ABSTRACT

Leibniz's Theory of definition

The theory of real definition plays a fundamental role in Leibniz's mature philosophy. In epistemology, the definition is a *modus sciendi*. Leibniz following the Greek classical tradition (Plato and Aristotle), look in the definition for the foundation of his *novum organon* (the *ars progrediendi*, which includes the *ars inveniendi* and *ars demonstrandi*). According to his doctrine of universal interconnection of all things, the new method requires insert each notion, each knowledge, in serial orders according general laws which allow to universal connection of fields and contents of any kind.

My purpose here is to examine the critical role played by the definition in the Leibniz's theory of knowledge and metaphysics. The notion of *definition* is set precisely by its relation to other notions (*cause, condition, attribute, reason, essence / existence, possibility / necessity*, etc.); but especially by its relation to notion of *requisite*, in the first period of his epistemological inquiries; and by its relationship to *law-of-the series*, in Leibniz's mature metaphysics.

According to Leibnizian doctrine of universal interconnection of all things, the notion of *definition* is configured in his system as a notion (and relating notions) in epistemology, psychology, metaphysics, ethics, and logic. Leibniz's opposition to Descartes is established by the divergence between the Cartesian method *per ideas* and the Leibnizian method *per definitionem*. According to new Leibnizian method, in any cognitive process, in any way to obtain truth, only an exhaustive definitional procedure can ensure the possibility of each notion used in our considerations and arguments, and thus can assure us the truth of our conclusions. Leibniz designs a new method for the treatment of notions

and issues in the fields of epistemology and metaphysics. Our research is organized as follows:

In chapter 1, we track the origin of the notion of *definition* in the philosophy of Leibniz. First, by inserting this notion in the previous philosophical tradition, and particularly placing it in relation to notion of *requisite*, inherited from the scholastic tradition. And second, analyzing the reformulation that Leibniz makes of that notion together with notion of possibility to configure the notion of *real definition*. We analyze the theory of requisites developed by Leibniz in two periods: 1669 – 1679; and 1679 – 1689. In the first period, the notion of requisite is linked to notions of *reason* and *cause*. Leibniz elaborates these notions in order to take distance from the Cartesian and Spinozian theories about the *cause* and on God as *causa sui*. In the second period, Leibniz restates his theory of requisites to fit into his theory of the real definition, in order to take distance from the Cartesian method of ideas, and from Hobbesian nominalism. The internal requisites of a thing are the sufficient reason of the possibility of that thing. Requisites are the constituents of real definition; and every real definition support affirmation of possibility.

In Chapter 2, we present the confrontation between the Leibnizian method of *real definition* and other definitional methods advocated in his time, particularly we focus in the differences between *real* and *genetic* definitions; and we evaluate the Leibniz' criticism of genetic definitions.

Hobbes, Spinoza, and Tschirnhaus consider genetic definitions as the only causal definitions and the only ones suitable for scientific knowledge. Leibniz also stresses the epistemological function of genetic definitions, but disagrees with Spinoza and Tschirnhaus about whether genetic (or causal) definitions are the only real definitions. Leibniz sought applicability of the definitional method not only in the realm of essences and eternal truths, but also in the field of existences and contingent truths. In the second field, unable for us to finish the *a priori* analysis of notions, we can only conclude (*a posteriori*) by sensory experience from *esse* to *posse* (from existence to possibility). The *a priori* analysis of notions is replaced by the use of sensory experience, which allows us to gradually approach to verification of our rational inferences. Therefore, definitions of «complex» notions concerning physical and chemical properties of bodies (or of individual beings no fully analysed in terms of its requisites or «simples» constituents, since are infinite) are always exposed to doubt that there is a latent contradiction. That doubt can only be removed by finding an object gathering the characteristics listed in the definition. Leibniz emphasizes the need to

distinguish between *constitution* and *generation*. The former expresses a possible way of *production*, whereas the latter the *actual* one. In geometry the same essence (entity) can be expressed by several definitions, bat in actual existences the genesis is one.

