which I call "canonical" –the *Lettre de M. L. sur un principe général utile à l'explication des lois de la nature par la consideration de la sagesse divine* (1687, GP III 51-55), in response to P. Malebranche– which I have used to attempt to describe the other three concepts. Continuity is not only a *heuristic* or epistemic concept, but also, and above all, an *architectural* concept: when the "data" for a known system are "ordered *in a certain way*", we can conclude that the "results" of another unknown system, with which we can discern some *structural likeness*, will also be "ordered *in the same way*"; in other words, it is the very universality of things which is *ordered by means of endless approximations*: nothing in nature occurs by leaps, either in local motion or in the *degrees of perfection* of things (Chapter 3). A careful study of the "ontology of continuity" reveals that it is based on the principle of *perfection* or the *maximum of relations that can be composed between all the systems in the world*: this is the "sagesse infinie" or as Leibniz would say in the controversy with de Volder, the "law of order" (Chapter 4).

Chapters 5 and 6 address two applications of continuity. The first is mathematical continuity and the *metaphysical* dimension contained in the infinitesimal calculus by virtue of this continuity. The numerological work of the young Leibniz and his dream of a universal characteristic led to his discovery that it is the combination of the sums and the differences in their numerical series which reveal the *characteristic triangle*, which he had studied in the writings of Pascal. This finding enabled him to move from the combinatory to the continuum, and to distinguish between the continuum and the discrete. The characteristic triangle becomes the *symbol* of the simple substance, as in both systems the axioms mentioned above can be verified: stable unity (equation of the curve/spontaneity of the substance) and continuous succession (terms of the series/modifications of the substance). The infinitesimal calculus is on the one hand a way to approach the *unattainable infinite* by means of *never-ending finite approximations*; and is on the other hand the most intelligible *expression* of continuity.

Mathematical continuity, where the distinction between *the discrete* and *the continuum* has been demonstrated, allows us to move to biological continuity and to be reunited with the *vis insita rebus* with which we started (Chapter 6). Because, in effect, as occurs with the terms of a mathematical series, Leibniz understood that the continuous chain of production of living beings is only verified in the *transformation of organic bodies* of the substances while these remain stable in their variations, in the same way that the law or equation of the curve remains stable precisely in order to make possible the succession of its terms. Only through divine creation or

annihilation do simple substances begin or cease to exist; the only thing we see is the growth or shrinking of the organic bodies of these substances, what Leibniz likes to call the "change of theatre" involving the *same* actors. This change of scene may and should be measured *mechanically* according to the laws of physics and biology. Leibniz drew up a complex monadological taxonomy in order to understand why a stone or a marble quarry *as such* is not a living being, *although everything in them and everything in the whole universe is full of life without containing even minimal particles of matter*.

The whole of this transit between levels in nature required continuity to be endowed with a definitive ontological ground: this is *expression*. In paragraphs 8-9 and 14 of *Discours de métaphysique* Leibniz explains the *connection between all things* with the following reasoning. God produces these things continually in the same way we produce our thoughts: each substance, according to its *own* module of activity, *expresses* the character of the infinite wisdom and the omnipotence of God, and is somewhat *similar* to a perception or infinite knowledge (analogy of *attribution*: "Principiatum est ejusdem naturae Principii, sed differt a Principio in eo quod habet Principiati", according to the neo-Platonic tradition); and as a result, each substance, "each living mirror of divinity", *expresses or relates* all the other substances through its own internal language (analogy of *proportionality*). This double analogy *justifies and requires* the technical study of the formal structures of similarity between all the levels of ontological reality, and this task will fall to semiologists, scientists and metaphysicists (Chapter 7).

In the last years of his life, after 1704, Leibniz synthesised the whole of this construction in a final principle of analogy, which he called his "principle of uniformity in the *depth* of things, and of variety in the *degrees of perfection* they manifest": no being in nature can be "a deserter from the divine order".

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For centuries, symbols and myths were the instruments with which man reconnected with mystery, with the sacred, with the Other, with the originating whole.

But both then and now, man is a builder of symbols, in response to his need to associate his fragile existence to the perennial. From the Christian *gnosis*, the *Corpus Hermeticum*, the neo-Platonic schools, cabbalistic speculation, mediaeval alchemistic anthropology through to the cosmogonical systems of the Renaissance, the symbol can be seen in a wide variety of scenographies, but it always embodies the *pathos of life* which informs man's inside –the microcosmos– from the cosmic unity of the whole universe –the macrocosmos. This is the *symbolic reason*.

The 17th century, with its prevalence of mathematical reasoning and the Cartesian subject, saw numerous enquiring and judicious intellects experience

the vertiginous extinction of a spherical and harmonious world and the emergence of another new, exact and infinite world. They tried to make both of these worlds compatible. One of these privileged spirits was Leibniz, and he dedicated his immense work to it in all areas.

Limiting myself solely to his scientific and metaphysical production, and armed only with his texts, I have attempted to recreate the way in which the philosopher metabolises both these universes: why his Dynamic is *reversible*; why continuity is an *ontological* structure of being and not merely a heuristic instrument of invention; why infinitesimal calculus is a *symbol* of the activity of substances and bodies; why analogies of analogies exist *in infinitum*; and whether *expression,* which connects all levels, was not perhaps for him anything other than a socially correct compromise which concealed that notion of symbol which said: "the inside is like the outside…". This is maybe the *critique of symbolic reason* made by Leibniz.