In Chapter 3, we review Leibnizian theory of real definition in metaphysics and as applied to *a priori* demonstration of existence of God. In papers dating from 1676 Leibniz explained his criticism of Cartesian and Spinozian doctrine on the idea and existence of God; and he gives the following definition of God: God $=_{\text{def.}}$ *subjectum omnium formarum absolutarum simplicium, absolutarum id est affirmativarum* ∞ *Ens perfectissimum, seu quod omnem Essentiam continet, seu quod omnes habet Qualitates, seu omnia attributa affirmativa, seu subjectum omnium perfectionum sive perfectissimum* ∞ *Ens a se, seu Ens necessarium.* From real definition of God is inferred the existence of God; and it allows the following theorem («the most beautiful and important proposition of the doctrine of modality»): if the Necessary Being is possible, He exists. The theorem has conditional form: $p \rightarrow q$: if p (God defined as *Ens necessarium*) is possible, q (God actually exists). Therefore we have to prove that p is possible, for the conclusion q is correct. However the constituents (attributes) of notion of God are indefinable and unanalyzable, and therefore we cannot verify its possibility, i. e., we cannot continue *ad finem* the analysis of attributes of God, and find that there is no contradiction. Therefore, here we cannot directly apply the method of real definition to proof the possibility of notion of God. Leibniz seeks an indirect proof. He does not prove that the n constituents (perfections) of notion of God are compatibles, but that *proposition* declaring its incompatibility is indemonstrable (= it is not necessarily true = is false). So, in this «proof» Leibniz obviously concludes that the proposition *attributes A and B are incompatible* is indemonstrable, because its demonstration would require the analysis of A or B or both. But it is equally obvious that the proposition *attributes A and B are compatible* is indemonstrable. Therefore, any proposition about the compatibility / incompatibility of simple attributes is indemonstrable and so undecidable. Over the years, Leibniz became more skeptical of validity of this proof. He confines himself to saying that possibility of God as compatibility of all perfections requires no demonstrations, as in fact the adversaries of it will never be able to demonstrate the impossibility of notion of God. But it is not a complete and authentic «geometric» demonstration.

In chapter 4, we focus on the last period of Leibniz's epistemological and metaphysical inquiries, where the notion of *definition* become

associate with notion of *the-law-of-the-series* of the substance. In Leibniz's mature metaphysics, the substance is individualized by its place in the series; the *haecceitas* or nature of individual substance consists in the *law-of-the-series* of its changes. In Leibniz's dynamic —mainly developed in the 1690s— the «complete individual concept» theory (dominant in the previous period of Leibniz's though (*Discours de métaphysique*) is replaced by dynamical «the-law-of-the-series» theory; and through this law seeks Leibniz to link the dynamics with metaphysics. In the substantial realm, the law of the series of individual substance is understood as a function generating the series of ordered states, and showing the causal link between the primitive active force and derivative forces of bodies (modifications or successive states of the substances). The essence of the substance consists in the law of the series of its changes. In substantial series as in the series of numbers, the law is internal, and a thing takes place in whole universe according to *law* or *principle of reason*. This principle is formulate differently depending on the substance to be understood as a corporeal substance (dynamic period) or as a monad (monadologic period).

In chapter 5, we analyze the law of the series doctrine in its application to charactering the primitive substance or monad (God). According to substantial pluralism (multiplicity of monads), there is plurality of serial orders individualizing the substantial unities (existences, monads, etc.), and there are series of series, functional correspondences (similarities, analogies) between different serial orders. Thus, the functional law *pro gradu essentiae* applied to infinite multiplicity of possibles in logical space (the divine intellect), determines the existential unities. These multiplicities form a continuum and progress to infinity. At infinity, in limit, the greatest possibility is equivalent to the greatest perfection or necessity and the greatest tendency to existence. In the possible absolutely perfect the tendency to exist is necessary, and is valid the axiom *a posse ad esse valet consequentia*. Now, what is the relationship between the limit (God) and the series of possibles? In his latter writings on mathematics and metaphysics (and last decade of his life) Leibniz introduces the concept of *homogony*. Bay means of this concept (coined in his writings of 1710 – 1715) Leibniz aims solve the problem of *limit* in «the labyrinth of continuum»: the relation between the continuum and its limits. That problem concerns not only to geometry but also to metaphysics. Two things are *homogone* when, although are not of the same genus, they are nevertheless the same birth, and one can come to be (*abire*) the other by continuous mutation. Time and moment, space

and point, limit and limited thing, although they are not *homogeneous,* they are nevertheless *homogonous*, since one can come to be the other by a continuous mutation. In the field of modalities, the homogonous continuous progression makes one becomes or vanishes into the other: the necessity (the line) is not composed of possibilities (of points); much we progress in the infinite series of possibles, we can always find a quantity of possibility between a term of series an the limit; but the homogeneous continuous progression of more to more *possibility* makes it to vanish into *necessity*. The absolutely perfect possible become necessary; the supreme infinite possibility or perfection is the necessity, the necessary substance which we call God. In metaphysics, the infinite series of possible beings tends to limit, and by step to limit operation, is dynamically equalized (dynamical equality) to necessary being (God). At infinity, the greatest possibility (essence or reality) equals the greatest perfection, the necessary being, God, who is defined as the limit of infinite series of possible beings, as «étant une suite simple de l'être possible» (*Monadology*, § 40).